



Government of the People's Republic of Bangladesh  
Office of the Project Director  
Strengthening the capacity of Bangladesh Food Safety Authority Project (1<sup>st</sup> Revised)  
Bangladesh Food Safety Authority (BFSA)  
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**Terms of Reference (TOR)**  
**for**  
**Hiring a firm for E-Learning Platform design and development for**  
**Bangladesh Food Safety Authority (BFSA)**

**Package No: SD1**  
**Lot-1**  
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## 1. Background

Bangladesh Food Safety Authority (BFSA) is an autonomous national food safety regulatory Authority which works as a statutory organization. The authority was formed in 02 February 2015 under Section 5 of The Food Safety Act, 2013 of the People's Republic of Bangladesh with the mandate of making "provisions for the establishment of an efficient and effective authority and for regulating, through coordination, the activities relating to food production, import, stock supply, marketing and sales, so as to ensure the rights toward access to safe food through appropriate application of scientific process, upon repealing and enacting the existing laws connected thereto." To ensure the right to safe food through the proper practice of scientific methods, the work of Bangladesh Safe Food Authority is to provide cooperation through coordination of related activities in food production, import, processing, storage, supply, marketing and sales process and to coordinate the functions of all organizations related to safe food management.

Ensuring safe food standards and quality standards, Bangladesh Food safety Authority has a monitoring activity which is facing some problems such as applicants don't have any idea regarding food safety compliances and from where they can receive the training. Recently, Bangladesh Food safety Authority has started to train the food business operators as manual process but it's difficult to provide any report instantly.

Furthermore, the rise of e-learning platforms and the success of similar initiatives in various sectors have paved the way for this project's feasibility. The ability to offer specialized courses, connect learners with experts, and accommodate diverse learning styles and preferences aligns with the broader trends in education and professional development.

In summary, the background of the project is grounded in the recognition of the pivotal role that the food and hospitality industry plays in society and the economy. It seeks to harness the power of technology to create a dynamic and accessible learning environment that empowers individuals and businesses to excel and innovate within this ever-evolving sector.

## 2. Executive Summary:

The Online Training and Learning Portal for Food Business, Restaurants, and Hotels is a specialized platform designed to meet the unique learning needs of professionals and businesses operating in the food and hospitality industry. This portal aims to enhance skills, knowledge, and operational excellence within the realm of food services, culinary arts, restaurant management, and hotel operations.



### 3. Objectives:

The primary objective of the Online Training and Learning Portal for Food Business, Restaurants, and Hotels is to establish a comprehensive and specialized platform that caters to the unique learning needs of professionals and enterprises operating within the food and hospitality sector. This portal aims to foster skill enhancement, knowledge acquisition, and operational excellence by providing a diverse array of high-quality courses and resources. By facilitating continuous learning, the portal aspires to equip individuals with the essential skills and insights needed to excel in culinary arts, restaurant management, hospitality services, and related domains. Furthermore, the platform seeks to promote professional development through certifications, assessments, and personalized learning paths, empowering learners to advance their careers and bolster their expertise. With an emphasis on interaction and collaboration, the portal aims to create a vibrant community where learners, instructors, and industry experts can engage, share knowledge, and collectively contribute to the industry's growth. By adhering to principles of accessibility and inclusivity, the portal strives to provide an enriching educational experience for a diverse audience. Through continuous updates, partnerships, and data-driven insights, the portal aspires to stay aligned with evolving industry standards, encourage sustainability and innovation, and ultimately serve as a pivotal resource for fostering excellence and advancement within the dynamic realm of food business, restaurants, and hotels. The portal aims to address the unique learning needs of individuals and organizations in this sector, fostering continuous growth, innovation, and success. Key objectives include:

- A. **Culinary Excellence:** Provide comprehensive training programs that cover culinary techniques, food preparation, presentation, and innovation, enabling chefs and kitchen staff to deliver exceptional dining experiences.
- B. **Restaurant Management:** Offer courses focused on restaurant operations, staff management, customer service, menu planning, and marketing to enhance the efficiency and profitability of food establishments.
- C. **Hospitality Services:** Provide training modules on guest relations, front desk management, housekeeping, and hospitality etiquette to elevate the quality of service in hotels and restaurants.
- D. **Food Safety and Hygiene:** Deliver in-depth training on food safety protocols, hygiene standards, and compliance with health regulations to ensure the health and well-being of customers.
- E. **Menu Development:** Offer guidance on creating diverse and appealing menus, considering dietary preferences, trends, and nutritional aspects, to attract a wider customer base.
- F. **Beverage Management:** Provide knowledge and skills related to beverage selection, mixology, wine pairing, and bar management for professionals in the restaurant and bar industry.
- G. **Sustainability Practices:** Incorporate training on sustainable sourcing, waste reduction, and eco-friendly practices to promote environmental responsibility within the food business.
- H. **Business Operations:** Offer courses in financial management, inventory control, cost analysis, and business planning to equip restaurant and hotel owners with essential business skills.

- I. **Specialized Cuisine:** Provide modules focusing on specific cuisines, dietary preferences (e.g., vegan, gluten-free), and cultural culinary traditions to diversify culinary offerings.
- J. **Digital Marketing:** Integrate training on digital marketing strategies, social media management, and online presence to help food businesses effectively reach and engage their target audiences.
- K. **Licensing and Regulations:** Provide guidance on obtaining necessary licenses, permits, and complying with industry regulations, ensuring legal and operational compliance.
- L. **Professional Development:** Offer certifications, workshops, and masterclasses led by renowned chefs, industry experts, and successful restaurateurs to foster continuous growth and learning.
- M. **Networking and Collaboration:** Facilitate a platform for professionals to connect, share experiences, and collaborate, fostering a supportive community within the food and hospitality industry.

The Online Training and Learning Portal for Food Business, Restaurants, and Hotels aims to empower individuals and businesses in the food and hospitality sector with the knowledge, skills, and resources necessary to excel in their respective roles. By offering specialized training and fostering a community of industry professionals, the portal seeks to contribute to the growth, innovation, and success of food-related ventures.

## 4. Scope of work

Scope of Work for Developing an Online Training and Learning Portal for Food Business Operators, Restaurants, and Hotels

### 4.1. Project Overview:

Develop an online training and learning portal tailored specifically to the needs of professionals and businesses in the food business, restaurant, and hotel industry. The portal will provide a comprehensive platform for skill development, knowledge enhancement, and operational excellence within the realm of culinary arts, restaurant management, and hospitality services.

### 4.2. Portal Development:

Design and develop a user-friendly, responsive, and visually appealing online portal that offers a seamless learning experience for learners in the food and hospitality industry.

### 4.3. Content Creation and Management:

- a. Curate and create a diverse range of high-quality course content, including videos, tutorials, articles, quizzes, and assignments, in collaboration with subject matter experts and industry professionals.
- b. Implement a content management system (CMS) that allows easy addition, modification, and organization of course materials.

### 4.4. Course Offerings:

- a. Develop a variety of specialized courses covering culinary techniques, restaurant management, hospitality services, menu development, beverage management, sustainability practices, and more.



b. Ensure that each course is structured logically, with clear learning objectives, modules, and assessments.

**4.5. Interactive Learning Features:**

Incorporate interactive elements such as quizzes, assignments, simulations, and discussion forums to engage learners and encourage active participation.

**4.6. User Profiles and Personalization:**

Implement user profiles where learners can track their progress, access certificates of completion, and customize their learning paths based on their interests and career goals.

**4.7. Certifications and Assessments:**

Create a robust assessment system to evaluate learners' understanding of course materials. Issue certificates upon successful completion of courses and assessments.

**4.8. Collaboration and Networking:**

Integrate features that allow learners to connect, interact, and collaborate with peers, instructors, and industry professionals through forums, chats, and networking events.

**4.9. E-Commerce Integration (Optional):**

If desired, implement an e-commerce module to allow learners to purchase courses and subscriptions securely.

**4.10. Data Analytics and Reporting:**

Implement analytics tools to track user engagement, course completion rates, assessment results, and other relevant metrics. Generate reports for administrators and instructors.

**4.11. Responsive Design and Accessibility:**

Ensure the portal is fully responsive across devices (desktop, tablet, mobile) and adheres to accessibility standards, making it usable by all learners.

**4.12. Security and Privacy:**

Implement robust security measures to protect user data, payment information, and ensure secure transmission of sensitive information.

**4.13. Technical Support and Maintenance:**

Provide ongoing technical support, troubleshooting, and regular maintenance to ensure the portal's smooth operation and optimal performance.

**4.14. Training and Documentation:**

Provide comprehensive training for administrators and instructors on portal usage, content management, and reporting. Develop user documentation and guides for learners.

  
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#### **4.15. Launch and Marketing:**

Assist with the launch of the portal, including promotional strategies, marketing materials, and outreach to potential learners and industry partners.

#### **4.16. Timeline and Milestones:**

Provide a detailed project timeline with key milestones, development phases, testing, and launch dates.

#### **4.17. Budget and Costs:**

Present a transparent breakdown of the budget, including development costs, content creation expenses, e-commerce integration (if applicable), and ongoing maintenance fees.

#### **4.18. Communication and Feedback:**

Establish regular communication channels for project updates, feedback, and collaboration between the development team and the client.

The scope of work outlined above encompasses the development and implementation of a comprehensive online training and learning portal for professionals and businesses in the food business, restaurant, and hotel industry. This project aims to provide a valuable resource for skill development, knowledge enhancement, and operational excellence within the specified domain.

## **5. Functional requirements**

Functional Requirements for the Online Training and Learning Portal for Food Business, Restaurants, and Hotels:

### **5.1. User Registration and Authentication:**

1) a. **Registration Form:** Provide a user-friendly registration form with fields for essential information, including:

- Full name
- Email address
- Password
- Contact information (e.g., phone number)
- User type (student, instructor, administrator)

b. **Validation:** Implement validation checks for email format, password strength, and other relevant fields. Notify users of any errors and provide guidance on how to correct them.

c. **Email Verification:** Send a verification link to the user's email address upon registration. Users should click this link to confirm their email and activate their accounts.

d. **Captcha or Anti-bot Measures:** Implement captcha or other anti-bot mechanisms to prevent automated registration by bots.

e. **Terms of Service and Privacy Policy:** Include checkboxes for users to agree to the platform's terms of service and privacy policy during registration.

f. **Optional Fields:** Allow users to provide additional information optionally, such as a profile picture, bio, or social media profiles.

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g. **Error Handling:** Clearly communicate any registration errors, such as duplicate email addresses or invalid data, and guide users on how to resolve them.

## 2) User Authentication:

a. **Login Functionality:** Provide a login form with fields for email and password.

b. **Remember Me:** Include a "Remember Me" option to allow users to stay logged in for a certain period (using cookies).

c. **Forgot Password:** Offer a "Forgot Password" feature that allows users to reset their passwords via a password reset link sent to their registered email address.

### d. Security Measures:

- Implement password hashing and salting to securely store user passwords.
- Enforce password complexity requirements.
- Implement account lockout after multiple failed login attempts to prevent brute-force attacks.

e. **Session Management:** Ensure that user sessions are managed securely. Users should be automatically logged out after a period of inactivity.

f. **Logout:** Provide a clear and accessible logout option for users to log out securely.

g. **Two-Factor Authentication (2FA):** Consider implementing 2FA as an optional security feature to enhance account security.

## 3) Account Management:

a. **Profile Editing:** Allow users to edit their profile information, including email address and contact details.

b. **Password Change:** Provide an option for users to change their passwords from within their accounts.

c. **Account Deactivation and Deletion:** Allow users to deactivate or delete their accounts if they choose to do so.

## 4) Security and Privacy:

a. **Data Encryption:** Ensure that all data transmission (e.g., login credentials) is encrypted using secure protocols (HTTPS).

b. **Privacy Settings:** Allow users to set privacy preferences for their accounts, including who can view their profile and contact them.

c. **Data Protection:** Implement GDPR-compliant data protection measures, including the ability for users to request their data to be deleted (right to be forgotten).

d. **Account Recovery:** Establish a secure account recovery process for users who lose access to their accounts.

## 5.3. User Profiles:

### 1) Profile Information:

a. **Basic Information:** Users should be able to provide and edit basic information such as:

- Full name
- Profile picture or avatar
- Contact information (email, phone number)
- Location (optional)
- Job title or role

  
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- b. **Biography or About Me:** Offer a section where users can write a brief bio or description about themselves, including their professional background and interests.
- c. **Social Media Links:** Allow users to add links to their social media profiles (e.g., LinkedIn, Twitter) if they wish to connect with others professionally.

#### 2) **Privacy Settings:**

a. **Profile Visibility:** Provide options for users to control who can view their profile. Options may include:

- **Public:** Visible to all users.
- **Registered Users:** Visible to other registered users.
- **Private:** Visible to selected connections or followers.

b. **Contact Information:** Allow users to choose which contact information is visible on their profile, if any.

#### 3) **User Dashboard:**

a. **Course Progress:** Display a summary of the user's progress in enrolled courses, including completed courses, current courses, and grades (if applicable).

b. **Certifications and Badges:** Show any certifications or badges earned by the user for completing courses or achieving milestones.

c. **Recent Activity:** Provide a feed of the user's recent activity, such as course updates, forum posts, or connections/followers.

#### 4) **Course Enrollment:**

a. **Enroll in Courses:** Allow users to browse and enroll in courses directly from their profile.

b. **Course History:** Maintain a history of all courses the user has enrolled in, completed, or dropped.

#### 5) **Connections and Followers:**

a. **Followers:** Allow users to follow other users or instructors to receive updates on their activities and courses.

b. **Connections:** Enable users to send connection requests to others, creating a professional network within the platform.

c. **Privacy Controls:** Offer privacy settings that allow users to manage their followers and connections, including the ability to accept or reject connection requests.

#### 6) **Activity Feed:**

a. **User Posts:** Allow users to post updates, questions, or share content within the platform. These posts can appear in the user's activity feed and potentially in group discussions or forums.

b. **Comments and Likes:** Enable users to comment on and like posts made by others.

c. **Hashtags and Mentions:** Implement hashtag support and user mentions to facilitate discussions and discoverability of content.

#### 7) **Notification Preferences:**

a. **Email Notifications:** Let users customize their email notification preferences for course updates, new connections, messages, and other activities.

b. **In-App Notifications:** Provide in-app notifications for real-time updates, such as when someone follows or connects with the user.

#### 8) Analytics:

- a. **Profile Views:** Allow users to see who has viewed their profile (if they have chosen to make their profile visible to registered users).
- b. **Performance Metrics:** Provide users with data on their learning progress, such as course completion rates, assessment scores, and skill development.

#### 9) Security and Privacy:

- a. **Data Privacy:** Ensure that user profile data is securely stored and protected in compliance with privacy regulations (e.g., GDPR).
- b. **Data Deletion:** Implement a process for users to request the deletion of their profile and associated data.

### 5.4. Course Catalog:

#### 1) Course Listings:

- a. **Course Titles:** Display course titles prominently, making them clickable to access detailed course information.
- b. **Course Thumbnails:** Include course thumbnails or cover images to visually represent each course.
- c. **Course Descriptions:** Provide concise and informative course descriptions to give users an overview of the content and objectives.
- d. **Instructor Information:** Display the name and credentials of the course instructor or author.

#### 2) Search and Filter Functionality:

- a. **Search Bar:** Include a search bar that allows users to search for courses by keywords, course titles, or instructor names.
- b. **Filter Options:** Offer filtering options, such as course categories (e.g., culinary arts, restaurant management), skill levels (beginner, intermediate, advanced), and course duration.
- c. **Sorting:** Allow users to sort course listings by relevance, popularity, start date, or price.

#### 3) Course Details:

- a. **Detailed Course Pages:** Clicking on a course should lead to a detailed course page with the following information:
  - Course outline and syllabus.
  - Learning objectives and outcomes.
  - Prerequisites, if any.
  - Estimated course duration.
  - Course format (video lectures, quizzes, assignments, etc.).
  - Instructor's bio and contact information.
- b. **Pricing Information:** If applicable, display course pricing, payment options, and whether there are any discounts or promotions.
- c. **Enrollment Options:** Include an option to enroll in the course directly from the course detail page.
- d. **Sample Content:** Provide access to a sample lesson or module to give users a preview of the course content.
- e. **Reviews and Ratings:** Allow users to read and submit reviews and ratings for the course.



#### 4) **Enrollment and Progress Tracking:**

- a. **Enrollment Process:** Make it easy for users to enroll in courses with a clear "Enroll Now" or "Start Learning" button.
- b. **Progress Tracking:** Once enrolled, users should have access to their course progress, including completed lessons, assignments, and grades (if applicable).

#### 5) **Course Categories and Tags:**

- a. **Categorization:** Organize courses into relevant categories (e.g., cooking techniques, hospitality management) to facilitate browsing.
- b. **Tagging:** Implement tagging to further classify courses based on topics, skills, or specializations.

#### 6) **Recommended Courses:**

- a. **Personalized Recommendations:** Use algorithms to recommend courses to users based on their profile, interests, and previous learning history.

#### 7) **Course Availability:**

- a. **Course Schedule:** Display course start and end dates, and indicate whether a course is currently open for enrollment.
- b. **Self-Paced Courses:** Offer self-paced courses that users can start at any time.

#### 8) **Course Preview:**

- a. **Demo Videos:** Include short preview videos or trailers for courses to give users a sense of the course content and style.

#### 9) **Accessibility and Localization:**

- a. **Accessibility:** Ensure the course catalog is accessible to users with disabilities in compliance with accessibility standards (e.g., WCAG).
- b. **Multilingual Support:** Provide support for multiple languages to cater to a diverse user base.

#### 10) **Integration with User Profiles:**

- a. **Enrollment History:** Display a user's enrolled courses and progress on their profile.
- b. **Recommendations:** Use a user's profile information and course history to provide personalized course recommendations.

#### 11) **User Reviews and Feedback:**

- a. **Review and Rating System:** Allow users to leave reviews and ratings for courses, which can help other users make informed decisions.

#### 12) **Mobile Responsiveness:**

- a. Ensure that the course catalog is mobile-responsive for users who access the platform on smartphones and tablets.

#### 13) **Security and Privacy:**

- a. Protect user data and ensure that personal information is not exposed in course listings or during enrollment.



## 5.5. Course Content Delivery:

### 1) Content Formats:

- a. **Multimedia Content:** Support a variety of content formats, including video lectures, audio, text-based materials (PDFs, eBooks), images, presentations, and interactive elements like quizzes and assignments.
- b. **Live Webinars:** If applicable, provide the option for live webinars or virtual classrooms for real-time interaction with instructors.

### 2) Content Organization:

- a. **Module Structure:** Organize course content into modules or units, making it easy for learners to navigate and follow the course progression.
- b. **Table of Contents:** Include a clear and interactive table of contents for each module to allow learners to jump to specific sections.
- c. **Progress Indicators:** Display progress indicators, such as completion bars or checkmarks, to show learners their progress within each module.
- d. **Navigation Controls:** Provide forward and backward navigation within modules, as well as the ability to go back to the main course page.

### 3) Video Content:

- a. **Video Player:** Use a reliable video player with features like playback speed control, full-screen mode, and captions (if available).
- b. **Transcripts:** Offer video transcripts to accommodate learners with hearing disabilities and enhance content accessibility.
- c. **Quality Options:** Allow users to adjust video quality to suit their internet connection.

### 4) Interactive Elements:

- a. **Quizzes and Assessments:** Embed quizzes, assignments, and assessments within the course content, with automatic grading and feedback.
- b. **Discussion Forums:** Include discussion forums or comment sections for each module, enabling learners to ask questions and discuss the content.
- c. **Interactive Simulations:** If relevant, provide interactive simulations or scenarios to reinforce learning.

### 5) Content Accessibility:

- a. **WCAG Compliance:** Ensure that all course content meets accessibility standards, such as WCAG (Web Content Accessibility Guidelines), to accommodate learners with disabilities.
- b. **Text Alternatives:** Use alt text for images and provide accessible document formats for text-based materials.

### 6) Mobile Responsiveness:

- a. Ensure that course content is accessible and optimized for mobile devices, allowing learners to study on smartphones and tablets.

### 7) Content Progress Tracking:

- a. **Completion Tracking:** Automatically track and display learners' progress within a course, module, or individual lesson.
- b. **Resume Feature:** Enable learners to resume where they left off, even if they log out or close their browser.

  
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#### 8) Downloads and Resources:

- a. Allow learners to download course materials for offline access, such as PDF lecture notes or reading assignments.
- b. Provide additional resources, such as supplementary readings, case studies, or external links for further exploration.

#### 9) Feedback and Ratings:

- a. Include a feedback mechanism for learners to rate and comment on specific lessons or modules.
- b. Use learner feedback to improve content and course design.

#### 10) Search Functionality:

- a. Implement a search feature within course content, allowing learners to quickly find specific topics or keywords within lessons.

#### 11) Content Authoring Tools (for Instructors):

- a. Provide instructors with user-friendly tools for creating and editing course content, including text, multimedia, and interactive elements.
- b. Support version control and collaboration among multiple instructors if needed.

#### 12) Content Updates:

- a. Allow for content updates and revisions as new information becomes available or industry standards change.
- b. Notify learners of updates and changes in the course content.

#### 13) Security and Privacy:

- a. Ensure that course content is protected from unauthorized access and downloading to prevent piracy.
- b. Protect user data and ensure that personal information is not exposed within the content.

### 5.6. Interactive Learning:

#### 1) Interactive Content Types:

- a. **Quizzes and Assessments:** Include a variety of question types such as multiple-choice, true/false, short answer, and essay questions. Provide instant feedback and scoring for learners.
- b. **Assignments:** Allow instructors to create and grade assignments. Support file uploads for assignments that require documents or multimedia submissions.
- c. **Discussions and Forums:** Implement discussion forums where learners can post questions, engage in discussions, and share insights with peers and instructors.
- d. **Polls and Surveys:** Integrate polling and survey tools to gather feedback and opinions from learners.
- e. **Interactive Simulations:** If relevant to the subject matter, include interactive simulations or virtual labs for hands-on learning experiences.

#### 2) Feedback and Progress Tracking:

- a. **Immediate Feedback:** Provide immediate feedback on quiz and assignment submissions, including correct answers and explanations.
- b. **Progress Monitoring:** Enable learners to track their progress in quizzes and assignments, showing which activities they have completed and which are pending.



c. **Grading and Analytics:** Give instructors tools to efficiently grade assignments and quizzes, with the ability to view learner performance analytics.

3) **Gamification:**

a. **Badges and Certificates:** Award badges and certificates for completing lessons, modules, or entire courses. Make these visible on learners' profiles.

b. **Leaderboards:** Implement leaderboards to encourage healthy competition among learners. Highlight top performers.

c. **Points and Rewards:** Assign points for completing activities and achieving milestones. Allow learners to redeem points for rewards or privileges.

4) **Collaboration and Social Learning:**

a. **Group Projects:** Enable learners to collaborate on group projects or assignments.

b. **Peer Review:** Implement peer review systems for assignments, where learners assess and provide feedback on each other's work.

c. **Social Sharing:** Allow learners to share their achievements, progress, and insights on social media platforms or within the portal.

5) **Live Webinars and Virtual Classrooms:**

a. **Scheduled Events:** Host live webinars or virtual classroom sessions with scheduled dates and times.

b. **Real-time Interaction:** Enable real-time interactions between instructors and learners, such as Q&A sessions, chat, and polls.

c. **Recording:** Record live sessions for learners who cannot attend in real-time.

6) **Accessibility and Inclusivity:**

a. **Accessible Content:** Ensure that all interactive elements are accessible to learners with disabilities. Provide alternative formats and text descriptions where necessary.

b. **Language Support:** Offer content in multiple languages to cater to a diverse audience.

7) **Feedback Mechanisms:**

a. **Surveys and Feedback Forms:** Collect feedback from learners on the effectiveness of interactive activities and the overall learning experience.

b. **Instructor Feedback:** Allow learners to provide feedback on instructors' teaching methods and communication.

8) **Technical Requirements:**

a. **Browser Compatibility:** Ensure that interactive features work across various web browsers and devices.

b. **Mobile Responsiveness:** Optimize interactive elements for mobile devices, including touch screens.

9) **Security and Privacy:**

a. **Data Protection:** Protect user data and ensure that privacy is maintained, especially in collaborative or discussion-based activities.

10) **User Support:**

a. **Help Center:** Provide learners with access to a help center or support resources to assist with technical issues related to interactive features.



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## 5.7. Progress Tracking:

### 1) User-Friendly Dashboard:

- a. **Clear Overview:** Upon login, learners should see a dashboard that offers a clear summary of their progress, including the courses they are enrolled in and their current status.
- b. **Course Progress:** Display a progress bar or percentage for each course, module, or lesson, indicating how much has been completed.
- c. **Completion Certificates:** If applicable, show completed courses and certifications achieved.

### 2) Detailed Course Progress:

- a. **Module-Level Tracking:** Allow learners to view their progress within each module or unit of a course.
- b. **Lesson-Level Tracking:** Provide details on which lessons or activities have been completed and which are pending.
- c. **Time Spent:** Display the total time spent on each course or module, helping learners gauge their commitment.

### 3) Assessment and Quiz Results:

- a. **Quiz Scores:** Show quiz and assessment scores, along with feedback, for learners to assess their performance.
- b. **Graded Assignments:** Display grades and feedback for assignments submitted by learners.

### 4) Completion Certificates:

- a. **Automated Certificate Generation:** Generate and issue certificates automatically when a course is completed successfully.
- b. **Certificate Access:** Make certificates accessible for download and sharing on the learner's profile.

### 5) Tracking Across Devices:

- a. **Cross-Device Compatibility:** Ensure that progress is accurately tracked across different devices (e.g., desktop, tablet, mobile) as learners may switch between them.
- b. **Syncing:** Ensure that progress syncs seamlessly when a learner moves between devices.

### 6) Content Tracking:

- a. **Content Access:** Log and track when learners access specific course materials or lessons.
- b. **Time-on-Page:** Record the amount of time learners spend on each lesson or page to gauge engagement.

### 7) Notifications:

- a. **Email Notifications:** Send automated email notifications to learners to remind them of incomplete courses or approaching deadlines.
- b. **In-App Reminders:** Display in-app notifications or alerts when significant milestones are achieved or deadlines are approaching.

### 8) Privacy and Data Protection:

- a. **Data Security:** Ensure that learner progress data is securely stored and protected in compliance with data privacy regulations.
- b. **User Consent:** Obtain user consent for tracking progress and storing data.

  
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### 9) **Export and Reporting:**

- a. **Export Data:** Provide administrators and instructors with the ability to export learner progress data for analysis and reporting purposes.
- b. **Analytics Dashboard:** Offer an analytics dashboard for instructors and administrators to monitor course and learner performance in real-time.

### 10) **Customization:**

- a. **Configurable Tracking:** Allow administrators to customize tracking parameters based on specific course requirements and learning objectives.

### 11) **Gamification and Rewards:**

- a. **Points and Leaderboards:** Integrate gamification elements, such as points earned for completing activities and leaderboards to encourage competition.

### 12) **Support and Help Center:**

- a. **Frequently Asked Questions:** Include a FAQ section or help center that addresses common progress tracking-related queries.

## 5.8. **Certifications and Achievements:**

### 1) **Certification Types:**

- a. **Course Completion Certificates:** Generate certificates automatically when learners successfully complete a course. These certificates should include the learner's name, course name, date of completion, and a unique certificate ID.
- b. **Achievement Badges:** Award digital badges for specific achievements within a course, such as completing a module, achieving a high score on a quiz, or actively participating in discussions.

### 2) **Certificate Design:**

- a. **Customizable Templates:** Provide customizable certificate templates that administrators can design to match the branding of the training portal.
- b. **Logo and Signature:** Allow for the inclusion of the training portal's logo and, optionally, the signature of the course instructor or a designated authority.
- c. **Certificate Format:** Certificates can be issued in PDF format, making them easy to download and print.

### 3) **Certificate Accessibility:**

- a. **Accessible PDFs:** Ensure that certificates are accessible to learners with disabilities by providing PDFs with text content rather than scanned images.
- b. **Text Alternatives:** Include text alternatives for any non-text elements on certificates, such as images or logos.

### 4) **Automated Generation:**

- a. **Automatic Issuance:** Certificates should be generated automatically when learners meet the predefined criteria for course completion or achievement.
- b. **Batch Processing:** Allow administrators to issue certificates in batch for multiple learners who have completed a course simultaneously.

### 5) **Verification and Validation:**

- a. **Verification URL:** Each certificate should contain a unique URL or QR code that allows anyone to verify its authenticity by visiting a web page.



b. **Verification Database:** Maintain a database of issued certificates, which can be used for verification purposes.

6) **Display on User Profiles:**

a. **User Profile Integration:** Certificates and badges should be displayed prominently on a learner's profile, providing a sense of accomplishment and recognition.

7) **Progress-Linked Certificates:**

a. **Tiered Certifications:** Offer tiered or advanced certificates for learners who complete a series of related courses or demonstrate mastery in a particular field.

b. **Stackable Certificates:** Allow learners to stack multiple certificates together, showcasing a broader skill set or specialization.

8) **Privacy and Data Protection:**

a. **Data Security:** Ensure that certificate-related data, including learner names and completion dates, is securely stored and protected in compliance with data privacy regulations.

b. **Data Deletion:** Implement a process for learners to request the deletion of their certificate-related data if they choose to do so.

9) **Notification and Celebration:**

a. **Certificate Notifications:** Send automated notifications to learners upon earning a certificate or badge, celebrating their achievement.

b. **Shareable Achievements:** Encourage learners to share their achievements on social media platforms to showcase their progress and promote the training portal.

10) **Learning Path Progress:**

a. **Learning Path Mapping:** Connect certificates and badges to specific learning paths or career tracks within the platform.

b. **Learning Path Recommendations:** Use achievements as a basis for recommending additional courses or career development opportunities.

11) **Maintenance and Updates:**

a. **Certificate Revocation:** In case of misconduct or breaches of integrity, administrators should have the ability to revoke issued certificates.

b. **Content Updates:** Ensure that certificates remain up to date and relevant as courses and training materials evolve.

## 5.9. Course Creation and Management (Admin):

1) **User-Friendly Course Creation Interface:**

a. **Intuitive Dashboard:** Provide administrators with a user-friendly dashboard where they can initiate course creation, view existing courses, and manage course settings.

b. **Step-by-Step Wizard:** Implement a step-by-step course creation wizard that guides administrators through the process.

2) **Course Information and Settings:**

a. **Course Title and Description:** Allow administrators to enter a course title, description, and objectives to provide a clear overview to potential learners.

b. **Course Duration:** Include fields for specifying the expected duration or time commitment for the course.



- c. **Privacy Settings:** Enable administrators to set course privacy (public, private, or restricted access) and enrollment preferences (open enrollment or approval required).
- d. **Prerequisites:** Allow administrators to specify any prerequisites or recommended prior knowledge for the course.
- e. **Course Schedule:** Provide options for scheduling course start and end dates or allowing self-paced access.
- f. **Access Controls:** Implement user access controls, including limiting course access by user type or enrollment period.

### 3) Content Creation and Management:

- a. **Content Authoring Tools:** Offer user-friendly content authoring tools that support various media types, such as text, images, videos, quizzes, and assignments.
- b. **Content Versioning:** Implement version control for course content, allowing administrators to track changes and revert to previous versions if necessary.
- c. **Multimedia Support:** Enable the inclusion of multimedia elements like embedded videos, audio, and presentations.
- d. **Rich Text Editing:** Provide rich text editing capabilities for creating and formatting course content.

### 4) Assessment and Evaluation:

- a. **Quiz and Assessment Creation:** Allow administrators to create quizzes and assessments with various question types (multiple-choice, true/false, short answer, essay) and define grading criteria.
- b. **Assignment Management:** Enable the creation and management of assignments, including setting submission deadlines and grading criteria.
- c. **Automated Grading:** Automate grading for quizzes and assessments where applicable, while allowing manual grading for subjective assessments.

### 5) Interactive Elements:

- a. **Discussion Forums:** Integrate discussion forums within courses to facilitate learner interaction and engagement.
- b. **Live Webinars:** If needed, offer the option to schedule and manage live webinars or virtual classroom sessions within the course.

### 6) Progress Tracking and Analytics:

- a. **Course Analytics:** Provide administrators with insights into course engagement, including enrollment numbers, learner progress, and assessment performance.
- b. **Learner Insights:** Offer tools to monitor individual learner progress, identify struggling learners, and track completion rates.

### 7) Course Marketing and Promotion:

- a. **Course Promotion:** Enable administrators to create promotional materials and landing pages for courses.
- b. **Discounts and Coupons:** Implement the ability to offer discounts or promotional codes for course enrollment.

### 8) Content Access Control:

- a. **User Roles and Permissions:** Define user roles (e.g., instructors, moderators, course assistants) and assign appropriate permissions for content creation, editing, and moderation.

b. **Content Moderation:** Implement content moderation features to ensure the quality and appropriateness of course materials.

9) **Feedback and Reporting:**

a. **User Feedback:** Allow learners to provide feedback on courses and report issues or concerns.

b. **Reporting Tools:** Provide reporting tools for administrators to track learner feedback, performance, and course success.

10) **Accessibility and Localization:**

a. **Accessibility Compliance:** Ensure that course creation and management tools are accessible to users with disabilities, complying with WCAG guidelines.

b. **Multilingual Support:** Offer the ability to create and manage courses in multiple languages to reach a global audience.

## 5.10. Instructor Collaboration (Admin and Instructors):

### Admin-Instructor Communication:

1) **Messaging System:**

a. **Inbox:** Provide a built-in messaging system that allows administrators and instructors to send and receive messages within the platform.

b. **Message Notifications:** Implement notifications to alert instructors and administrators about new messages or important updates.

c. **Message Attachments:** Allow attachments in messages for sharing documents, images, or course-related materials.

d. **Group Messaging:** Enable group messaging for discussions involving multiple instructors or administrators.

2) **Announcements:**

a. **Announcement Board:** Offer an announcement board where administrators can post important updates, news, or reminders.

b. **Email Notifications:** Send email notifications to instructors for important announcements or updates.

3) **Scheduling:**

a. **Calendar Integration:** Integrate a calendar system to schedule meetings, webinars, or collaboration sessions.

b. **Appointment Booking:** Enable instructors to schedule office hours or one-on-one meetings with learners.

c. **Availability Management:** Allow instructors to set and manage their availability for meetings and consultations.

### Course Management and Collaboration:

4) **Course Creation and Management:**

a. **Course Collaboration:** Enable multiple instructors to collaborate on creating and managing a course, including content creation, editing, and assessment.

b. **Access Permissions:** Define granular permissions for instructors, specifying what they can or cannot do within a course.

c. **Version Control:** Implement version control for course content to track changes made by different instructors.



#### 5) **Content Sharing:**

- a. **Resource Sharing:** Allow instructors to share course resources, such as lecture notes, presentations, and multimedia content.
- b. **Collaborative Editing:** Enable simultaneous collaborative editing of course materials by multiple instructors.

#### 6) **Grading and Assessment:**

- a. **Shared Grading:** Enable multiple instructors to grade assignments, quizzes, and assessments collaboratively.
- b. **Rubrics:** Provide a shared rubric system for consistent grading criteria.

#### 7) **Discussion and Collaboration Tools:**

- a. **Discussion Forums:** Offer discussion forums where instructors can interact with learners and each other.
- b. **Group Projects:** Enable instructors to create group projects or assignments that require collaboration among learners.

#### 8) **Analytics and Insights:**

- a. **Performance Tracking:** Allow instructors to access analytics and insights into learner engagement, progress, and performance.
- b. **Shared Reports:** Enable instructors to share reports and insights with other instructors or administrators.

Ability for instructors to manage their courses, including content updates and announcements

### 5.11. Discussion Forums and Social Interaction:

#### Discussion Forums:

##### 1) **User-Friendly Interface:**

- a. **Intuitive Design:** Create a user-friendly and intuitive interface that encourages participation in discussion forums.
- b. **Categorized Forums:** Organize forums by course, topic, or category to help users find relevant discussions.
- c. **Search Functionality:** Include a search bar to enable users to easily find specific discussions or posts.

##### 2) **Threaded Discussions:**

- a. **Threaded Format:** Present discussions in a threaded format, allowing users to reply to specific posts within a thread.
- b. **Quote and Mention:** Provide the ability to quote and mention other users within discussions to enhance communication.

##### 3) **User Profiles:**

- a. **User Avatars:** Allow users to upload profile pictures or avatars to personalize their forum presence.
- b. **User Bios:** Let users add a short bio or description to their profiles to share information about themselves.

  
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#### 4) **Notifications:**

- a. **Real-time Notifications:** Send real-time notifications to users when there are new replies or mentions in discussions.
- b. **Email Notifications:** Offer the option for users to receive email notifications for forum activity.

### 5.12. Analytics and Reporting (Admin):

#### User-Friendly Analytics Dashboard:

##### 1) **Dashboard Overview:**

- a. **Centralized Dashboard:** Provide a centralized dashboard that offers an overview of key performance metrics and data.
- b. **Customizable Widgets:** Allow administrators to customize the dashboard with widgets that display the metrics most relevant to their goals.
- c. **At-a-Glance Data:** Display important metrics such as course enrollment, completion rates, and user activity in a visually intuitive manner.

##### 2) **Data Visualization:**

- a. **Graphs and Charts:** Use graphs, charts, and visual aids to represent data, making it easier for administrators to interpret.
- b. **Interactive Reports:** Make reports interactive, allowing administrators to filter data, drill down into specific details, and export reports.

#### Data Export and Integration:

##### 3) **Export and Download:**

- a. **Data Export:** Allow administrators to export analytics data in common formats like CSV or Excel for offline analysis.
- b. **Scheduled Reports:** Provide the option to schedule automated reports for regular data updates.

##### 4) **Integration with External Tools:**

- a. **API Integration:** Allow integration with external analytics tools and platforms for advanced data analysis.
- b. **Single Sign-On (SSO):** Integrate with Single Sign-On solutions to streamline access to analytics for administrators.

### 5.13. Responsive Design:

Ensuring a consistent and user-friendly experience across devices (desktop, tablet, mobile). Responsive design is a critical aspect of web and application development that ensures that websites and web applications adapt and display content appropriately across various devices and screen sizes. It's essential for providing an optimal user experience, regardless of whether users

  
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are accessing the platform on a desktop computer, tablet, smartphone, or other devices. Here are detailed requirements and considerations for implementing responsive design:

## 5.14. Search and Navigation:

### 1) Search Functionality:

- a. **Robust Search Engine:** Implement a powerful search engine capable of indexing and retrieving various types of content, including courses, modules, lessons, documents, and discussions.
- b. **Keyword Search:** Allow users to perform keyword-based searches, with support for advanced search operators like AND, OR, NOT, and exact phrase searches.
- c. **Auto-Suggestions:** Provide auto-suggestions as users type in the search bar to assist in query formulation.
- d. **Filtering and Sorting:** Offer advanced search filters and sorting options to refine search results based on criteria such as relevance, date, or type of content.
- e. **Search Alerts:** Allow users to set up search alerts to receive notifications when new content matching their criteria is added.

### 2) User-Friendly Navigation:

- a. **Intuitive Menu Structure:** Organize content into a clear and logical menu structure, including navigation menus, sidebars, and breadcrumbs.
- b. **Hierarchical Menus:** Use hierarchical menus to categorize and group related content, making it easier for users to explore.
- c. **Mobile-Friendly Menus:** Ensure navigation menus are responsive and easily accessible on mobile devices with limited screen space.

### 3) Course Catalog:

- a. **Catalog Page:** Create a dedicated course catalog page where users can browse and filter available courses.
- b. **Course Thumbnails:** Include course thumbnails or images to provide a visual representation of each course.
- c. **Course Descriptions:** Display concise and informative course descriptions to help users understand the course's content and objectives.
- d. **Sort and Filter:** Allow users to sort courses by relevance, popularity, or date, and use filters to narrow down options by category, skill level, or other criteria.

### 4) Quick Access Features:

- a. **Recent Activity:** Show users their recent activity, such as courses in progress, completed courses, or recent discussions, on the homepage or dashboard.
- b. **Bookmarks:** Enable users to bookmark or save their favorite courses or content for easy access.
- c. **Continue Learning:** Provide a "continue learning" section that allows users to pick up where they left off in ongoing courses.

  
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### **5) Advanced Navigation Tools:**

- a. **Tags and Labels:** Implement a tagging system to categorize and label content, making it easier to find related materials.
- b. **Related Content:** Display related courses, modules, or discussions to help users discover additional relevant content.
- c. **Content Recommendations:** Use machine learning algorithms to provide personalized content recommendations based on user behavior and preferences.

### **6) Content Accessibility:**

- a. **Content Previews:** Offer content previews or sample lessons to give users a taste of what a course or module entails.
- b. **Accessibility Features:** Ensure that navigation elements and content are accessible to users with disabilities, complying with accessibility standards (e.g., WCAG).

## **5.15. Notification System:**

- a) **Course Updates:** Notify users about course announcements, new content additions, or changes to course schedules.
- b) **Assignment Deadlines:** Send reminders about upcoming assignment or quiz deadlines.
- c) **Discussion Activity:** Notify users of new discussion posts, replies, or mentions.
- d) **Progress Updates:** Update users on their course progress, including completed modules or achievements.
- e) **System Announcements:** Send important system-wide announcements or maintenance notifications.

## **5.16. Localization and Multi-language Support:**

Ability to provide content in multiple languages Bangla and English to accommodate diverse learners.

## **5.17. Technical Support:**

Contact and support channels for users to seek assistance or report issues.  
Troubleshooting guides and FAQs.

## **5.18. Security and Data Privacy:**

Secure data encryption during transmission and storage.

### **1) User Data Protection:**

- a. **Encryption:** Use strong encryption protocols (e.g., SSL/TLS) to secure data transmission between users' devices and the server.
- b. **Data at Rest Encryption:** Encrypt sensitive data stored on servers and databases to protect against unauthorized access.
- c. **Data Backup:** Regularly back up user data to prevent data loss in case of system failures or breaches.



## 2) User Authentication and Authorization:

- a. **Secure Login:** Implement secure login mechanisms, including password hashing, multi-factor authentication (MFA), or single sign-on (SSO).
- b. **Role-Based Access Control (RBAC):** Assign appropriate permissions to users based on their roles within the platform to restrict unauthorized access to sensitive data.

## 5.19. Admin Management (Admin):

### 1) User Management:

- a. **User Roles:** Define and assign different roles to administrators with varying levels of access and permissions (e.g., super admin, course admin, user manager).
- b. **User Registration:** Provide admin tools to manually register users or approve user registrations based on specific criteria.
- c. **User Search:** Implement user search and filtering options to locate and manage user accounts efficiently.
- d. **User Profiles:** Allow administrators to view and edit user profiles, including contact information, roles, and permissions.
- e. **User Suspension:** Enable administrators to suspend or deactivate user accounts when necessary.

### 2) Content Management:

- a. **Course Creation:** Allow admins to create and manage courses, including adding content, setting prerequisites, and defining access permissions.
- b. **Content Approval:** Implement a content approval workflow where admins can review and approve course materials created by instructors.
- c. **Content Version Control:** Provide version control for course content, allowing admins to track changes and revert to previous versions if needed.
- d. **Content Removal:** Allow admins to remove or archive outdated or irrelevant content.

### 3) Course Enrollment and Access Control:

- a. **Enrollment Management:** Enable administrators to enroll users in courses, including bulk enrollment options.
- b. **Access Permissions:** Define granular access permissions for administrators, specifying what they can or cannot do within courses and content.

### 4) Analytics and Reporting:

- a. **Analytics Dashboard:** Offer an analytics dashboard with insights into user activity, course performance, and platform usage.
- b. **Custom Reports:** Provide tools for administrators to generate custom reports tailored to their specific needs.
- c. **User Insights:** Allow administrators to access individual user analytics, including course progress and engagement.

  
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## 5) Communication and Notifications:

a. **Messaging:** Enable administrators to send messages or announcements to users or specific user groups.

b. **Notification Management:** Allow admins to configure system-wide notifications and alerts.

## 6) User Support and Help Desk:

a. **Help Desk:** Offer a dedicated help desk or support channel for administrators to get assistance with platform-related issues.

## 7) Content Review and Quality Assurance:

a. **Content Review Workflow:** Implement a content review and quality assurance process that allows administrators to ensure the accuracy and relevance of course materials.

b. **Feedback and Collaboration:** Enable administrators to provide feedback and collaborate with instructors on improving content quality.

## 8) Access Logs and Audit Trails:

a. **Audit Logs:** Maintain detailed access logs and audit trails to track administrator actions and user activity.

## 9) User Groups and Permissions:

a. **User Group Management:** Allow administrators to create and manage user groups for easier permissions management.

b. **Permission Assignment:** Enable administrators to assign permissions to user groups to streamline access control.

## 5.20. Mobile App Integration (Optional):

Compatibility with mobile devices through a dedicated app.

These functional requirements outline the core features and capabilities of the Online Training and Learning Portal for Food Business, Restaurants, and Hotels. The successful implementation of these requirements will create a robust and user-friendly platform that caters to the specific needs of professionals and businesses in the food and hospitality industry.

# 6. Non-Functional Requirements

## 6.1. Performance:

The portal should support a large number of concurrent users without significant degradation in response times or system performance.

Course content, including multimedia elements, should load efficiently to ensure a smooth learning experience.

Page load times and navigation should be optimized for quick access to course materials and features.

## 6.2. Scalability:

The platform architecture should be designed to accommodate future growth in terms of user base, courses, and content without requiring major overhauls.

  
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### **6.3. Reliability and Availability:**

The portal should have a high level of uptime, with minimal scheduled maintenance windows and downtime. Data backups and disaster recovery mechanisms should be in place to ensure the integrity of user data and course content.

### **6.4. Security:**

Robust data encryption should be implemented to protect user data, login credentials, and payment information. Access controls and authorization mechanisms should ensure that users only have access to the content and features appropriate to their roles.

### **6.5. Data Privacy:**

Compliance with data protection regulations (e.g., GDPR) should be ensured, with clear privacy policies and user consent mechanisms in place.

Learner data should be stored securely and used only for the intended purposes, with options for users to manage their data preferences.

### **6.6. Accessibility:**

The portal should adhere to accessibility standards (WCAG) to ensure that individuals with disabilities can use the platform effectively.

Text alternatives, keyboard navigation, and screen reader compatibility should be implemented.

### **6.7. Compatibility:**

The portal should be compatible with a wide range of web browsers and devices, ensuring a consistent experience for all users.

### **6.8. User Experience (UX):**

The user interface should be intuitive, user-friendly, and visually appealing, contributing to a positive learning experience. Consistent branding and design elements should be applied throughout the platform.

### **6.9. Mobile Responsiveness:**

The portal should provide a seamless and optimized experience on mobile devices, allowing learners to access content on the go.

### **6.10. Localization:**

The platform should support multiple languages and provide options for content localization to cater to a diverse user base.

### **6.11. Feedback and Improvement:**

User feedback mechanisms should be in place to gather suggestions and identify areas for improvement. Regular updates and enhancements based on user feedback should be implemented to enhance the overall user experience.

  
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### **6.12. Technical Support:**

Responsive and efficient customer support channels should be available to assist users with inquiries, issues, and technical challenges.

### **6.13. Third-Party Integrations:**

Integration with third-party tools, such as payment gateways or analytics platforms, should be seamless and reliable.

### **6.14. Documentation:**

Comprehensive user documentation, guides, and tutorials should be provided to assist users in navigating and utilizing the platform effectively.

### **6.15. Regulatory Compliance:**

The portal should adhere to relevant industry standards, regulations, and guidelines related to online learning, data protection, and e-commerce (if applicable).

These non-functional requirements ensure that the Online Training and Learning Portal for Food Business, Restaurants, and Hotels delivers a high-quality, reliable, secure, and user-friendly experience that meets the expectations of learners and industry professionals.

## **7. Testing and Monitoring**

To delivering a secure, reliable, and high-quality online training and learning portal that meets the needs and expectations of users while complying with industry standards and data privacy regulations by testing and monitoring.

#### **1) Quality Assurance Testing:**

- a. Describe the quality assurance (QA) testing processes that will be employed during the development and ongoing maintenance of the online training and learning portal.
- b. Highlight the importance of rigorous testing to identify and rectify any issues related to functionality, usability, and security.

#### **2) User Acceptance Testing (UAT):**

- a. Explain the plan for conducting user acceptance testing (UAT) to involve end-users, instructors, and administrators in evaluating the platform's usability and functionality.
- b. Outline the criteria and procedures for accepting or rejecting features or updates based on UAT results.

#### **3) Performance Testing:**

- a. Detail the performance testing procedures to ensure that the platform can handle concurrent users, traffic spikes, and various usage scenarios without degradation in performance.
- b. Specify the tools and methodologies used for load testing, stress testing, and scalability testing.

#### **4) Security Testing:**

- a. Describe the security testing protocols that will be employed to identify vulnerabilities, including penetration testing, vulnerability scanning, and code review processes.
- b. Explain how security findings will be addressed and remediated.



### 5) Compatibility Testing:

- a. Indicate that compatibility testing will be conducted to ensure that the platform functions correctly on different devices, web browsers, and operating systems.
- b. Highlight the importance of cross-browser and cross-device compatibility.

### 6) Accessibility Testing:

- a. Mention the commitment to conducting accessibility testing to ensure that the platform is usable by individuals with disabilities, complying with accessibility standards such as WCAG.
- b. Describe the testing tools and methodologies used for accessibility evaluation.

### 7) Data Integrity and Privacy Testing:

- a. Explain the measures taken to ensure data integrity and privacy, including data encryption, secure transmission, and compliance with relevant data protection regulations (e.g., GDPR, HIPAA).
- b. Detail the testing processes related to data security and privacy.

### 8) Monitoring and Logging:

- a. Describe the system's monitoring and logging capabilities, including real-time monitoring of server performance, user activity, and security events.
- b. Explain how log data will be stored, analyzed, and utilized for troubleshooting and security incident response.

### 9) Incident Response Plan:

- a. Highlight the presence of an incident response plan that outlines procedures for detecting, reporting, and mitigating security incidents.
- b. Indicate the commitment to notify affected parties in the event of a data breach or security incident.

### 10) Ongoing Monitoring and Maintenance:

- a. Explain the processes and tools for ongoing monitoring and maintenance to ensure the platform's continued performance, security, and usability.
- b. Mention regular software updates, patch management, and vulnerability assessment procedures.

### 11) Compliance Reporting:

- a. Describe how compliance with testing and monitoring standards, as well as data protection regulations, will be reported and documented.
- b. Highlight the provision of regular reports to stakeholders on testing outcomes, security measures, and compliance status.

### 12) User Feedback Integration:

- a. Explain how user feedback and reported issues will be integrated into the testing and monitoring process for continuous improvement.
- b. Emphasize the importance of user input in enhancing the platform's functionality and usability.

## 08. Team Composition

A multi-disciplinary expert team supported by different experts and field staffs may engage in the assignment from Service Provider as shown in the next table. Where appropriate and subject to approval by the client, the Service Provider can propose a single candidate with the expertise to fulfill more than one of the designated skills. It should be noted that not all of these positions, if any, are expected to be full-time throughout the duration of this assignment. But it is mandatory the Team Leader will be engaged full time at the time of development & implementation phase. BfSA insist to use appropriate resources to complete the project in timely manner.

  
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### 8.1. Required Key Personnel

Sl.	Positions and Number	Qualifications & Experiences
Key Personnel		
K-1	Team Leader and IT Expert – Project Manager (1)	<p><b>Qualifications:</b> Bachelor degree in Software Engineering/Computer Science/EEE/Mathematics/Physics/Applied Physics or relevant discipline; PMP/ PRINCE2/CSM certification and Database/SQL certification (Oracle/Microsoft/EDB PSQL or equivalent) is preferred.</p> <p><b>Experiences:</b> 10 years proven track record in designing, developing and supervising scalable database driven system; Experience of project management in government sector; Experience in maintaining full software development life cycle (SDLC);</p> <p><b>Responsibilities:</b> Requirement gathering and system analysis; Lead the design and development of fishing vessels and gears database; Lead project coordination and management of database driven web applications; Design and test all necessary entry forms in consultation with relevant actor</p>
K-2	Systems Analyst(1)	<p><b>Qualifications:</b> Bachelor degree in Software Engineering/Computer Science/EEE/Mathematics/Physics/Applied Physics or relevant discipline.</p> <p><b>Experiences:</b> He will have at least 10 years of experience including 5-3 years in requirement study, system analysis and conceptual data modelling.</p> <p><b>Responsibilities:</b> He will have hands-on experience in requirement study, system analysis, and writing software requirements specifications, in software development projects. Demonstrated experience in SDLC using popular tools like JIRA, Axure, Bugzilla, equivalent. Software configuration management (version control using Git/Equivalent)</p>

  
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Sl.	Positions and Number	Qualifications & Experiences
		<p>Three-Tier Application with MVC Framework using all popular databases like ORACLE/SQL SERVER/MySQL.            Front-end development with HTML5, CSS3 (bootstrap), Material UI framework, jQuery, JavaScript, JSON and AJAX            Integration of SMS gateway and bulk Email and SMS service            He should have good verbal and written communication skill in English. Communication skill in Bengali is nice to have.            He should have excellent presentation skill.</p>
K-3	Web Application Architect(1)	<p><b>Qualifications:</b>            Bachelor degree in Software Engineering/Computer Science/EEE/Mathematics/Physics/Applied Physics or relevant discipline.</p> <p><b>Experiences:</b>            He will have at least 10 years of experience including 5-3 years in requirement study, system analysis and conceptual data modelling.</p> <p><b>Responsibilities:</b></p> <p>He will have at least 8 years of experience including 3-4 years hands-on experience in web technology, system architecture and application design, preferably in web portals, mobile applications and Web Application.</p> <p>He will have hands-on experience in web services and SOA design and development, application system documentation. Background of web-based portal, Web Application and mobile application development / maintenance project is a desired. Demonstrated experience in SDLC using popular tools like JIRA, Axure, Bugzilla, equivalent.</p> <p>Software configuration management (version control using Git/Equivalent)</p> <p>Three-Tier Application with MVC Framework using all popular databases like ORACLE/SQL SERVER/MySQL.            Front-end development with HTML5, CSS3 (bootstrap), Material UI framework, jQuery, JavaScript, JSON and AJAX            Integration of SMS gateway and bulk Email and SMS service            He should have good verbal and written communication skill in English. Communication skill in Bengali is nice to have.            He should have excellent presentation skill.</p>

Sl.	Positions and Number	Qualifications & Experiences
K-4	Database Designer(1)	<p><b>Qualifications:</b> Bachelor's degree in Software Engineering/Computer Science/EEE or relevant discipline;</p> <p><b>Experiences:</b> He will have at least 10 years of experience including 5 years hands-on experience in conceptual and physical database design</p> <p><b>Responsibilities:</b> He will have hands-on experience in database design documentation, preferably in web-based software development/maintenance projects. Exposure in DBA activities is a plus. Background of web-based portal Development / maintenance project is a plus. Exposure in application architecture is desirable. He should have good verbal and written communication skill in English. Communication skill in Bengali is nice to have. He should have excellent presentation skill.</p>
K-5	Specialist System Support(1)	<p><b>Qualifications:</b> Bachelor's degree in Software Engineering/Computer Science/EEE or relevant discipline;</p> <p><b>Experiences:</b></p> <p>He will have at least 8 years of experience, including 3-2 years hands-on experience in setting up and maintaining system software, servers, network and communication hardware, installing and maintaining software environments in Linux environment</p> <p><b>Responsibilities:</b> He must have experience in system performance tuning Experience in user documentation in web-based software development / maintenance projects is highly desirable. Background of web-based portal, website and mobile application development / maintenance project is a plus. Knowledge in DBA is good to have. He should have good verbal and written communication skill in English. Communication skill in Bengali is nice to have.</p>
K-6	Test Manager(1)	<p><b>Qualifications:</b> Bachelor's degree in Software Engineering/Computer Science/EEE or relevant discipline;</p>



Sl.	Positions and Number	Qualifications & Experiences
		<p><b>Experiences:</b>            He will have at least 5 years of experience with at least 2 years of full time testing experience.            He must have at least 5 years of experience in leading a test team of at least 5 members, preferably in Agile development environment.</p> <p><b>Responsibilities:</b></p> <p>Experience in automated testing using automated testing tools (Selenium or similar) is highly desirable.            He must have experience and knowledge in Java web application testing with tools like JUnit, JMeter            He must have hands-on experience in test execution including Unit testing, Functional testing, Integration testing, System testing, Performance testing and Load testing            He must have comprehensive knowledge in software development life cycle (both in Waterfall model and Agile model) and processes, software quality assurance processes, software configuration management processes including release management process.            He must have experience in software configuration management, preferably using Version control software (like Subversion) is a big plus            He must have experience in writing test plans            He should be hands on in test cases writing, coding test cases for automated testing            He should be a team person maintaining 360-degree relationship in the project team.            Test lead experience in web-based software development and maintenance projects is a big plus.            He should have excellent verbal and written communication skill in English. Communication skill in Bengali is nice to have.            He should have excellent presentation skill.            He should be organized and perfectionist with trouble-shooting acumen.</p>
K-7	Web-developer Back-end(3)	<p><b>Qualifications:</b>            Bachelor's degree in Software Engineering/Computer Science/EEE or relevant discipline;</p> <p><b>Experiences:</b>            He will have minimum 5 years of experience as back-end programmer in web-based development / maintenance projects,</p>

  
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Sl.	Positions and Number	Qualifications & Experiences
		<p>preferably in hydrology information system development projects.</p> <p><b>Responsibilities:</b>  He must have hands-on knowledge and experience in Java 1.6 or newer, web services (mainly Restful), unit testing using automated tool, standard IDE like Eclipse IDE, design patterns, designing APIs and integrating with third party APIs, Tomcat application Server.  He must have hand-on knowledge in Oracle SQL and PLSQL programming.  He must have experience in application system documentation, user documentation, etc.  Having knowledge in front-end web application development using JSF, Primefaces, XHTML, JavaScript, CSS, HTML and IDE like Eclipse or similar, is a big plus.  Having knowledge in SOA is a big plus.  Having knowledge in Version control software (Subversion) is a big plus.  Exposure in Web Application and mobile application development / maintenance is a big plus.  Exposure in database design is preferable.  He should have excellent communication skill in written and spoken English. Communication skill in Bengali is nice to have.  He should have excellent presentation skill.  Domain knowledge in E-Learning Platform is a plus.</p>
K-8	User Experience Designer (2)	<p><b>Qualifications:</b>  Bachelor's degree in Software Engineering/Computer Science/EEE or relevant discipline;</p> <p><b>Experiences:</b>  He will have minimum 5 years of experience as User Experience Designer in portal, Web Application and mobile applications.</p> <p><b>Responsibilities:</b>  He should be a connoisseur in User Experience Design  He must have working knowledge in web technology, especially in css, html, xhtml  He should have hands-on experience in applying User Experience principles in at least 2 web-based projects.  He should have fair knowledge in front-end technology like JSP, Prime faces, IDE like Eclipse or similar.  He should have mentoring capability with excellent speaking and writing skill (in English) to coordinate with the project team and</p>



Sl.	Positions and Number	Qualifications & Experiences
		<p>the key client people, and driving them to a unanimous decision. Communication skill in Bengali is nice to have. He must have excellent presentation skill.</p>
K-9	Tester (1)	<p><b>Qualifications:</b> Bachelor's degree in Software Engineering/Computer Science/EEE or relevant discipline;</p> <p><b>Experiences:</b> He will have minimum 3 years of experience as User Experience Designer in portal, Web Application and mobile applications.</p> <p><b>Responsibilities:</b></p> <p>He will have 3 – 5 years of experience in executing tests and documenting test results, in software development / maintenance projects. Testing exposure in Agile development environment is essential. Experience in automated testing using automated testing tools (Selenium, Bugzilla or similar) is highly desirable. He must have experience and knowledge in web application testing. He must have hands-on experience in test execution including Functional testing, Integration testing, System testing, Performance testing and Load testing He should have understanding in software development life cycle (both in Waterfall model and agile model) and processes, software quality assurance processes, software configuration management processes including release management process. He should have understanding of software configuration management and configuration management tools. He should be hands-on in test cases writing. Coding test cases for automated testing, is a big plus. Fair communication skill in written and spoken English. Communication skill in Bengali is nice to have. Domain knowledge in E-Learning Platform is a big plus.</p>
K-10	Web-developer Front-end (3)	<p><b>Qualifications:</b> Bachelor's degree in Software Engineering/Computer Science/EEE or relevant discipline;</p> <p><b>Experiences:</b> He will have minimum 5 years of experience as User Experience Designer in portal, Web Application and mobile applications and experience in flutter.</p>

Sl.	Positions and Number	Qualifications & Experiences
		<p><b>Responsibilities:</b></p> <p>He will have minimum 5 years of experience as front-end programmer in web-based development / maintenance projects, flutter project.</p> <p>He must have hands-on knowledge and experience in front-end software development, using JSF, Primefaces, XHTML, JavaScript, CSS, HTML, IDE like Eclipse or similar, and unit testing using automated tool.</p> <p>He must have experience in developing wireframes and prototypes for web-based applications.</p> <p>He must have experience in application system documentation, user documentation, etc.</p> <p>Having knowledge in back-end web application development including RESTful Web Services and is a big plus.</p> <p>Having knowledge in SOA is a big plus.</p> <p>Having knowledge in Version control software (Subversion) is a big plus.</p> <p>Having knowledge in Oracle SQL and PLSQL programming, is a big plus.</p> <p>Exposure in Web Application and mobile application development / maintenance is a big plus.</p> <p>Exposure in database design is preferable.</p> <p>He should have excellent communication skill in written and spoken English. Communication skill in Bengali is nice to have.</p> <p>He should have excellent presentation skill.</p> <p>Domain knowledge in E-Learning Platform is a plus.</p>
<b>Non-Key Positions</b>		<b>Qualification and Experiences</b>
NK-1	Content Development Manager(2)	<p><b>Qualifications:</b> Bachelor's/Diploma degree in any discipline or relevant qualifications;</p> <p><b>Experience:</b> Working experience in the specified positions be preferred; Experience in 3-year Content Development Experience in operational support in relevant customized software application;</p> <p><b>Responsibilities:</b></p> <p>He will have minimum 3 years of experience as eLearning content development projects.</p>

  
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Sl.	Positions and Number	Qualifications & Experiences
		<p>Implement accepted project management methodologies in every stage of the course production: creating strategy, sourcing subject matter experts, developing content, evaluating end-user feedback, etc.</p> <p>Manage and deliver a lot of Online Course Development projects simultaneously; maintain detailed records of the progress of current projects</p> <p>Liaise closely with key stakeholders to ensure that projects are scoped and agreed; proactively manage projects and act as a central point of contact for directors, and production team members throughout the project lifecycle</p> <p>Ensure that appropriate documentation is produced and maintained for all projects including project overview, project plans, reports, meeting notes and project budget trackers</p> <p>Manage development activities in accordance with identified parameters (timescales, costs, quality tolerance, etc.). Ensure resource is planned in advance and resource planner is kept up to date; manage the resources accordingly</p> <p>Ensure the progress of all developments is transparent and reported to the relevant people. Effectively communicate and continually manage expectations of team members and stakeholders in a clear and timely fashion and hold regular briefing sessions with your team</p> <p>Implement industry wide regulations and international standards in relation to online course development</p> <p>Hire and manage freelance Content Specialists (i.e. Subject Matter Experts, Instructors, Mentors). Liaises with Content Specialists who develop content for learning and assessment</p> <p>Assists the team across all aspects of course creation (from content development to graphics design and production). Monitor course quality; ensure the goals for the courses are achieved, through evaluation at different levels</p> <p>Undertake other relevant duties that may be reasonably requested by the management</p>

  
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Sl.	Positions and Number	Qualifications & Experiences
NK-2	Quality Assurance Engineer [Software Tester] (1)	<p><b>Qualifications:</b> Bachelor's degree in Software engineering/Computer Science/EEE or relevant discipline; Certification in QA/Software Testing will preferred;</p> <p><b>Experiences:</b> Experience in testing and quality assurance of database driven web-based application software project; 2 years' experience in software testing using manual and automated tools; Experience in organizing and conducting training to different levels of government officials and/or staffs on database development, testing in fisheries sector will be preferred;</p> <p><b>Responsibilities:</b> Prepare test cases during the system analysis period and development phase; Conduct testing as per test cases;</p> <p>Perform black box testing/automated testing using latest recognized testing tools etc.;</p>
NK-3	Data Entry Operator (2)	<p><b>Qualifications:</b> HSC with Science or Bachelor's degree as appropriate.</p> <p><b>Experience:</b> Working experience in the specified positions will be preferred; Computer literacy on MS Word, Excel and skill in composing reports;</p> <p><b>Responsibilities:</b> Enter the all collected data, store and keep documentation and related jobs using computers; Provide assistance to team members for doing relevant activities as and when assigned etc.;</p>
NK-4	Support Staff(1);	<p><b>Qualifications:</b> Bachelor's/Diploma degree in any discipline or relevant qualifications;</p> <p><b>Experience:</b> Working experience in the specified positions be preferred; Experience in computer hardware and software related troubleshooting; Experience in operational support in relevant customized software application;</p> <p><b>Responsibilities:</b> Troubleshoot the web-based database application; Troubleshoot other possible computer related problems if required;</p>



Sl.	Positions and Number	Qualifications & Experiences
		Provide operational support to users during the contract period; Provide assistance to team members for doing relevant activities as and when assigned etc.;

### List of Key Experts

Sl No	Position	Number	Total Man-Month
1	Team Leader and IT Expert – Project Manager	1	8
2	Lead Systems Analyst	1	4
3	Web Application Architect	1	4
4	Database Administrator	1	4
5	Web-developer Back-end	3	4
6	Specialist System Support	1	4
7	Test Manager	1	4
8	Web-developer Front-end	3	5
9	User Experience Designer	1	4
10	Tester	1	18

### List of Non-Key Positions

Sl No	Position	Number	Total Man-Month
1	Content Development Manger	2	8
2	Quality Assurance Engineer [Software Tester] (1)	1	8
3	Data Entry Operator (2)	2	4
4	Support Staff(1);	1	4

  
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## **09. Minimum eligibility Criteria for EOI selection:**

- 1) Must have valid and up-to-date Trade license/Register of joint stock & companies (RJSC) registration, VAT, TIN certificate.
- 2) Should have minimum 5 (five) years experiences in ICT business as a registered company/entity in Bangladesh. (please provide the relevant contract paper).
- 3) Should have Experience in managing at least 3 (three) citizen centric applications in public sector. (Please provide work completion certificate to prove the experiences).
- 4) The Firm should have a minimum average annual turnover not less than Taka 1.5 (One Crore Fifty Lac) Crore for the last 3 (three) years.
- 5) The firm must have proof of minimum BDT 1.5 (One Crore Fifty Lac) Crore average working capital in reflected in the last 3 years audited financial statements.
- 6) ISO Certificate and BASIS Membership Certificate.
- 7) The minimum amount of Liquid asset/Credit line Certificate of the firm shall be 1,00,00,000 (One Crore) Taka.

## **10. Mode of Payment**

The mode of payment will be through account payee cheque or bank transfer in the name of the firm. The Project will deduct VAT, Income Tax at source and other tax (if any) as per Bangladesh Government rules.

## **11. Code of Conduct**

- (a) All the documents and information produced by or during the consultancy services will the sole property of the BFSA. No information or document is permitted to transfer or share or disseminate elsewhere without the permission of Authority.
- (b) The project shall have the copy right of all documents developed under this assignment.
- (c) The Contracted firm and outsourced agents must comply the work order conditions, special instructions regarding BFSA & Govt. service regulations as applicable.

## **12. Disclaimer:**

Strengthening the capacity of Bangladesh Food Safety Authority Project has the rights to accept or reject any or all EOI/proposals without assigning any reason what so ever

  
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