

HEXAWARE



Automated Question Builder Application

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1 Project Overview

Automated Question Builder Application is an AI-driven application designed to revolutionize the process of generating question banks for training and assessment purposes within Hexaware. By leveraging advanced artificial intelligence and machine learning technologies, Automated Question Builder Application aims to automate and optimize the creation of Multiple Choice Questions (MCQs), assessments, coding challenges, and case studies. The application will cater exclusively to Hexaware employees, enhancing the overall training experience and ensuring that learning materials are both relevant and challenging.

1.1 Objectives

- **Automate Question Generation:** Utilize AI to create diverse and relevant question banks for various technologies.
- **Customization and Flexibility:** Allow users to select topics, specify the number of questions, and set difficulty levels to tailor the question banks to their needs.
- **Curriculum Integration:** Enable users to upload curricula and generate question banks that align with the specified topics and subtopics.
- **Enhanced Training and Assessment:** Improve the quality and efficiency of training programs and assessments within Hexaware.
- **Secure and Controlled Access:** Ensure that the application is accessible only to Hexaware employees, maintaining confidentiality and data security.

1.2 Scope

The scope of Automated Question Builder Application encompasses the development of an AI-powered application tailored to automate the generation of question banks for Hexaware's internal training and assessment programs. The application will feature a sophisticated AI engine utilizing Natural Language Processing (NLP) and Machine Learning (ML) to parse uploaded curricula and generate relevant questions. Key functionalities include a user-friendly interface that allows trainers to upload curricula in CSV or Excel formats, select specific topics within various technologies, and specify the total number of questions along with their difficulty levels. The application will support the generation of question banks in both Excel and PDF formats, ensuring ease of use and accessibility. Additionally, the scope includes implementing role-based access control (RBAC) to restrict access to authorized users within Hexaware, along with real-time and email notification services to inform users of the status and completion of question bank generation.

1.3 Key Features

- **AI-Powered Question Generation:** Parse uploaded curricula to generate relevant questions. Categorize questions by difficulty and continuously improve question quality based on user feedback.
- **Upload Functionality:** Allow trainers to upload curricula with topics and subtopics in CSV or Excel formats.
- **Topic Mapping:** AI algorithms to map user-selected topics with the curriculum content.
- **Question Bank Customization:** Users can select specific topics within a technology for question generation. Specify the total number of questions to be generated. Set the number of questions for each difficulty level (easy, medium, hard).
- **Real-time Notifications:** Send email alerts for the status and completion of question bank generation.
- **User-Friendly Intuitive Design:** Easy-to-navigate interface for all user roles. Accessible on various devices (desktops, tablets, smartphones).

2 Stakeholders

In the Automated Question Builder Application project, stakeholders are individuals or groups with a vested interest in the development, implementation, and success of the application. Stakeholders can be categorized into primary and secondary groups based on their level of involvement and impact on the project.

2.1 Primary Stakeholders

These stakeholders have a direct influence on the project and are the primary users and beneficiaries of the Automated Question Builder Application application.

- **Trainers**
 - Role: Use the application to generate question banks for training purposes.
 - Responsibilities: Upload curriculum, select topics, specify question parameters, and download generated question banks.
- **Administrators**
 - Role: Manage and monitor the application.
 - Responsibilities: Oversee user roles and permissions, manage system settings, generate usage reports, and ensure the application runs smoothly.
- **Employees (End Users)**
 - Role: Utilize generated question banks for self-assessment and training.
 - Responsibilities: Request question banks, view, and download generated materials.

2.2 Secondary Stakeholders

These stakeholders provide support, resources, and oversight to ensure the successful deployment and operation of the Automated Question Builder Application application.

- **IT Support Team**
 - Role: Provide technical support and maintenance for the application.
 - Responsibilities: Troubleshoot issues, ensure system availability, and perform regular maintenance and updates.
- **Human Resources (HR)**
 - Role: Oversee employee training and development programs.
 - Responsibilities: Integrate the application's output into broader training strategies and track employee progress.

3 Users and Roles

Automated Question Builder Application caters to three primary user roles within Hexaware: Administrator, Trainer, and Employee. Each role has specific responsibilities and access permissions tailored to their needs within the application.

3.1 Administrator

- **Role Description:** Administrators oversee the overall management and functionality of Automated Question Builder Application. They ensure that the system operates smoothly, manage user roles, monitor usage, and generate reports.
- **Responsibilities:**
 - **User Management:** Add, remove, and update users. Assign roles and permissions.
 - **System Monitoring:** Monitor system performance, usage statistics, and security.
 - **Reporting:** Generate and review system usage reports and analytics.
 - **Issue Resolution:** Address any system-related issues or user concerns.
 - **Settings Management:** Configure and update system settings as required.
- **Access Permissions:**
 - **Full Access:** Administrators have access to all parts of the application, including user management, system settings, and report generation.
 - **User Data Access:** View and manage all user profiles and activity logs.
 - **System Configuration:** Modify system settings, update software, and manage integrations.
 - **Report Generation:** Access and generate comprehensive usage reports and analytics.

3.2 Trainer

- **Role Description:** Trainers are responsible for creating and managing question banks based on curricula. They use Automated Question Builder Application to generate customized question sets for training and assessment purposes.
- **Responsibilities:**
 - **Curriculum Upload:** Upload curricula in CSV or Excel formats, including topics and subtopics.
 - **Question Bank Generation:** Select technologies, topics, specify the number of questions, and set difficulty levels to generate question banks.
 - **Review and Edit:** Review generated question banks and make necessary adjustments.
 - **Download and Distribute:** Download question banks in Excel and PDF formats and distribute them to employees.
 - **Feedback Collection:** Gather feedback from users to improve question quality and relevance.
- **Access Permissions:**
 - **Curriculum Management:** Upload and manage curricula.
 - **Question Bank Creation:** Access the question bank generation tool, select topics, and specify parameters for question generation.
 - **Document Download:** Download generated question banks in various formats.
 - **Feedback Review:** Access feedback and make necessary adjustments to question banks.

3.3 Employee

- **Role Description:** Employees use Automated Question Builder Application to access and utilize question banks for self-assessment and training purposes. They can request specific question sets based on their learning needs.
- **Responsibilities:**
 - **Self-Assessment:** Use generated question banks for self-assessment and practice.
 - **Feedback Submission:** Provide feedback on the quality and relevance of questions for continuous improvement.
 - **Learning and Development:** Utilize question banks to enhance their skills and knowledge in specific technologies.
 - **Learning Plan for Technical Upskill:** Employees can request personalized learning plans to further develop their technical skills
- **Access Permissions:**
 - Document Access: View and download generated question banks for self-assessment.
 - Feedback Submission: Submit feedback on the generated questions to help improve the system.

4 Process Flow

The Automated Question Builder Application involves multiple process flows for different user roles, including administrators, trainers, and employees. Each process flow is designed to ensure a seamless and efficient learning and assessment experience, leveraging AI to enhance matching and user convenience.

4.1 Administrator Process Flow

- **Login**
 - The Administrator begins their session by logging into Automated Question Builder Application with their credentials. This step ensures secure access to the administrative functions of the application.
- **Manage Users**
 - Once logged in, the Administrator accesses the user management module. Here, they can:
 - **Add New Users:** Input new user details, assign appropriate roles, and grant access permissions.
 - **Remove Users:** Select users to be removed from the system, which updates the user database accordingly.
 - **Update User Roles:** Modify existing user roles and permissions to ensure users have the correct access levels.
- **Monitor System Performance**
 - The Administrator uses the system monitoring tools to:
 - **View Performance Metrics:** Check the overall system performance, including server status and usage statistics.
 - **Review Activity Logs:** Analyze user activity and system logs to identify any unusual behavior or issues.
- **Generate Reports**
 - Administrators generate various reports to assess system usage and performance. This includes:
 - **Selecting Report Types:** Choose from options such as usage statistics, question bank generation summaries, and system health reports.
 - **Exporting Reports:** Download these reports in formats such as Excel or PDF for further analysis and distribution.
- **Issue Resolution**
 - When issues arise, Administrators:
 - **Investigate Problems:** Review reported issues, error messages, and user feedback.
 - **Implement Fixes:** Resolve issues directly or escalate them to technical support if necessary.
- **Logout**
 - At the end of their session, the Administrator logs out to ensure that their session is securely terminated.

4.2 Trainer Process Flow

- **Login**
 - The Trainer logs into Automated Question Builder Application, gaining access to the functionalities needed for managing and generating question banks.
- **Upload Curriculum**
 - The Trainer uploads curriculum files to integrate them into the system:
 - **Select Technology:** Choose the technology relevant to the training (e.g., .NET, Java, Python).
 - **Upload Files:** Upload CSV or Excel files containing the curriculum details, including topics and subtopics.
- **Generate Question Bank**
 - The Trainer then generates a question bank:
 - **Select Technology and Topics:** Choose the technology and specific topics for which questions are to be generated.
 - **Specify Parameters:** Define the number of questions, difficulty levels (easy, medium, hard), and request the generation of the question bank.
- **Review and Edit Question Bank**
 - Once the question bank is generated, the Trainer:
 - **Review Content:** Check the questions for accuracy and relevance.
 - **Edit Questions:** Make any necessary adjustments or request additional questions if needed.
- **Download Question Bank**
 - The Trainer downloads the finalized question bank:
 - **Select Format:** Choose between Excel or PDF formats.
 - **Download:** Save the document to local storage for further use or distribution.
- **Logout**
 - The Trainer logs out of Automated Question Builder Application, ending their session securely.

4.3 Employee Process Flow

- **Login**
 - Employees start by logging into Automated Question Builder Application using their credentials to gain access to the application's features and functionalities for self-assessment and learning.
- **Self-Assessment**
 - Employees use the application to perform self-assessments:
 - **Complete Assessment:** Once the question bank is generated, complete the self-assessment using the provided questions.
 - **Download:** Download completion certificate in PDF format.
- **Feedback Submission**
 - Employees provide feedback on the question bank to help improve its quality and relevance:
 - **Complete Feedback Form:** Access the feedback section and enter comments and suggestions about the questions.
 - **Submit Feedback:** Send the feedback to the system for review and future enhancements.

- **Learning and Development**
 - Employees use Automated Question Builder Application to enhance their skills and knowledge through structured learning plans:
 - **Access Learning Materials:** View and utilize the generated question banks and other available learning resources.
 - **Track Progress:** Monitor personal progress and performance using the provided tools and reports.
- **Request Learning Plan for Technical Upskill**
 - Employees can request personalized learning plans to further develop their technical skills:
 - **Navigate to Learning Plan Request Section:** Go to the learning plan section of the application.
 - **Submit Request:** Fill out a request form detailing the desired technology, specific areas of improvement, and learning goals.
 - **Receive Customized Plan:** The application generates a tailored learning plan, which may include recommended question banks, study materials, and a timeline for completion.
- **Logout**
 - After completing their tasks, employees securely log out of Automated Question Builder Application to end their session.

5 UI Pages

Automated Question Builder Application's user interface is designed to provide a seamless and intuitive experience while performing their respective roles and responsibilities within the application. Each UI page is carefully crafted to ensure ease of use, accessibility, and functionality.

5.1 Administrator UI Pages

- **Login Page**
 - Description: Entry point for administrators to access the Automated Question Builder Application application.
 - Components: Username field, Password field, Login button, Forgot Password link.
- **Dashboard**
 - Description: Overview of system statistics and quick access to main functionalities.
 - Components: System performance metrics, Usage statistics, Notifications, Quick links to User Management, Reports, and Settings.
- **User Management Page**
 - Description: Manage user accounts and roles.
 - Components: User list, Add User button, Edit User button, Delete User button, Role assignment dropdowns, Search and Filter options.
- **System Monitoring Page**
 - Description: Monitor the system's performance and user activities.
 - Components: Real-time performance metrics, Server status, Error logs, User activity logs, Alerts and notifications.
- **Report Generation Page**
 - Description: Generate and download various system reports.
 - Components: Report type selection dropdown, Date range selection, Generate Report button, Export options (Excel, PDF).
- **Settings Page**
 - Description: Configure system settings and preferences.
 - Components: Configuration options, Save Changes button, Reset to Default button.
- **Issue Resolution Page**
 - Description: View and address reported issues.
 - Components: Issue list, Issue details, Resolution status, Assign to Support button, Comment section.
- **Logout Page**
 - Description: Securely log out from the application.
 - Components: Confirmation message, Logout button.

5.2 Trainer UI Pages

- **Login Page**
 - Description: Entry point for trainers to access Automated Question Builder Application.
 - Components: Username field, Password field, Login button, Forgot Password link.
- **Dashboard**
 - Description: Overview of trainer-specific functionalities and quick access.
 - Components: Quick links to Upload Curriculum, Generate Question Bank, Review Question Bank, Download Question Bank, Notifications.
- **Upload Curriculum Page**
 - Description: Upload curriculum files for question bank generation.
 - Components: Technology selection dropdown, File upload button (CSV, Excel), Upload status indicator, Submit button.
- **Generate Question Bank Page**
 - Description: Specify parameters for generating a question bank.
 - Components: Technology selection dropdown, Topic selection list, Number of questions input, Difficulty level sliders, Generate button.
- **Review and Edit Question Bank Page**
 - Description: Review and modify the generated question bank.
 - Components: Generated question list, Edit question button, Add question button, Delete question button, Save changes button.
- **Download Question Bank Page**
 - Description: Download the finalized question bank.
 - Components: Generated question bank list, Format selection dropdown (Excel, PDF), Download button.
- **Feedback Page**
 - Description: Provide feedback on the generated questions.
 - Components: Feedback form, Submit button.
- **Logout Page**
 - Description: Securely log out from the application.
 - Components: Confirmation message, Logout button.

5.3 Employee UI Pages

- **Login Page**
 - Description: Entry point for employees to access Automated Question Builder Application.
 - Components: Username field, Password field, Login button, Forgot Password link.
- **Dashboard**
 - Description: Overview of employee-specific functionalities and quick access.
 - Components: Quick links to Request Question Bank, Self-Assessment, Submit Feedback, Learning and Development, Request Learning Plan, Notifications.
- **Request Question Bank Page**
 - Description: Request a customized question bank for self-assessment.
 - Components: Technology selection dropdown.
- **Self-Assessment Page**
 - Description: Access and complete self-assessment using generated question banks.
 - Components: List of requested question banks, Download button (Excel, PDF), Assessment completion status.
- **Submit Feedback Page**
 - Description: Provide feedback on the generated question banks.
 - Components: Feedback form, Submit button.
- **Learning and Development Page**
 - Description: Access learning materials and track progress.
 - Components: List of learning resources, Progress tracker, Access button for each resource.
- **Request Learning Plan Page**
 - Description: Request a personalized learning plan for technical upskilling.
 - Components: Learning plan request form, Technology selection dropdown, Areas of improvement input, Learning goals input, Submit button.
- **Feedback Submission Page**
 - Description: Provide feedback on the learning materials and question banks.
 - Components: Feedback form, Submit button.
- **Logout Page**
 - Description: Securely log out from the application.
 - Components: Confirmation message, Logout button.

6 AI-Powered Features and Algorithms

AI-powered features and algorithms ensure that Automated Question Builder Application provides a robust, intelligent, and user-centric platform for generating and managing question banks, ultimately enhancing the learning and development process for all users.

6.1 Question Bank Generation

- **Input Collection**
 - User Inputs: Selected technology, topics, number of questions, difficulty levels.
 - Existing Data: Curriculum topics and subtopics, historical question banks, difficulty ratings, question metadata.
- **Preprocessing**
 - Data Cleaning: Remove duplicates, correct errors in the curriculum and existing question banks.
 - Normalization: Standardize formats for topics, difficulty levels, and question metadata.
 - Tokenization: Break down text into tokens for processing.
- **Similarity Calculation**
 - TF- Similarity: Measure similarity between topic vectors and existing questions to identify relevant questions.
- **AI-enhanced Matching**
 - Natural Language Processing (NLP): Use NLP models to understand the context and content of the questions and match them with the selected topics.
 - Machine Learning Models: Train models on historical data to predict the difficulty level and relevance of questions.
- **Output**
 - Question Bank: Generate a question bank with the requested number of questions, distributed across the specified difficulty levels and topics.
- **Notification**
 - Completion Alert: Notify the user via email or in-app notification when the question bank is ready for download.
 - Summary Report: Provide a summary report detailing the number of questions generated per topic and difficulty level.

6.2 Personalized Learning Plan Generation

- **Input Collection**
 - User Inputs: Selected technology, areas of improvement, learning goals.
 - Existing Data: Employee performance data, past learning activities, available learning resources.
- **Preprocessing**
 - Data Cleaning: Remove inconsistencies in performance data and learning resources.
 - Feature Extraction: Identify key features such as employee skill level, resource difficulty, and learning progress.
- **Similarity Calculation**
 - Collaborative Filtering: Identify similar learning paths and resources used by other employees with similar profiles.
 - Content-based Filtering: Match learning resources to the specific topics and areas of improvement indicated by the user.
- **AI-enhanced Matching**
 - Recommendation Systems: Use collaborative and content-based filtering techniques to recommend the most relevant learning resources and activities.
 - Machine Learning Models: Predict the effectiveness of learning plans based on historical performance and feedback data.
- **Output**
 - Personalized Learning Plan: Generate a tailored learning plan that includes recommended question banks, study materials, and a timeline for completion.
- **Notification**
 - Plan Availability: Notify the user via email or in-app notification when the personalized learning plan is ready.
 - Progress Reminders: Send periodic reminders and updates about the progress and next steps in the learning plan.

6.3 Feedback Analysis and Improvement

- **Input Collection**
 - User Inputs: Feedback comments and ratings on question banks and learning materials.
 - Existing Data: Historical feedback, question performance data, and improvement suggestions.
- **Preprocessing**
 - Sentiment Analysis: Analyze the sentiment of feedback comments to classify them as positive, negative, or neutral.
 - Text Analysis: Extract key phrases and terms from feedback comments for further analysis.
- **Similarity Calculation**
 - Clustering: Group similar feedback comments to identify common themes and issues.
 - Topic Modeling: Use algorithms like LDA (Latent Dirichlet Allocation) to identify prevalent topics in the feedback.

- **AI-enhanced Matching**
 - Natural Language Processing (NLP): Use NLP techniques to match feedback themes with specific questions or learning materials.
 - Predictive Analysis: Predict the impact of suggested improvements based on historical feedback and performance data.
- **Output**
 - Feedback Reports: Generate detailed reports highlighting common issues, suggestions, and areas for improvement.
 - Improvement Suggestions: Provide actionable suggestions to improve the quality and relevance of question banks and learning materials.
- **Notification**
 - Feedback Summary: Notify the trainers and administrators via email or in-app notification when new feedback analysis reports are available.
 - Improvement Alerts: Send alerts about critical issues or highly impactful improvement suggestions.

6.4 Automated Curriculum Mapping

- **Input Collection**
 - User Inputs: Uploaded curriculum file (CSV or Excel) with topics and subtopics.
 - Existing Data: Database of historical curricula, question banks, and topic metadata.
- **Preprocessing**
 - Data Parsing: Extract topics and subtopics from the uploaded curriculum file.
 - Data Standardization: Standardize the format and structure of the curriculum data.
- **Similarity Calculation**
 - TF-IDF (Term Frequency-Inverse Document Frequency): Calculate the relevance of curriculum terms in relation to existing question banks.
 - Cosine Similarity: Measure the similarity between the uploaded curriculum and historical data to identify relevant questions.
- **AI-enhanced Matching**
 - Natural Language Processing (NLP): Use NLP models to understand the context and map curriculum topics to relevant questions in the database.
 - Machine Learning Models: Predict the best matches for curriculum topics based on historical mapping data.
- **Output**
 - Mapped Curriculum: Generate a mapped curriculum that aligns topics and subtopics with relevant questions and resources.
- **Notification**
 - Mapping Completion: Notify the trainer via email or in-app notification when the curriculum mapping is complete.
 - Mapping Summary: Provide a summary report of the mapped curriculum and the associated questions.

6.5 Advanced Question Generation

- **Input Collection**
 - User Inputs: Detailed question parameters (topics, difficulty levels, number of questions).
 - Existing Data: Repository of existing questions, question templates, and difficulty ratings.
- **Preprocessing**
 - Data Cleaning: Ensure the quality and relevance of existing questions and templates.
 - Template Extraction: Identify and standardize question templates.
- **Similarity Calculation**
 - Semantic Analysis: Analyze the semantic meaning of topics and existing questions to generate new, relevant questions.
 - Pattern Recognition: Identify patterns in question formats and difficulty distributions.
- **AI-enhanced Matching**
 - Generative AI Models: Use models like GPT to generate new questions based on the provided parameters and historical data.
 - Quality Assurance Models: Use machine learning to evaluate and ensure the quality and relevance of generated questions.
- **Output**
 - New Questions: Generate a set of new questions that meet the specified parameters.
 - Quality Report: Provide a report on the quality and difficulty distribution of the new questions.
- **Notification**
 - Generation Completion: Notify the trainer via email or in-app notification when new questions are generated.
 - Quality Assurance: Send a quality report along with the new questions.

7 Notification Services

Notification services ensure that users are kept informed about important events, updates, and their own progress within Automated Question Builder Application, enhancing their experience and engagement with the application. Notifications are categorized based on their purpose, delivery channels, and the users they target (administrators, trainers, and employees).

7.1 Question Bank Generation Completion Notification

- **Process Flow:**
 - **Trigger Event:** The question bank generation process completes.
 - **Notification Creation:** The system generates a notification message containing details of the completed question bank (number of questions, topics, difficulty levels).
 - **User Identification:** Identify the user who requested the question bank.
 - **Delivery:**
 - **Email:** Send an email to the user's registered email address with the notification message and a link to download the question bank.
 - **In-app Notification:** Display an in-app notification in the user's dashboard with the same details and download link.

7.2 Personalized Learning Plan Availability Notification

- **Process Flow:**
 - **Trigger Event:** A personalized learning plan is generated for the user.
 - **Notification Creation:** The system generates a notification message summarizing the learning plan (technology, areas of improvement, timeline).
 - **User Identification:** Identify the user who requested the learning plan.
 - **Delivery:**
 - **Email:** Send an email to the user's registered email address with the notification message and a link to access the learning plan.
 - **In-app Notification:** Display an in-app notification in the user's dashboard with the same details and access link.

7.3 Feedback Submission Acknowledgment

- **Process Flow:**
 - **Trigger Event:** A user submits feedback on a question bank or learning material.
 - **Notification Creation:** The system generates an acknowledgment message thanking the user for their feedback.
 - **User Identification:** Identify the user who submitted the feedback.
 - **Delivery:**
 - **Email:** Send an email to the user's registered email address with the acknowledgment message.
 - **In-app Notification:** Display an in-app notification thanking the user for their feedback.

7.4 Periodic Progress Reminders for Learning Plan

- **Process Flow:**
 - **Trigger Event:** A periodic timer (e.g., weekly) triggers a check of the user's progress on their learning plan.
 - **Progress Assessment:** The system assesses the user's progress against their personalized learning plan timeline.
 - **Notification Creation:** Generate a reminder message with details about the user's current progress and upcoming tasks or goals.
 - **User Identification:** Identify the user assigned to the learning plan.
 - **Delivery:**
 - **Email:** Send an email to the user's registered email address with the progress reminder message.
 - **In-app Notification:** Display an in-app notification in the user's dashboard with the progress details and reminders.

7.5 Issue Resolution Update Notification

- **Process Flow:**
 - **Trigger Event:** An issue reported by a user is resolved.
 - **Notification Creation:** The system generates a notification message detailing the issue resolution (issue description, resolution steps).
 - **User Identification:** Identify the user who reported the issue.
 - **Delivery:**
 - **Email:** Send an email to the user's registered email address with the issue resolution message.
 - **In-app Notification:** Display an in-app notification informing the user about the resolution of their reported issue.

7.6 New Learning Resource Availability Notification

- **Process Flow:**
 - **Trigger Event:** New learning resources or question banks are added to the system.
 - **Notification Creation:** The system generates a notification message summarizing the new resources (title, description, relevance).
 - **User Identification:** Identify users who have shown interest in or are subscribed to the relevant topics.
 - **Delivery:**
 - **Email:** Send an email to these users with the notification message and a link to access the new resources.
 - **In-app Notification:** Display an in-app notification in the users' dashboards with the same details and access link.

8 Document Generation

Automated Question Builder Application includes various document generation features to support different aspects of all the processes. These documents provide detailed information for users, enhance transparency, and facilitate administrative tasks. These documents ensure that all relevant data and processes within Automated Question Builder Application are well-documented, easily accessible, and structured for efficient use by different users.

8.1 Question Bank Document

Purpose:

- To provide a comprehensive set of questions for assessments, categorized by topics and difficulty levels.

Components:

- Title and Introduction, Technology and Topics covered, Number of Questions per Topic, Difficulty Level Breakdown (Easy, Medium, Hard), List of Questions with Answers and Explanations

Process Flow:

- **User Request:** Employee or Trainer requests the generation of a question bank.
- **Question Generation:** System generates the question bank based on specified parameters.
- **Document Creation:** System compiles the questions into a structured document.
- **Review and Approval:** Trainer reviews and approves the question bank.
- **Notification and Access:** User is notified, and the document is made available for download.

Trigger Event:

- Completion of question bank generation.

Users with Access:

- Administrators, Trainers, Employees

Format:

- Excel, PDF

8.2 Personalized Learning Plan Document

Purpose:

- To provide a tailored learning plan for employees based on their learning goals and areas of improvement.

Components:

- Employee Details, Learning Goals, Areas of Improvement, Recommended Learning Resources, Timeline and Milestones, Progress Tracking

Process Flow:

- **User Request:** Employee requests a personalized learning plan.
- **Plan Generation:** System generates the learning plan based on user inputs and historical data.
- **Document Creation:** System compiles the learning plan into a structured document.
- **Notification and Access:** User is notified, and the document is made available for download.

Trigger Event:

- Completion of personalized learning plan generation.

Users with Access:

- Administrators, Trainers, Employees

Format:

- DOCX, PDF

8.3 Feedback Report

Purpose:

- To summarize user feedback on question banks and learning materials for continuous improvement.

Components:

- Feedback Summary, Sentiment Analysis, Common Themes and Issues, Suggested Improvements, Action Items

Process Flow:

- **Feedback Submission:** Users submit feedback on question banks or learning materials.
- **Analysis:** System analyzes the feedback using NLP and sentiment analysis.
- **Report Generation:** System compiles the analysis into a structured report.
- **Notification and Access:** Trainers and Administrators are notified, and the report is made available for review.

Trigger Event:

- Submission of user feedback.

Users with Access:

- Administrators, Trainers

Format:

- PDF, DOCX

8.4 Curriculum Mapping Document

Purpose:

- To align curriculum topics and subtopics with relevant questions and resources.

Components:

- Curriculum Overview, Mapped Topics and Subtopics, Associated Questions, Learning Resources, Gaps and Recommendations

Process Flow:

- **Curriculum Upload:** Trainer uploads a curriculum file.
- **Mapping:** System maps the curriculum topics to existing questions and resources.
- **Document Creation:** System compiles the mapped curriculum into a structured document.
- **Review and Approval:** Trainer reviews and approves the mapping.
- **Notification and Access:** Trainer is notified, and the document is made available for review and download.

Trigger Event:

- Completion of curriculum mapping.

Users with Access:

- Administrators, Trainers

Format:

- Excel, PDF

8.5 Issue Resolution Report

Purpose:

- To document the resolution of reported issues.

Components:

- Issue Description, Reported By and Date, Resolution Steps, Status, Comments and Follow-ups

Process Flow:

- **Issue Reporting:** User reports an issue.
- **Resolution:** Support team resolves the issue.
- **Report Generation:** System or support team compiles the resolution steps into a structured report.
- **Notification and Access:** User and relevant stakeholders are notified, and the report is made available for review.

Trigger Event:

- Resolution of an issue.

Users with Access:

- Administrators, Reporting User

Format:

- PDF, DOCX

8.6 Assessment Completion Report

Purpose:

- To provide a detailed summary of the assessments taken by employees, including their performance and areas for improvement.

Components:

- Assessment Overview (Title, Date, Duration), Employee Details (Name, ID, Department)
- Assessment Results (Scores, Percentages), Question Analysis (Correct/Incorrect Responses, Difficulty Levels)
- Performance Metrics (Overall Score, Topic-wise Performance), Recommendations for Improvement

Process Flow:

1. **Assessment Completion:** Employee completes the assessment.
2. **Data Collection:** System collects data on the assessment results, question responses, and feedback.
3. **Analysis:** System analyzes the performance metrics and feedback.
4. **Report Generation:** System compiles the assessment details, results, and analysis into a structured report.
5. **Review and Approval:** Trainer reviews and approves the report.
6. **Notification and Access:** Employee and relevant stakeholders (Trainer, Administrator) are notified, and the report is made available for download and review.

Trigger Event:

- Completion of an assessment by an employee.

Users with Access:

- Administrators, Trainers, Employees

Format:

- PDF, DOCX

About Hexaware

Hexaware is a global technology and business process services company. Our 28,400 Hexawarians wake up every day with a singular purpose; to create smiles through great people and technology. With this purpose gaining momentum, we are well on our way to realizing our vision of being the most loved digital transformation partner in the world. We also seek to protect the planet and build a better tomorrow for our customers, employees, partners, investors, and the communities in which we operate.

With 45+ offices in 19 countries, we empower enterprises worldwide to realize digital transformation at scale and speed by partnering with them to build, transform, run, and optimize their technology and business processes.

Learn more about Hexaware at www.hexaware.com