

EduBlock

HSGamer

11/8/22

Table of contents

Preface	1
1 Acknowledgement	3
2 Definition and Acronyms	5
3 Project Introduction	7
3.1 Overview	7
3.1.1 Project Information	7
3.1.2 Project Team	7
3.2 Background	7
3.3 Existing Systems	7
3.4 Business Opportunity	7
3.5 Software Product Vision	7
3.6 Project Scope & Limitations	7
4 Project Management Plan	9
4.1 Overview	9
4.1.1 WBS & Estimation	9
4.1.2 Project Objectives	9
4.1.3 Project Risks	9
4.2 Management Approach	9
4.2.1 Project Process	9
4.2.2 Quality Management	9
4.2.3 Training Plan	9
4.3 Master Schedule	9
4.4 Project Organization	9
4.5 Project Communication	9
4.6 Configuration Management	9
4.6.1 Tools & Infrastructures	9
4.6.2 Document Management	9
4.6.3 Source Code Management	9
5 Software Requirement Specification	11
5.1 Overall Description	11
5.1.1 Product Overview	11
5.1.2 Business Rules	11
5.2 User Requirements	11

5.3	Functional Requirements	11
5.4	Non-Functional Requirements	11
5.4.1	External Interfaces	11
5.4.2	Quality Attributes	11
5.5	Other Requirements	11
6	Software Design Description	13
6.1	Overall Description	13
6.1.1	Assumptions	13
6.1.2	Design Constraints	13
6.1.3	Technology Suggestion	13
6.2	System Architecture Design	13
6.2.1	Overall Architecture	13
6.2.2	System Architecture	13
6.2.3	Package Diagram	13
6.3	System Detailed Design	13
6.4	Class Specification	13
6.5	Data & Database Design	13
6.5.1	Database Design	13
6.5.2	Data File Design	13
7	Software Testing Documentation	15
7.1	Overall Description	15
7.1.1	Test Model	15
7.1.2	Testing Levels	15
7.1.3	Testing Types	15
7.2	Test Plan	15
7.2.1	Test Stages	15
7.2.2	Resources	15
7.2.3	Test Milestones	15
7.2.4	Deliverables	15
7.3	Test Cases	15
7.4	Test Reports	15
8	Release Package & User Guides	17
8.1	Deliverable Package	17
8.1.1	Source Codes & Documents	17
8.1.2	Known Issues, Limitations & Restrictions	17
8.2	Installation Guides	17
8.2.1	System Requirements	17
8.2.2	Setup Files	18
8.2.3	Installation Instruction	18
8.3	User Manual	18
8.3.1	Terms & Definitions	18
8.3.2	System Requirements	18
8.3.3	Application Usage	18
8.3.4	Troubleshooting	24
	References	25

TABLE OF CONTENTS

v

Appendix

27

Preface

This is the final report of EduBlock

Chapter 1

Acknowledgement

Chapter 2

Definition and Acronyms

Chapter 3

Project Introduction

3.1 Overview

3.1.1 Project Information

3.1.2 Project Team

3.2 Background

3.3 Existing Systems

3.4 Business Opportunity

3.5 Software Product Vision

3.6 Project Scope & Limitations

Chapter 4

Project Management Plan

4.1 Overview

4.1.1 WBS & Estimation

4.1.2 Project Objectives

4.1.3 Project Risks

4.2 Management Approach

4.2.1 Project Process

4.2.2 Quality Management

4.2.3 Training Plan

4.3 Master Schedule

4.4 Project Organization

4.5 Project Communication

4.6 Configuration Management

4.6.1 Tools & Infrastructures

4.6.2 Document Management

4.6.3 Source Code Management

Chapter 5

Software Requirement Specification

5.1 Overall Description

5.1.1 Product Overview

5.1.2 Business Rules

5.2 User Requirements

5.3 Functional Requirements

5.4 Non-Functional Requirements

5.4.1 External Interfaces

5.4.2 Quality Attributes

5.5 Other Requirements

Chapter 6

Software Design Description

6.1 Overall Description

6.1.1 Assumptions

6.1.2 Design Constraints

6.1.3 Technology Suggestion

6.2 System Architecture Design

6.2.1 Overall Architecture

6.2.2 System Architecture

6.2.3 Package Diagram

6.3 System Detailed Design

6.4 Class Specification

6.5 Data & Database Design

6.5.1 Database Design

6.5.2 Data File Design

Chapter 7

Software Testing Documentation

7.1 Overall Description

7.1.1 Test Model

7.1.2 Testing Levels

7.1.3 Testing Types

7.2 Test Plan

7.2.1 Test Stages

7.2.2 Resources

7.2.2.1 Human Resources

7.2.2.2 Environment

7.2.3 Test Milestones

7.2.4 Deliverables

7.3 Test Cases

7.4 Test Reports

Chapter 8

Release Package & User Guides

8.1 Deliverable Package

8.1.1 Source Codes & Documents

No.	Items	Sub-Items	Type	Version
Code package				
1	EduBlock	EduBlock Client	New	1.0
2	Blockchain Network	Blockchain Chaincode	New	1.0
3	OCR	Record Table Processor	New	1.0
Database				
1	Tables	accounts.sql	New	1.0
		classrooms.sql	New	1.0
		subjects.sql	New	1.0
Documents				
1	Requirement	SRS_v1.0.docx	New	1.0
2	Deployment	UserGuide_v1.0.docx	New	1.0

8.1.2 Known Issues, Limitations & Restrictions

8.2 Installation Guides

8.2.1 System Requirements

OS: any

CPU: at least 4 cores

RAM: at least 4Gb

NETWORK: required

SOFTWARE: Docker

8.2.2 Setup Files

- Dockerfile.backend
- Dockerfile.frontend
- Dockerfile.ocr

8.2.3 Installation Instruction

8.3 User Manual

8.3.1 Terms & Definitions

No.	Term	Definition
01	F.FT	Feature
02	R.ADM	Admin
03	R.STF	Staff
04	R.TCH	Teacher
05	R.STD	Student
06	R.ANY	Any role

8.3.2 System Requirements

OS: any

CPU: any

RAM: at least 1Gb

NETWORK: required

8.3.3 Application Usage

8.3.3.1 Overview

No.	Feature	Role	Note
01	Create new account	R.ADM	Each role have different behavior
02	View account list	R.ADM, R.STF	
03	View profile	R.ANY	
04	Update profile	R.ADM, R.STF	Each role have different behavior
05	Update password	R.ANY	Each role have different behavior
06	Create new classroom	R.STF	Each role have different behavior
07	View classroom list	R.STF, R.TCH, R.STD	

No.	Feature	Role	Note
08	View classroom information	R.STF, R.TCH, R.STD	
09	View students of classroom	R.STF, R.TCH, R.STD	
10	View teachers of classroom	R.STF, R.TCH, R.STD	
11	Update classroom information	R.STF	
12	Update student in classroom	R.STF	
13	Update teacher in classroom	R.STF	
14	View update request list	R.TCH	
15	Verify update request	R.TCH	
16	Request update record	R.TCH, R.STD	

8.3.3.2 Feature 01: Create new account

Description:

- Admin create account for other user usage

Details:

- R.ADM
 - Step 1: Click Account on the left navigation bar to navigate to account list page
 - Step 2: Click Create at the top left of the page to open a modal with form
 - Step 3: Input user First name, Last name and select a role for user
 - Step 4: (Optional) Click Add at the bottom left of the form to add more account and repeat from Step 1
 - Step 5: Click Create at the bottom right of the form to confirm the account creation

8.3.3.3 Feature 02: View account list

Description:

- Admin, Staff view the account list to manage account information and find reference for other operations

Details:

- R.ADM
 - Step 1: Click Account on the left navigation bar to navigate to account list page
 - Step 2: (Optional) Click Search to reveal filter options below
 - Step 2.1: Select search field on the left
 - Step 2.2: Input search text on the right

- Step 2.3: Click Search button at the right most to apply list filter
- Step 3: View list of account
- Step 4: (Optional) Click page number at the top right to view other accounts

8.3.3.4 Feature 03: View profile

Description:

- Admin, Staff view user profile
- User view personal profile

Details:

- R.ANY (Personal)
 - Step 1: Click personal card at the bottom of the Vertical Navigation bar to navigate to the profile page
- R.ADM, R.STF
 - Step 1: Click Account on the left navigation bar to navigate to account list page
 - Step 2: Look for the specific account row in table
 - Step 3: Click Details in the **Actions** column to navigate to the profile page of that account

8.3.3.5 Feature 04: Update profile

Description:

- Admin, Staff update personal profile
- Staff update Teacher, Student profile

Details

- R.ADM, R.STF (Personal)
 - Step 1: Click personal card at the bottom of the Vertical Navigation bar to navigate to the profile page
 - Step 2: Click Update in the profile section to open a modal with form
 - Step 3: Change the form data to desired value
 - Step 4: Click Confirm to save the changes.
- R.STF
 - Step 1: Click Account on the left navigation bar to navigate to account list page
 - Step 2: Look for the specific account row in table
 - Step 3: Click Update in the **Actions** column to open an update modal with form
 - Step 4: Change the form data to desired value
 - Step 5: Click Confirm to save the changes

8.3.3.6 Feature 05: Update password

Description:

- Admin update other user password
- User self update password

Details

- R.ANY (Personal)
 - Step 1: Click personal card at the bottom of the Vertical Navigation bar to navigate to the profile page
 - Step 2: Click Update password at the top right of the page to open a modal with form
 - Step 3: Input the new password
 - Step 4: Click Confirm to save the new password
- R.ADM
 - Step 1: Click Account on the left navigation bar to navigate to account list page
 - Step 2: Look for the specific account row in table
 - Step 3: Click Update password in the **Actions** column to open an update modal with form
 - Step 4: Input the new password
 - Step 5: Click Confirm to save the new password

8.3.3.7 Feature 06: Create new classroom**Description:**

- Staff Create new classroom in the system

Details

- R.STF
 - Step 1: Click Classroom on the left navigation bar to navigate to classroom list page
 - Step 2: Click Create at the top left of the page to open a modal with form
 - Step 3: Change the form data to desired value
 - Step 4: Click Confirm at the bottom right of the modal to save the created classroom

8.3.3.8 Feature 07: View classroom list**Description:**

- Staff view the list of all the classroom in the system
- Teacher view the list of all the classroom being taught by that teacher
- Student view the list of all the classroom that student taking part in

Details

- R.STF
 - Step 1: Click Classroom on the left navigation bar to navigate to classroom list page
- R.TCH, R.STD
 - Step 1: The list of classroom is in the dashboard page

8.3.3.9 Feature 08: View classroom information**Description:**

- Staff view classroom information
- Teacher view information of the classroom being taught by that teacher
- Student view information of the classroom that student taking part in

Details

- R.STF
 - Step 1: Click Classroom on the left navigation bar to navigate to classroom list page
 - Step 2: Look for the specific classroom row in table
 - Step 3: Click Details in the **Actions** column to navigate to the classroom details page
- R.TCH, R.STD
 - Step 1: Click Dashboard on the left navigation bar to navigate to classroom list page
 - Step 2: Look for the specific classroom row in table
 - Step 3: Click Details in the **Actions** column to navigate to the classroom information page

8.3.3.10 Feature 09: View students of classroom

Description:

- Staff view all the student in a specific classroom
- Teacher view all the student in the classroom being taught by that teacher
- Student view all the student in the classroom that student taking part in

Details

- R.STF, R.TCH, R.STD
 - Step 1: Follow **Feature 08** to navigate to the classroom information page
 - Step 2: Click Student which is the center tab at the top of the page to navigate to student list of that classroom

8.3.3.11 Feature 10: View teachers of classroom

Description:

- Staff view all the teacher in a specific classroom
- Teacher view all the teacher in the classroom being taught by that teacher
- Student view all the teacher in the classroom that student taking part in

Details

- R.STF, R.TCH, R.STD
 - Step 1: Follow **Feature 08** to navigate to the classroom information page
 - Step 2: Click Teacher which is right most tab at the top of the page to navigate to teacher list of that classroom

8.3.3.12 Feature 11: Update classroom information

Description:

- Staff update a specific classroom information

Details

- R.STF
 - Step 1: Follow **Feature 08** to navigate to the classroom information page
 - Step 2: Click Details which is right most tab at the top of the page to navigate to details page of that classroom
 - Step 3: Click Update at the bottom of the page to open a modal with form
 - Step 4: Change the form data to desired value
 - Step 5: Click Confirm at the bottom of the modal to save changes

8.3.3.13 Feature 12: Update student in classroom**Description:**

- Staff change the student of a specific classroom

Details

- R.STF
 - Step 1: Follow **Feature 09** to navigate to the classroom student page
 - Step 2: Look for a specific account row in the table (May skip to Step 4)
 - Step 3: Click Remove in the **Actions** column to remove student from classroom
 - Step 4: Click Add at the top left of the page to open a modal with form
 - Step 5: Change the form data to desired value
 - Step 6: Click Confirm at the bottom right of the modal to save changes

8.3.3.14 Feature 13: Update teacher in classroom**Description:**

- Staff change the teacher of a specific classroom

Details

- R.STF
 - Step 1: Follow **Feature 10** to navigate to the classroom teacher page
 - Step 2: Look for a specific account row in the table (May skip to Step 4)
 - Step 3: Click Remove in the **Actions** column to remove teacher from classroom
 - Step 4: Click Add at the top left of the page to open a modal with form
 - Step 5: Change the form data to desired value
 - Step 6: Click Confirm at the bottom right of the modal to save changes

8.3.3.15 Feature 14: View update request list

Description:

- Teacher view list of request for updating record value

Details

- R.TCH
 - Step 1: Click Request on the left navigation bar to navigate to request list page

8.3.3.16 Feature 15: Verify update request

Description:

- Teacher verify request waiting for verification

Details

- R.TCH
 - Step 1: Follow **Feature 14** to navigate to the request list page
 - Step 2: Look for the specific request row in table
 - Step 3: Click Approve or Reject to approve or reject the request

8.3.3.17 Feature 16: Request update record

Description:

- Teacher or student of same classroom request updating record for that student

Details

- R.TCH
 - Step 1: Follow **Feature 09** to navigate to student profile page
 - Step 2: Look for the record need update in the record table at the bottom of the page
 - Step 3: Click Update in the **Actions** column to open a modal with form
 - Step 4: Change the form data to desired value
 - Step 5: Click Confirm to send the request
- R.STD
 - Step 1: Click personal card at the bottom of the Vertical Navigation bar to navigate to the profile page
 - Step 2: Look for the record need update in the record table at the bottom of the page
 - Step 3: Click Update in the **Actions** column to open a modal with form
 - Step 4: Change the form data to desired value
 - Step 5: Click Confirm to send the request

8.3.4 Troubleshooting

References

Appendix

