Deliverable #1 Technical Report

I.   *System Vision Document*

Problem Description:

As the demand for online easily accessible educational platforms increases, several existing systems and platforms cannot provide flexible and manageable course-providing platforms that serve every learner needs. Most of these platforms offer low-quality courses, non-comprehensive courses in which learners struggle to earn a certificate prior to taking the course. On the other hand, instructors face challenges in creating, scheduling, and keeping up with the learners in a professional manner.

It is essential to provide a system that would ease the learning process for students and guarantee their certifications earning process in a flexible manner.

System Capabilities:

- Course Management: Easy course creation and scheduling of courses by instructors including adding multimedia resources, set prerequisites of courses, and define objectives of each course.
- Learner Enrollment: Learners enroll in courses at their own pace and at their flexible times.
- Progress Tracking: Learners can track their progress in each course as they perform in quizzes and different assessments.
- Certification guarantee: learners guarantee earning respectable digital certifications after finishing their assigned courses enabling learners to share their achievements in professional platforms.

Business Benefits:

- Increased Accessibility due to the flexible nature of the online learning platform.
- Cost Efficiency: it reduces the cost of physical resources and materials.
- Scalability: supports growth and expansion plans.
- Increased Global reach
- Competitive Advantage: the innovative features set this platform apart from others

II. *Stakeholders Identification Table.*

Stakeholder Type	Stakeholder	Role
Internal/Operational	Administrator	Oversee platform operation and user management.
	IT Team	Develop and maintain the technical part of the system.
	Customer Service	Handle user inquiries and issues.
External	Learner (User)	Enroll in courses and earn certifications.
	Instructor(User)	Create and Manage courses.
Internal/ Executives	Board of Directors	Set overall strategy of EduCertify
	Senior Managers	Oversee operational performance and manage the teams.
External/ Executives	Investors	Funding and strategic direction of the system.

III.   *User Stories*

User Story:

As a customer service representative, I want to respond to user inquiries so that users receive timely and accurate assistance with their issues.

Acceptance Criteria:

- The customer service representative can access a list of user inquiries with clear descriptions.
- Responses are sent to users within a maximum response time of 24 hours.
- User inquiries are categorized for easier response prioritization.
- Customer service representatives have access to a knowledge base to resolve common issues.

User Story:

As a customer service representative, I want to resolve technical issues so that users can continue their activities on the platform without any disruptions.

Acceptance Criteria:

- Technical issues are reported to the customer service team with details like timestamps and affected modules.
- Resolutions for common technical issues are available within the knowledge base.
- Escalation protocols exist for issues beyond customer service control, leading to the IT team.
- Users receive updates on the status of their technical issues within 24 hours.

User Story:

As an investor, I want to view platform performance reports so that I can evaluate the platform's growth and user engagement.

Acceptance Criteria:

- The investor has access to a quarterly performance report, detailing metrics such as user enrollment, course completion rates, and active user engagement.
- Financial metrics like revenue growth, costs, and profit margins are included in the report.
- A section on platform improvements and future development plans is available.
- Reports are downloadable in a format (PDF or Excel) that allows for easy review.

User Story:

As an investor, I want to review financial performance reports so that I can assess the platform's profitability and financial stability.

Acceptance Criteria:

- Financial reports are provided quarterly, containing detailed revenue, expenses, and net income statements.
- Metrics include user acquisition costs, average revenue per user, and ROI.
- A summary of major expenditures and investments made into the platform's development is available.
- Reports include comparative data from previous quarters to show trends.

User Story:

As a Board Member, I want to review the system's overall performance quarterly so that I can assess the platform's growth and effectiveness.

Acceptance Criteria:

- The system generates a comprehensive performance report.
- A report includes user engagement metrics, course completion rates details
- A report is available in a format suitable for presentations.

User Story:

As a Board Member, I want to access detailed metrics on user growth and course popularity so that I can identify key areas of growth and make strategic decisions.

Acceptance Criteria:

- The system provides access to user growth data, including monthly active users.
- A report that shows the popularity of courses based on enrollment numbers.
- Data is accessible on-demand or as a scheduled report.

User Story:

As a Senior Manager, I want to monitor operational performance metrics so that I can ensure the platform operates efficiently and meets user expectations.

Acceptance Criteria:

- The system provides access to operational metrics like server uptime and average response times.
- The report includes data on technical issues resolved and user inquiries.
- Metrics are updated in real-time or through weekly/ quarterly summaries.
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User Story:

As a learner, I want to enroll in a course so that I can start learning new material and improve my knowledge.

Acceptance Criteria:

- The learner can view available courses.
- The system allows the learner to select and enroll in any course.
- Enrollment confirmation is displayed after successful registration.

User Story:

As a learner, I want to search for specific courses so that I can find topics that match my interests or requirements.

Acceptance Criteria:

- The learner can access a search bar on the platform.
- The system provides search results relevant to the entered keywords.
- The learner can view detailed descriptions of courses from the search results.

User Story:

As a learner, I want to receive a certificate after completing a course so that I have a record of my accomplishment.

Acceptance Criteria:

- The learner is notified upon completing all course requirements.
- The system automatically generates a digital certificate.
- The learner can download the certificate from their profile.

User Story:

As an instructor, I want to create new courses so that I can share my knowledge and offer structured learning experiences.

Acceptance Criteria:

- The instructor can access a course creation interface.
- The system supports adding multimedia content, prerequisites, and course structure.
- The instructor receives a confirmation once the course is published.

User Story:

As an instructor, I want to upload and manage course materials so that learners have access to the necessary resources.

Acceptance Criteria:

- The instructor can add documents, videos, and other resources to the course.
- The system allows the instructor to organize materials by module or topic.
- The instructor receives a notification if an upload fails or is successful.

User Story:

As an instructor, I want to grade assignments and provide feedback so that learners understand their progress and areas for improvement.

Acceptance Criteria:

- The instructor can view submitted assignments from learners.
- The system allows the instructor to input grades and add written feedback.
- Learners are notified when grades and feedback are available.

User Story:

As an IT administrator, I want to perform regular system maintenance and manage updates efficiently, so that the platform remains secure, stable, and performs optimally for all users.

Acceptance Criteria:

- Initiate maintenance tasks. The system allows the IT team to create and assign roles (Admin, Instructor, Student, etc.).
- Maintenance activities should be logged automatically, including details such as the type of task, timestamp, and administrator's name. The system provides a list of all users and their current roles.
- Notifications should be sent before starting major maintenance, with information on potential downtime and affected services.
- A rollback mechanism should be available to revert updates in case of failure.
- The system should provide a report summarizing maintenance activities and performance metrics before and after maintenance.

User Story:

As Administrator I want to manage the course to create, update, and delete courses so that I can manage the catalogue and ensure the course satisfy the student and instructor's needs

Acceptance Criteria:

- Navigate through courses from dashboard.
- Create new courses and design the course details like (title, description , prerequisites, instructor, and modules).
- Update course details like adding students.
- Delete courses if they have no enrolled students or cancelled.
- Verify certification and check if students completed the course.
- Assign and reassign instructors.
- Display confirmation prompt before creating/ deleting a course

User Story:

As an administrator I want to efficiently manage user accounts so that I can ensure the system remains secure, organized, and operational for all users.

Acceptance Criteria:

- I can view a list of all registered user accounts, including students, instructors, and other administrators and sort user accounts based on roles, registration dates, activity status, or other criteria.
- I can update user information, such as name, email, and role and reset a user's password or send a password reset link to their email
- I can change a user's role (e.g., from student to instructor or promote to administrator) and assign permissions based on a user's role.
- I can temporarily deactivate or permanently delete user accounts and reactivate accounts
- I can view a lot of user activities, such as course enrollments, course completions, and login history and receive alerts or notifications about suspicious or unusual activity then alert the user.

IV. _Event Decomposition Identification Table_

External Events:

Event	Actor	Use Case
Learner enrolls in a course	Learner	Enroll in Course
Instructor creates a new course	Instructor	Create Course
Instructor uploads course materials	Instructor	Upload Course Materials
Learner completes a course and requests certificate	Learner	Issue Certificate
Learner views available courses	Learner	View Available Courses
Learner searches for specific courses	Learner	Search Courses
Learner submits assignment	Learner	Submit Assignment
Instructor reviews and grades an assignment	Instructor	Grade Assignment
Learner requests technical support	Learner	Request Technical Support
Administrator adds a new course to the catalog	Administrator	Update Course Catalog
Customer Service responds to user inquiries	Customer Service	Respond to User Inquiries
Administrator manages user accounts	Administrator	Manage User Accounts
Investor requests platform performance report	Investor	View Platform Performance

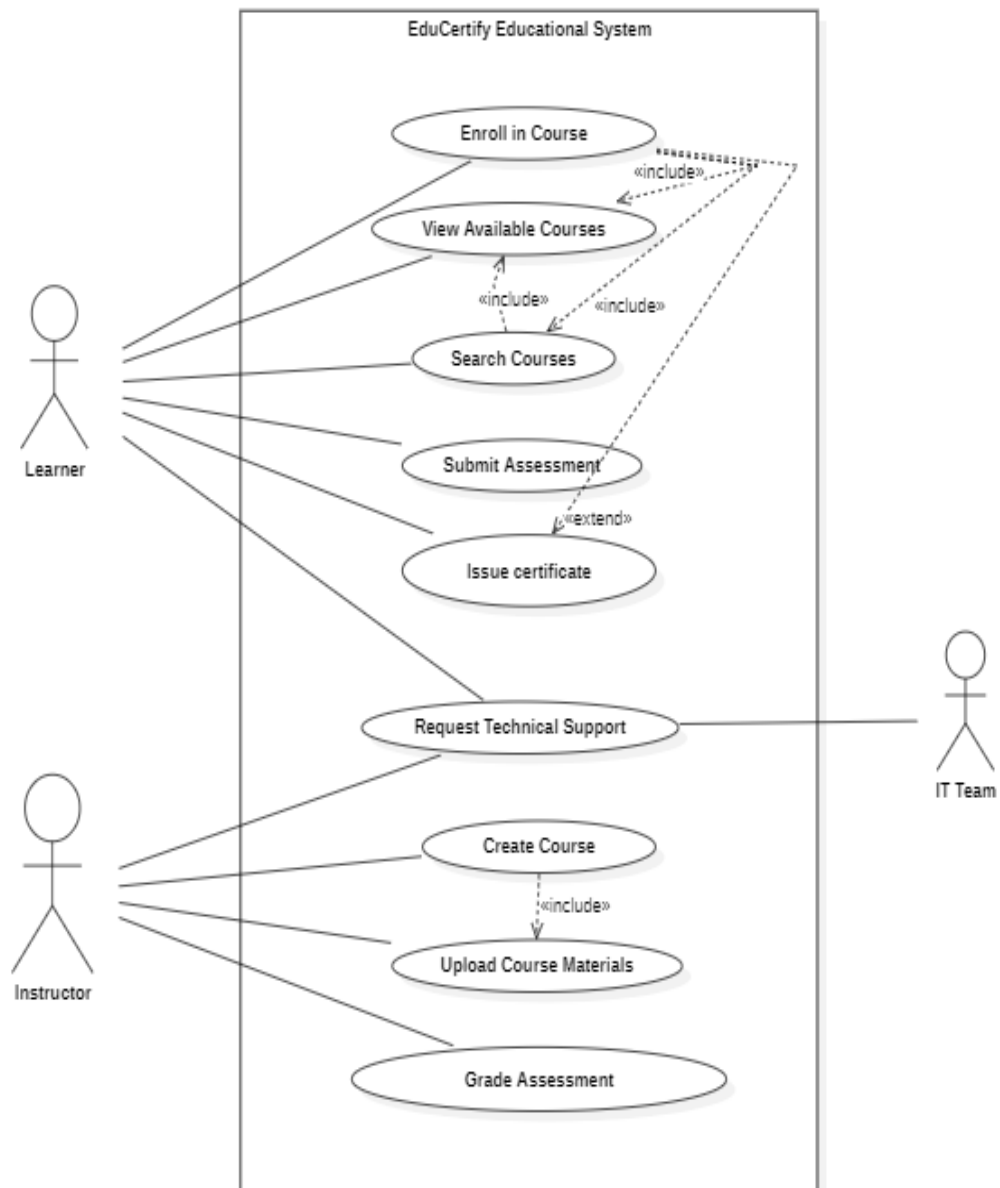| Event	Triggering Point	Actor	Use Case
Notification for scheduled course session	Time before session starts	System	Notify Learners of Scheduled Session
Deadline for final assessments	Assessments submission deadline	System	Submit Final Assessments
IT team performs system maintenance	Quarterly maintenance time	IT Team	Perform System Maintenance
Board of Directors reviews system performance	Quarterly review period	Board of Directors	Review System Performance
Senior Managers review financial performance	Quarterly review period	Senior Managers	Review Financial Performance
Progress reports for instructors	Weekly generated	System	Generate Progress Report

State Events:

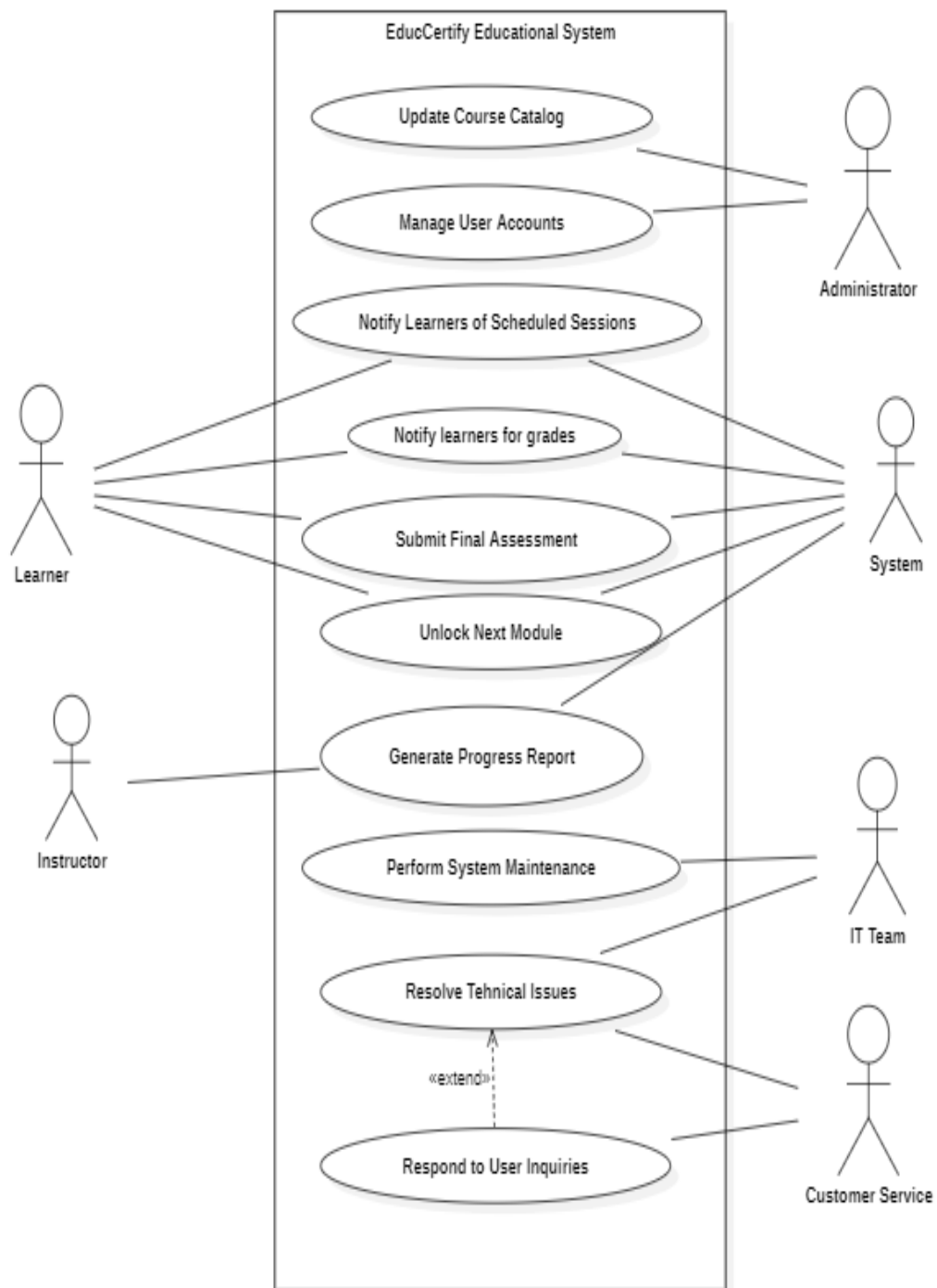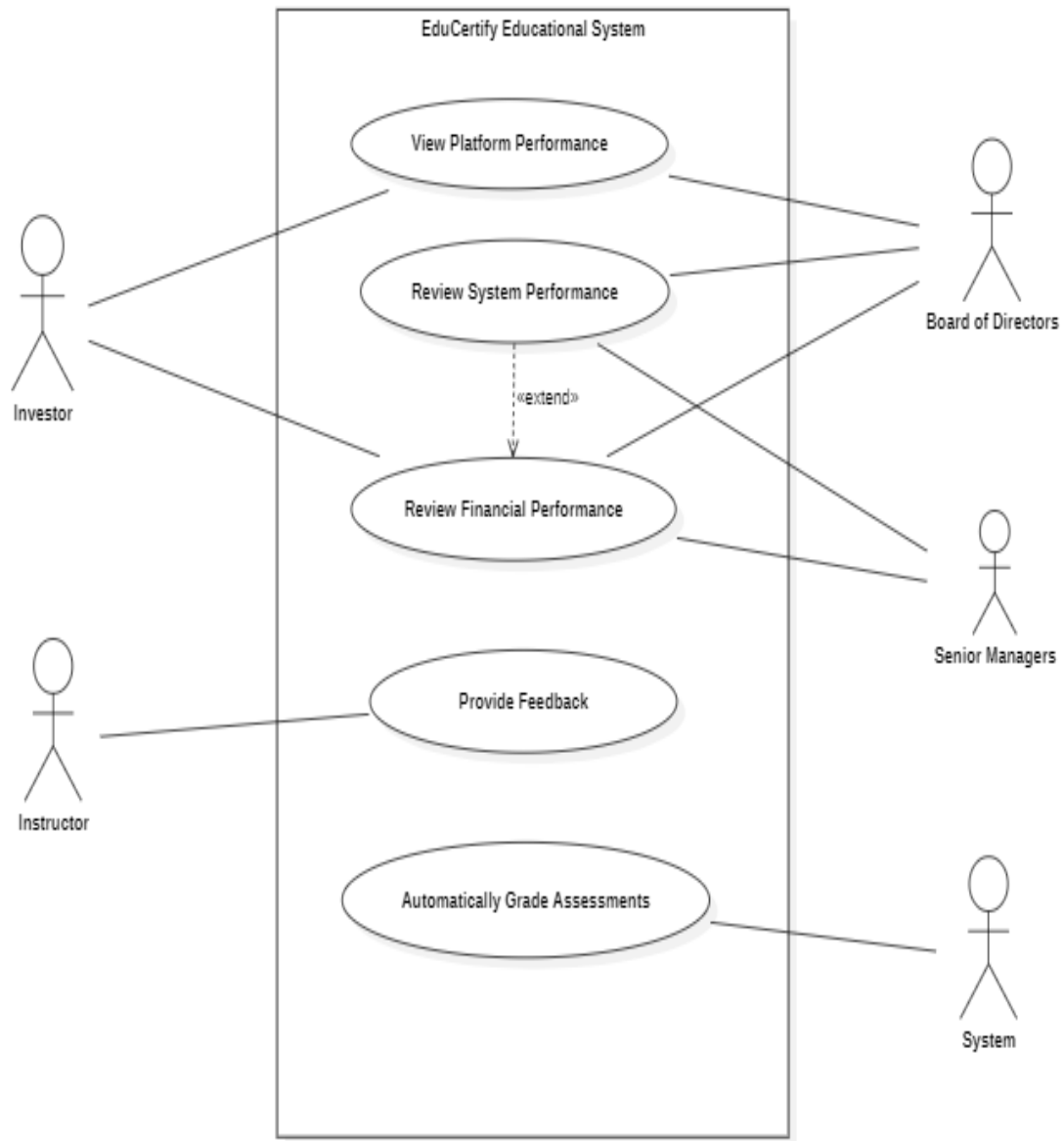| Event	Actor	Use Case
Learner completes all modules	System	Generate Progress Report
Instructor provides feedback on assignments	Instructor	Provide Feedback
Customer Service resolves technical issues	Customer Service	Resolve Technical Issues
Learner completes a module	System	Unlock Next Module
Instructor finishes grading all assignments	System	Notify Learners of Grades
Learner completes a quiz or assignment	System	Automatically Grade Quiz

v. *Use Case Brief Description Table*

Use Case	Brief Use Case Description
Enroll in Course	Learner selects a course to enroll in, and the system registers the learner and grants access to course materials.
Create Course	Instructors enter course details, sets objectives, and schedules it. The system creates and lists the new course.
Upload Course Materials	Instructor uploads multimedia content, and the system attaches materials to the course for learner access.
Issue Certificate	Learner completes all course requirements, and the system issues a certificate of completion for the learner.
View Available Courses	Learner views the course catalog, and the system displays a list of available courses.
Search Courses	Learner enters search criteria, and the system displays courses matching those criteria.
Submit Assessment	Learner submits an assessment , and the system saves the submission for instructor review.
Grade Assessment	The instructor reviews the assessments, assigns a grade, and the system updates the learner's grade record.
Request Technical Support	Learner submits a support request ticket, and the system notifies Customer Service for assistance.
Update Course Catalog	The administrator adds, updates, or deletes courses, and the system modifies the catalog.
Respond to User Inquiries	Customer Service receives an inquiry from a user, provides a response, and resolves the issue.
Manage User Accounts	The administrator creates, updates, or deletes user accounts as requested.
View Platform Performance	Investors of the system might request a performance report in which the system generates some key performance metrics.
Notify Learners of Scheduled Session	The system sends out notifications to learners to remind them of any upcoming scheduled session.

Submit Final Assessments	The system prompts learners to submit their final assessments before the course is completed.
Perform System Maintenance	The IT team performs specific scheduled maintenance times in which the system undergoes necessary updates and optimizations.
Review System Performance	The Board of Directors requests a quarterly system performance report, and the system generates the needed reports for review.
Review Financial Performance	Senior Managers request a financial performance report of the system, and the system provides the asked measurement .
Generate Progress Report	The system generates weekly progress reports for instructors in order to summarize the engagement and performance of the learners.
Provide Feedback	The instructor reviews learners' assessment and provides feedback. Then, the system sends it to the learner.
Resolve Technical Issues	Customer Service resolves reported technical issues, and the system records the solving of the issue.
Unlock Next Module	When the learner completes a module, the system unlocks the next module for the learner to start.
Notify Learners of Grades	The system notifies learners once all assessments have been graded and updated in their personal records.
Automatically Grade Assessments	When the learner submits a quiz or an assignment , the system automatically grades it if it is eligible for auto-grading.

VI.   *Use Case Diagrams UML*

EducCertify Educational System

- Update Course Catalog
- Manage User Accounts
- Notify Learners of Scheduled Sessions
- Notify learners for grades
- Submit Final Assessment
- Unlock Next Module
- Generate Progress Report
- Perform System Maintenance
- Resolve Tehnical Issues
- «extend»
- Respond to User Inquiries

Administrator

Learner

System

Instructor

IT Team

Customer Service

EduCertify Educational System

View Platform Performance

Review System Performance

«extend»

Review Financial Performance

Provide Feedback

Automatically Grade Assessments

Investor

Instructor

Board of Directors

Senior Managers

System

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