Software requirement specification document for primary school e-learning system project

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1 Introduction

1.1 Purpose of this document

Purpose of the software is mainly focused on providing a primary school e-learning system . Providing detailed description and representation for each of the system functionalities and qualities, pointing out what are available and not available in our system. The document mainly focuses on providing description for a school e-learning system functionalities introducing new functionality which is the parenting proctoring option. E-learning system idea was inspired from an existing primary e-learning system "Classera". Target audience for this system (Students, Parents, and Teachers) to provide the flexibility in providing knowledge and interaction for them. This document audience for the stakeholders who required the following system to make sure it follows needed specification, functionalities and qualities.

1.2 Scope of this document

Scope of this document is focused on the development of an e-learning system that will be used by target users. This system offers the facility of being used either by teachers, students, or parents. Teachers will have different options to navigate through.Teachers will have the facility to record attendance of students and track their attendance percentage. Also, the product offers the facility of announcing announcements to enable flexible communication between students and the teachers. Product will also offer the ability of sending forums. Teachers will be offered related subject details which contain all related, and useful materials for the subject. As well as a subject activities panel which will contain all the needed work from students to ensure their acknowledgement of subject objectives.Each of which has its own operations that will be applied against it. Starting from applying different operations on the 'lessons' sub-panel in the subject details panel. As well as on each of the 'assignments', 'quizzes' sub-panel in subject activities panel. Student panel will have sub-panels that

contain different operations that will make them able to be updated with new requirements for the subject. Introducing the new feature parent panel which will be added to be able to track and overview student's progress in different subjects. As well as to be up to date to all events, announcements,conflicts related to their students. The system won't include any kind of HR, managerial, attendance,or any kind of process that isn't related to education/e-learning curriculum.

1.3 Overview

Primary e-learning system provides flexibility to be used either by students in-order to be updated with all school tasks, by parents to check up on their children academic and behavioral status and receive teachers feedback through receiving forums from teachers ,whilst by teachers to be able to monitor and guide their students through their education either by offering suitable and useful content to help them to study, providing different activities, making announcements to keep students up-to-date till taking and tracking their attendance to ensure their dedication.

1.4 Business Context

The business objective of this system is looking forward to having the students updated with any new announcements from teachers, interacting with teachers in case facing a problem, having a single place with all the needed materials for them to study from. For the teachers to have a way to be able to communicate and be more interactive with students remotely by announcements and forums, practicing what they have learnt by solving assignments and attempting quizzes to gain more knowledge, as well as to track and check their attendance percentage in each subject. Finally, there is a way to keep parents who have an important and effective role, always updated with their children's overall academic and behavioral performance in school and being able to contact their teachers at any time.

2 General Description

2.1 Product Functions

The general function of this system is to act like a platform through which teachers and students can be in parallel contact education-wise, each performing their role. Parents wise, to act as a reference to their children's overall performance along with their school semester.

2.2 Similar System Information

This product system is inspired from "Classera" primary e-learning school system. With the new feature was added which is parent's eligibility to check up on their children's overall performance, as well as being able to have a direct contact with teachers for any issues.

2.3 User Characteristics

The environment upon which the system will be used will be for a non-profit organization which will be a primary school for this product system. The product system will be in a very simple interface, easy to use and understand how to deal with its functionalities. The product system's language will be in the simplest way of an English language, taking in consideration the possibility of lack of dealing with second language privilege . Teachers, students, and parents will be able to deal with such a system starting from the flexibility of the interface and its simple English language till dealing with its basic, common functionalities.

2.4 User Problem Statement

Based on the requirements analysis that was done, the main problem was facing the user is the in-ability of teachers to update students with new announcements/changes that happens occasionally, overwhelming paperwork for teachers, students not having a fixed, common environment where they can access their subject materials easily instead of the overwhelming papers and high-costing books. Finally, lack of parent's supervision due to absence of contact between teachers and parents as well as parent's inability to check on their children's academic and behavioral performance frequently.

2.5 User Objectives

The target users of this product system are looking forward to seeing functional solutions for the problems that were declared in the requirement analysis document, as well as dashboard design, and events/forums panel which will be considered as a wishlist till executing and finalizing the main functionalities.

2.6 General Constraints

School product system won't be able to accommodate large numbers of participants/users due to the limited plan chosen for cloud server functionality. Future upgrades may occur.No hardware constraints are needed.

3 Functional Requirements

This section lists the functional requirements in ranked order. Functional requirements describe the possible effects of a software system, in other words, what the system must accomplish. Other kinds of requirements (such as interface requirements, performance requirements, or reliability requirements) describe how the system accomplishes its functional requirements see table 20. Each functional requirement should be specified in a format similar to the following:

Table 1: Functional Requirement : Teacher subject material panel; View lessons

Function Name	View lessons
Description	This function allows teachers to view their curriculum, by showing a table of contents of subject lessons.It acts as a good reference for studying to students. As well as for parents to check on how far they've reached in applying the curriculum.
Critically	This function is critical for flexible navigation and availability of subject materials which is part of the essence of the product, and having overview about the subject.
Cost and schedule	/NA
Technical issues	Unavailability of the server will affect displaying lessons.
Risks	Teachers haven't added any lessons so, there are no lessons to be displayed.
Dependencies with other requirements	It depends on the ' Add lesson() function '.
Pre-Condition:	/NA
Post-Condition:	Lessons are displayed

Table 2: Functional Requirement : Teacher subject material panel; Add lesson

Function Name	Add lesson
Description	This function allows teachers to add lessons frequently to the curriculum to make it available for their students.
Critically	This function is critical for flexibility in modifying curriculum and providing different functionalities in the system.
Technical issues	Unavailability of the server will affect displaying lessons.
Cost and schedule	/NA
Dependencies with other requirements	/NA
Pre-Condition:	Lesson Title, Lesson Code
Post-Condition:	Lesson is added

Table 3: Functional Requirements : Teacher subject activities panel; View assignments

Function Name:	View assignment
Description	This function enables the teacher to check on all the assignments he uploaded and keep track of them.
Critically	This function is critical for flexibility and providing different functionalities in the system as the regular one should.
Technical issues:	Unavailability of the server will affect displaying assignments.
Cost and schedule:	/NA
Risks	Teachers haven't added any assignments yet, so there are no assignments to be displayed.
Dependencies with other requirements:	It depends on the ' Add assignment() function '.
Pre-Condition:	/NA
Post-Condition:	Assignments are displayed

Table 4: Functional Requirements : Teacher subject activities panel; Add assignment

Function Name	Add assignment
Description	This function enables the teacher to add assignments for students upon taking each new lesson, to ensure student's practice and understanding of the taken topic.
Critically	This function is critical for flexibility and providing the needed functionality suitable for an e-learning system.
Technical issues:	/NA
Cost and schedule:	/NA
Dependencies with other requirements:	/NA
Pre-Condition:	Assignment code, assignment title
Post-Condition:	Assignment is added

Table 5: Functional Requirements : Teacher subject activities panel; Remove assignment

Function Name:	Remove assignment
Description:	This function enables the teacher to modify by showing or hiding assignments needed to be solved related to content that wasn't yet taken. Provides flexibility for teachers in using offered system functionalities.
Critically:	This function is critical for flexibility and providing the ability to modify if any errors occurred by the teacher.
Cost and schedule:	/NA
Technical issues:	/NA
Risks.	/NA
Dependencies with other requirements:	/NA
Pre-Condition:	Assignment Code and Assignment Title

Post-Condition:	Assignment is removed

Table 6: Functional Requirements : Teacher subject activities panel; <mark>View class task</mark>

Function Name	View class task
Description	This function allows the teacher to view class tasks which were uploaded day by day and according to the lesson that was taken. In order to test student's understanding of what was explained earlier.
Critically	This function is critical for the teacher in-order to keep track of the latest progress he reached in class by viewing tasks related to topics he explained.
Cost and schedule	/NA
Technical issues	Unavailability of the server will affect displaying assignments
Dependencies with other requirements	It depends on the ' Add class task() function '.
Risks	Teachers haven't added any class tasks yet, so there are no class tasks to be displayed.
Pre-Condition :	/NA
Post-Condition :	Class tasks are viewed

Table 7: Functional Requirements : Teacher subject activities panel; <mark style="background-color:#00ff00">Add class task</mark>

Function Name	Add class task
Description	This function allows the teacher to add class tasks expecting to be solved by students for in class interaction purposes, and to test how far did the student understand the lesson explained.
Critically	Critical for flexibility and providing the needed functionality suitable for an e-learning system.
Technical issues	/NA
Cost and schedule	/NA
Risks	/NA

Dependencies with other requirements	/NA
Pre-Condition :	Class task code, Class task title
Post-Condition :	Class task is added

Table 8: Functional Requirements : Teacher subject activities panel; <mark>Remove class task</mark>

Function Name	Remove class task
Description	This function allows teachers to modify by either showing or removing class tasks based on what was explained to students in-order to clear any ambiguity or confusion in adding class task material that wasn't explained yet.
Critically	Critical for flexibility and providing the needed functionality suitable for an e-learning system.
Technical issues	/NA
Cost and schedule	/NA
Risks	/NA
Dependencies with other requirements	/NA
Pre-Condition :	Class task code, Class task title
Post-Condition :	Class task is removed

Table 9: Functional Requirements : Teacher subject activities panel; <mark>View quiz</mark>

Function Name	View quiz
Description	This function allows the teacher to see all quizzes uploaded for students to attempt, and to check the progress of curriculum required work from students.
Critically	Critical for flexibility and providing the needed functionality suitable for an e-learning system.
Technical issues	Unavailability of the server will affect displaying assignments
Cost and schedule	/NA

Risks	Teachers haven't added any quizzes yet, so there are no quizzes to be displayed.
Dependencies with other requirements	It depends on the ' Add quiz() function '.
Pre-Condition:	Quiz code, Quiz title
Post-Condition:	Quizzes are viewed

Table 10: Functional Requirements : Teacher subject activities panel; Add quiz

Function Name	Add quiz
Description	This function allows teachers to upload quizzes for students to attempt to test the student's ability to recall the required topics and how far is their comprehension for the subject.
Critically	Critical for flexibility and providing the needed functionality suitable for an e-learning system.
Technical issues	/NA
Cost and schedule	/NA
Risks	/NA
Dependencies with other requirements	/NA
Pre-Condition:	Quiz code, Quiz title
Post-Condition:	Quiz is added

Table 11: Functional Requirements : Teacher subject activities panel; Remove quiz

Function Name	Remove quiz
Description	This function allows the teacher to modify the quizzes he uploaded by removing quizzes that were uploaded at a wrong timing of the semester to prevent any confusion.
Critically	Critical for flexibility and providing the needed functionality suitable for an e-learning system.
Technical issues	/NA
Cost and schedule	/NA

Risks	/NA
Dependencies with other requirements	/NA
Pre-Condition:	Quiz code, Quiz title
Post-Condition:	Quiz is removed

Function Name	View class preparation
Description	This function allows teachers to check on the target lessons/ prepared lessons that they will explain for each class.
Critically	This function is critical for flexibility and providing different functionalities in the system as the regular one should.
Technical issues	Unavailability of the server will affect displaying class preparation
Cost and schedule	/NA
Risks	Teachers haven't added any class preparations yet, so there is no class preparation to be displayed.
Dependencies with other requirements	It depends on the ' Add class preparation() function '.
Pre-Condition:	Preparation code, preparation title
Post-Condition:	Preparations are displayed

Function Name	Add class preparation
Description	This function allows teachers to upload their class preparation as it will be useful for parents to be up to date with what will be explained in every class and how far the curriculum is done.
Critically	This function is critical for flexibility and providing different functionalities in the system as the regular one should.
Technical issues	/NA

Cost and schedule	/NA
Risks	/NA
Dependencies with other requirements	/NA
Pre-Condition:	Class preparation code, Class preparation title
Post-Condition:	Class preparation is added

Function Name	Remove class preparation
Description	This function allows teachers to modify by removing class preparation for earlier lessons that will be explained but not in its specific time to clear any ambiguity or confusion.
Critically	This function is critical for flexibility and providing different functionalities in the system as the regular one should.
Technical issues	/NA
Cost and schedule	/NA
Risks	/NA
Dependencies with other requirements	/NA
Pre-Condition:	Class preparation code, Class preparation title
Post-Condition:	Class preparation is removed

Table 12: Functional Requirement : Student; View lesson

Function Name	View lesson
Description	This function allows students to view their available subject materials (i.e lessons) as it's considered to be their reference to study from, and offers to be updated with any extra lessons that will be modified by the teacher.
Critically	Critical for flexibility and providing the needed functionality suitable for an e-learning system.

Technical issues	Unavailability of the server will affect displaying lessons
Cost and schedule	/NA
Risks	Teachers haven't added any lessons yet, so there are no lessons to be displayed for students.
Dependencies with other requirements	It depends on the ' Add lesson() function ' controlled from the teacher's panel.
Pre-Condition:	/NA
Post-Condition:	Lessons are displayed

Table 13: Functional Requirements : Student; <mark>View assignment</mark>

Function Name:	View assignment
Description	This function enables students to check assignments that were uploaded by their teacher in-order to be updated and have the ability to solve and upload them on time.
Critically	Critical for flexibility and providing the needed functionality suitable for an e-learning system.
Technical issues:	Unavailability of the server will affect displaying assignments
Cost and schedule:	/NA
Risks	Teachers haven't added any assignments yet, so there are no assignments to be displayed for students.
Dependencies with other requirements:	It depends on the ' Add assignment() function ' controlled from the teacher's panel.
Pre-Condition:	/NA
Post-Condition:	Assignments are displayed

Table 14: Functional Requirements : Students; <mark>View class task</mark>

Function Name	View class task
Description	This function allows students to interact with and solve uploaded in-class tasks to enhance their knowledge on the explained lesson.
Critically	This function is critical for flexibility and providing different functionalities in the system as the regular one should.
Technical issues	Unavailability of the server will affect displaying assignments
Cost and schedule	/NA

Risks	Teachers haven't added any class tasks yet, so there are no class tasks to be displayed for students.
Dependencies with other requirements /NA	It depends on the ' Add class task() function ' controlled from the teacher's panel.
Pre-Condition :	Task Title, Task code
Post-Condition :	Class task is viewed

Table 15: Functional Requirements : Student; View quiz

Function Name	View quiz
Description	This function allows students to check their progress in how many quizzes were attempted/taken and if there are any upcoming quizzes.
Critically	This function is critical for flexibility and providing different functionalities in an e-learning system as the regular one should.
Technical issues	Unavailability of the server will affect displaying assignments
Cost and schedule	/NA
Risks	Teachers haven't added any quizzes yet, so there are no quizzes to be displayed for students.
Dependencies with other requirements	It depends on the ' Add quiz() function ' controlled from the teacher's panel.
Pre-Condition:	/NA
Post-Condition:	Quizzes are viewed

Table 17: Functional Requirement : Parent; View class preparation

Function Name	View preparation
Description	This function allows parents to be updated by the day to day material that is taken in school to keep up with their student.
Critically	This function is critical for flexibility and providing different functionalities in the system as the regular one should.
Technical issues	Unavailability of the server will affect displaying class preparation
Cost and schedule	/NA

Risks	Teachers haven't added any class preparations yet, so there are no class preparations to be displayed for students.
Dependencies with other requirements	It depends on the ' Add class preparation() function ' controlled from the teacher's panel.
Pre-Condition:	/NA
Post-Condition:	preparations are displayed

Table 18: Functional Requirements : Parent; <mark>View assignment marks</mark>

Function Name:	View assignment marks
Description	This function enables parents to check on the latest uploaded assignments in-order to keep up with their child's interaction, marks and progress in the subject.
Critically	This function is critical for flexibility and providing different functionalities in the system as the regular one should.
Technical issues:	Unavailability of the server will affect displaying assignment marks
Cost and schedule:	/NA
Risks	Teachers haven't added any marks for student's assignments yet, so there is nothing to be displayed for students.
Dependencies with other requirements:	It depends on the ' <mark>Add assignment marks()</mark> function ' controlled from the teacher's panel.
Pre-Condition:	/NA
Post-Condition:	Assignment marks are displayed

Table 19: Functional Requirements : Parent; <mark>View class task marks</mark>

Function Name:	View class task marks
Description	This function enables parents to check on the latest uploaded class tasks in-order to keep up with their child's interaction in class and how far their comprehension is.
Critically	This function is critical for flexibility and providing different functionalities in the system as the regular one should.

Technical issues:	Unavailability of the server will affect displaying class taskmarks
Cost and schedule:	/NA
Risks	Teachers haven't added any marks for student's class tasks yet, so there is nothing to be displayed for students.
Dependencies with other requirements:	It depends on the ' Add class task marks() function ' controlled from the teacher's panel.
Pre-Condition:	/NA
Post-Condition:	Class task marks are displayed

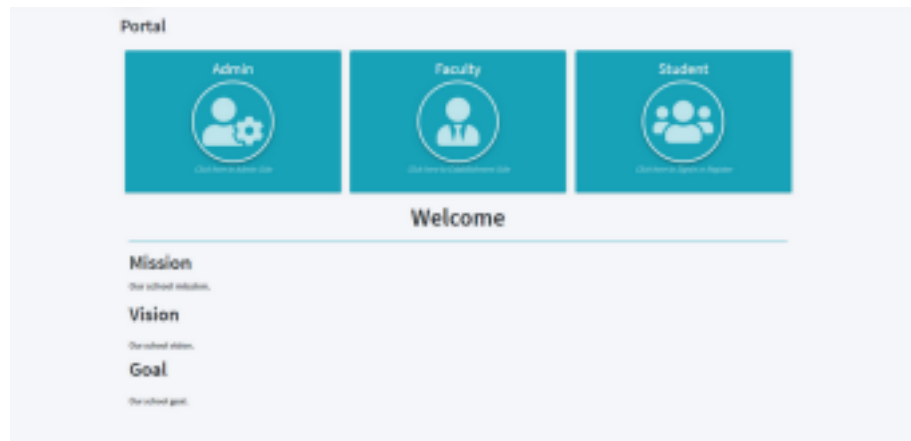Table 20: Functional Requirements : Parent; View quiz marks

Function Name	View quiz marks
Description	This function allows parents to check their child's studying progress, and understanding for the subject.
Critically	This function is critical for flexibility and providing different functionalities in the system as the regular one should.
Technical issues	Unavailability of the server will affect displaying class taskmarks
Cost and schedule	/NA
Risks	Teachers haven't added any marks for student's quiz yet, so there is nothing to be displayed for students.
Dependencies with other requirements /NA	It depends on the ' Add quiz marks() function ' controlled from the teacher's panel.
Pre-Condition:	/NA
Post-Condition:	Quiz marks are viewed

4 Interface Requirements

Web browser availability to run the interface.

4.1 User Interfaces

4.1.1 GUI

4.1.2 CLI

/NA

4.1.3 API

Gmail software as a service API

Slack API

Turn it API

Moodle platform forum API

4.1.4 Diagnostics or ROM

/NA

4.2 Hardware Interfaces

4.3 Communications Interfaces

The following product system doesn't need any network communication.

4.4 Software Interfaces

/NA

5 Performance Requirements

/NA

6 Design Constraints

6.1 Standards Compliance

/NA

6.2 Hardware Limitations

There are no hardware limitations.

6.3 others as appropriate

/NA

7 Other non-functional attributes

Specifies any other particular non-functional attributes required by the system. Examples are provided below.

7.1 Re-usability

Using an interface that is kind of similar to an old project, improving an old class diagram/use case for an old project and updating our database from unordered text files to database (phpMyadmin).

7.2 Usability

Novice users shall perform any task in the system with minimal time and effort. Experienced users shall perform tasks in the system in the most minimal time possible.

7.3 Robustness

The system will be using cloud services therefore it can withstand # of users requests and up to # of users with browsing capabilities.

8 Preliminary Object-Oriented Domain Analysis

This section presents a list of the fundamental objects that must be modeled within the system to satisfy its requirements. The purpose is to provide an alternative, "structural" view on the requirements stated above and how they might be satisfied in the system. A primitive class diagram to be delivered.

8.1 Inheritance Relationships

This section should contain a set of graphs that illustrate the primary inheritance hierarchy (is-kind-of) for the system. For example:

8.2 Class descriptions

This section presents a more detailed description of each class identified during the OO Domain Analysis. For more details on the process giving rise to these descriptions, see Lecture 5.3: OO Domain Analysis and/or texts on object-oriented software development. Each class description should conform to the following structure:

8.2.1

Concrete: Teacher class.

8.2.2 Purpose:

The purpose of the teacher is to perform all required functions to be able to monitor and offer guidance for students through their educational levels and to offer much flexibility by using the e-learning system.

8.2.3 Collaborations:

This class will interact with the subject class to have the eligibility in using subject activities and subject details. As well as Announcement and Attendance classes.

8.2.4 Attributes:

Subject code (Integer), Subject name (String), Degree

(String) Teacher id (Int), Teacher name (String), Email (String).

8.2.5 Operations

A- View Subject (Subject subjectX :object)

B- Set teacher(teacher_name: String)

C- Get teacherId(teache_id: Int)

D- View Forums(Forum forumX: object)

E- Check AttendanceSheet(Attendance attendanceX: object)

F- Check AnnouncementThreads(Announcement announcementX:object)

8.2.5

Concrete: Subject

8.2.6 Purpose:

The purpose of this class is to offer all the kinds of subject actions that are offered either for teachers, students, or parents. Each action offers a set of other actions that enables all users to interact, send, and monitor each other's work.

8.2.7 Collaborations:

This class will interact with subject material, subject activities, students, and parents .

8.2.8 Attributes:

SubjectMaterial DefaultSubjectMaterial: object

SubjectActivities DefaultSubjectActivities: object

Subject name: String

Subject Id: int

8.2.9 Operations

Setsubject (String: subject name), Getsubject (Int : subject code), __Construct (String: subject name, Int: subject Id), View subject activities(SubjectActivities DefaultSubjectActivitiesX), View subject material(SubjectMaterial DefaultSubjectMaterialY).

8.2.10

Concrete: Subject material

8.2.11 Purpose:

The purpose of this class is to offer flexible actions to use materials offered related to the subject which is the essence of the product, to assist all users of the product.

8.2.12 Collaborations:

/NA

8.2.13 Attributes:

IAddAction iaddaction

IViewAction iviewaction

IDeleteAction ideleteaction

IMarkAction imarkaction

8.2.14 Operations

Set subject material(subject_name)

Get subject material (subject_Id)

8.2.15

Concrete: Lessons

8.2.16 Purpose:

The purpose of this class is to allow teachers to modify lessons either to update or delete lessons as well as for students or parents to have access to the subject's lessons

8.2.17 Collaborations:

This class will interact with SubjectMaterial class

8.2.18 Attributes:

      Lesson_Id (Int)

      Lesson_name (String)

8.2.19 Operations

      SetLesson name (Lesson_name: string)

      GetLesson Id (Lesson_Id: Id)

8.2.20

      Concrete: Preparation

8.2.19 Purpose:

      The purpose of this class is to offer the teacher the eligibility to upload his preparations for parents and students to be up to date with upcoming materials that will be taken and for him to check on the progress of how much of the curriculum was done.

8.2.20 Collaborations:

      This class will interact with subject material.

8.2.21 Attributes:

      Preparation_Id (Int)

      Preparation_title (String)

8.2.22 Operations

SetPreparation title(Preparatio_title : String)

GetPreparation Id (Preparation_Id : Int)

8.2.15

Concrete: Subject Activities

8.2.16 Purpose:

The purpose of this class is to offer as many exercises related to the material for students to practice on by enabling teachers to add, delete related or unrelated activities to the material.

8.2.17 Collaborations:

/NA

8.2.18 Attributes:

IActAction iactaction

IViewAction iviewaction

IDeleteAction ideleteaction

IMarkAction imarkaction

8.2.19 Operations

Set subject activities()

Get subject activities()

8.2.15

Concrete: Assignment

8.2.16 Purpose:

The purpose of this class is to be able to keep up with new uploaded assignments either by students or teachers as well as parents to keep up with their student's progress.

8.2.17 Collaborations:

This class will interact with subject activities.

8.2.18 Attributes:

Assignment_Id (Int)

Assignment_name (String)

8.2.19 Operations

SetAssginment _name (Assginment_name: string)

GetAssignment_ Id (Assginment_Id: Id)

8.2.15

Concrete: Class task

8.2.16 Purpose:

The purpose of this class is to offer students a quick exercise to measure how far they understand material that was taken in class.

8.2.17 Collaborations:

This class will interact with subject activities.

8.2.18 Attributes:

Class task_Id (Int)

Class task_name (String)

8.2.19 Operations

SetClass task_name (Class task_name: string)

GetClass task_ Id (Class task_Id : Id)

8.2.15

Concrete: Quiz

8.2.16 Purpose:

The purpose of this class is to be able to make students test their comprehension of the material and check if they keep up with what was taken.

8.2.17 Collaborations:

This class will interact with subject activities.

8.2.18 Attributes:

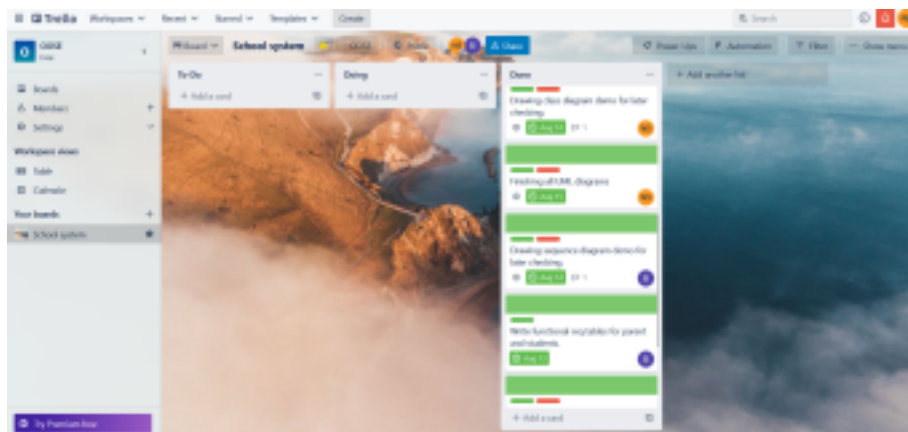Quiz_Id (Int)

Quiz_name (String)

8.2.19 Operations

SetQuiz_name (Quiz_name: string)

GetQuiz_ Id (Quiz : Id)

9 Operational Scenarios

Scope of this document is focused on the development of an e-learning system that will be used by target users. This system offers the facility of being used either by admin, students, or parents. By mentioning admin it refers to education staff (i.e teachers). Admin will have different options to navigate through. It will have subject details and a subject activities panel. Each of which has its own operations that will be applied against it. Starting from applying different operations on lessons sub-panel in subject details panel, as well as on each of assignments, quizzes sub-panel in subject activities panel. Student panel will have sub-panels that contain different operations that will make him able to be updated with new requirements for the subject. Parent panel will be added to be able to track and overview student's progress in different subjects.

10 Preliminary Schedule Adjusted

Trello screenshot

11 Preliminary Budget Adjusted

/NA

12 Appendices

¡ If there are any extra information beyond the knowledge of the reader you have to specify it at the very back of the document.¿

12.1 Definitions, Acronyms, Abbreviations

Provides definitions of unfamiliar definitions, terms, and acronyms.

12.2 Collected material

13 References

By applying a fundamental requirement pattern for some of the discussed requirements.

1. Inter-System Interface RQP:

A] **RQ 1: Login**

Name: Login interface **ID**: ITF (1A)	There shall be a clearly defined interface called (ITF 1A) between the system and e-mail authentication authority (i.e, Gmail). It is invoked by the system only. It's purpose is to verify user role login.
The system at each end	ITF 1A and e0mail

	authentication authority interface which are similar in terms of requirements as both serve the same purpose in the eligibility to allow users to sign in to their designated accounts as well as offering security from password loss, till account intrusions.
Interface purpose	Purpose is to offer users of the system multiple ways to sign. This is another way to sign using their email accounts to be able to use the system's services.
Interface owner	ITF (1A) owners refer to the authentication authority 'Google'.
Technology to be used for the interface	Gmail API

B] **RQ 2: Add Lesson**

Name: Add Lesson interface **ID**: ITF (2A)	There shall be a clearly defined interface called (ITF 2A) between the system and cloud storage authority (i.e, Google drive). It is invoked by the system only. Its purpose is to offer links for all uploaded materials (Lessons) for students.
The system at each end	ITF 2A and cloud storage authority interface which are similar in terms of requirements as both serve the same purpose

	in the eligibility to offer users with links for all uploaded materials to have permanent access for materials for all students.
Interface purpose	Purpose is to offer eligibility to users with links to the uploaded materials to have permanent access for materials for all students.
Interface owner	ITF (2A) owners is our system whilst cloud storage interface refers to the cloud storage authority 'Google drive'.
Technology to be used for the interface	Google drive API

B] **RQ 2: Add Preparation**

Name: Add Preparation interface **ID**: ITF (3A)	There shall be a clearly defined interface called (ITF 3A) between the system and cloud storage authority (i.e, Google drive). It is invoked by the system only. Its purpose is to offer links for uploaded teacher's preparation plans for materials that are to be explained.
The system at each end	ITF 3A and cloud storage authority interface which are similar in terms of requirements

	as both serve the same purpose in the eligibility to offer users links for preparation plan for materials.
Interface purpose	Purpose is to offer eligibility to users with links to preparation plans for materials that are to be taken to offer students the chance to be able to read / prepare for it as well as for parents to keep up with curriculum plan schemes.
Interface owner	ITF (3A) owners is our system whilst cloud storage interface refers to the cloud storage authority 'Google drive'.
Technology to be used for the interface	Google drive API

C] **RQ 3: Add Assignment**

Name: Add Assignment interface **ID**: ITF (4A)	There shall be a clearly defined interface called (ITF 4A) between the system and cloud storage authority (i.e, Google drive). It is invoked by the system only. Its purpose is to offer links for uploaded assignments intended for students to make.
The system at each end	ITF 4A and cloud storage authority interface which are similar in terms of requirements

	as both serve the same purpose in the eligibility to offer students an easy way to access required assignments.
Interface purpose	Purpose is to offer eligibility to users with links to the assignments needed to be done so that all students have access to it easily.
Interface owner	ITF (4A) owners is our system whilst cloud storage interface refers to the cloud storage authority 'Google drive'.
Technology to be used for the interface	Google drive API

D] **RQ 4: Upload Assignment**

Name: Upload Assignment interface **ID**: ITF (5A)	There shall be a clearly defined interface called (ITF 5A) between the system and plagiarism checker authority (i.e, Turn it in). It is invoked by the system only. Its purpose is to verify uploaded assignments plagiarism.
The system at each end	ITF 5A enables students to view information about assignments

	such as : due date, remaining time, and a slot for uploading files. Plagiarism checker authority enables students to upload their assignment file and check it for any plagiarism and showing % if any.
Interface purpose	Purpose is to offer the ability to upload assignments and check assignment's metadata as well as checking for any plagiarism made by students.
Interface owner	ITF (5A) owners is our system whilst Plagiarism checker authority refers to 'Turn it in' authority LLC organization.
Technology to be used for the interface	Turn it in API

E] **RQ 5: Attempt quiz**

Name: Attempt quiz interface **ID**: ITF (6A)	There shall be a clearly defined interface called (ITF 6A) between the system and (Quizizz) website. It is invoked by the system only. Its purpose is to allow students to have quizzes on an engaging platform allowing them to know their marks instantly as well as offering study cards as an extra.
The system at each end	ITF 6A enables students to take

	required quizzes from their teacher while (Quizizz) interface offers an engaging way and a useful platform.
Interface purpose	Purpose is to allow students to have quizzes on an engaging platform allowing them to know their marks instantly as well as offering study cards as an extra.
Interface owner	ITF (6A) owners is our system whilst the website interface refers to 'Quizizz' .
Technology to be used for the interface	Quizizz website API

2. Inter-System Interaction RQP:

A] RQ 1: Login

Interaction Name:	Sign in with authentication interface
Interaction ID:	INT (1A)
Interaction purpose:	The authentication interface (ITF 1A)shall provide the eligibility to sign in to the target user account, to be able to have full access to the user's own data. It will be initiated by the user whenever he tries to sign in.

The information to pass:	A sign in request shall contain: • User's email • User's password The response after that would either be accepted viewing the user's account or rejected if any of the previous deliverables were incorrect.

3. Technology RQP:

Technology Area 1:	The technology that will be used in this area focuses on the physical for the system to function and be available if any. • The system shall operate on any operating system. • The system shall operate on a basic hardware and will not need extra operational requirements than the normal. • The system shall use local database "phpMyadmin", as well as local web server "Apache server". Motivation for such requirements is to clear out the tools that are needed during the production of the system in order to save time and money.
Area 3:	The technology that will be used in this area focuses on the tools that will be used by programmers during the development of the system. • Eversince software being developed is a simple software therefore it shall be written in a simple programming language. Motivation for such a requirement is to enable the use of well-known development tools.
There shall be no means in using any scripts, cmd.	

4. Comply with standards RQP:

Standards	
Industrial standards **Name: U.K. Data Protection Act**	The system shall protect personal information in accordance with the U.K. Data Protection Act, 1998. Source: http://www.opsi.gov.uk/acts/acts1998/1998 0029.htm
Company -specific standards **Name: Company Web style guidelines**	All Web pages produced by the system or written in association with it shall comply with the company's Web style guidelines.
Technical standards **Name: ISO 639**	Spoken languages shall be identified internally in the system by codes defined in ISO 639, the international standard for natural languages. (Note that this requirement does not cover the display of language choices to users-for which it is preferable to use the names of the languages.) Source: http://www.loc.gov/standards/iso639-2/langhome.html

5. Refer-to-requirements RQP :

Primary school e-learning requirements	The system shall satisfy all the discussed requirements in (SRS) Requirements Specification, which resides at ##

6. Documentation RQP :

User guide	There shall be a user guide for all functions available to internal users.
Operating instructions	There shall be operating instructions that explain to an operator (system administrator) how to run the system. It shall cover at least startup, shutdown, and the monitoring of the system's health.
Procedures manual	There shall be written operational procedures for all business processes that involve use of the system
System design	The design of the system shall be documented.

Prioritization:

Requirement	Importance (0.7)	Penality(0.3)	IP	Time	Risk	Volatility
R1 (view marks: Parent panel)	1	1	1	1	0	0
R2(View class preparation: Parent panel)	1	1	1	1	0	0