

Criterion B

Word: 0

Outline of Program:

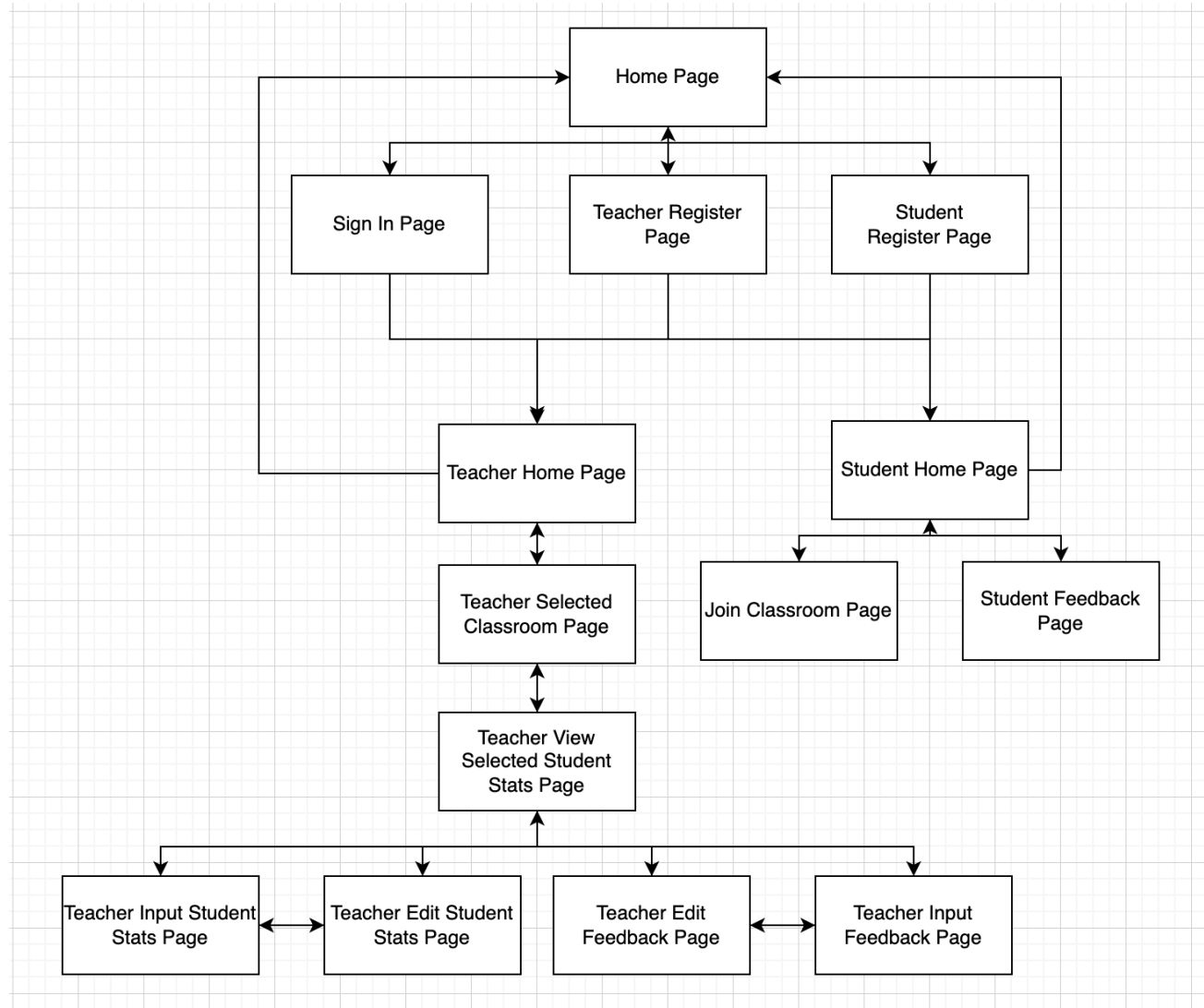


Figure 1: Showing the pages within the program

```

classDiagram
    class User {
        -email: string
        -password: string
        -loginStatus: string
        +signUp()
        +login()
        +updateProfile()
        +verifyLogin(): bool
    }
    class Student {
        -studentName: string
        -studentUniqueNo: int
        -studentAge: int
        +dateOfInput: int []
        +studentAvgSpeed: int []
        +studentAvgShotDistance: int []
        +studentChanceHit: int []
        +studentForm: String []
        +studentChanceHomeRun: int []
        +studentChanceRun3Bases: int []
        +studentChanceRun2Bases: int []
        +studentChanceRun1Base: int []
        +studentFeedback: string []
        -joinClassroom()
    }
    class Teacher {
        -teacherName: string
        -teacherUniqueNo: int
        -createNewClassroom()
        -deleteClassroom()
    }
    class Classroom {
        -className: string
        -classroomUniqueNo: int
        #ListofStudentUniqueNo: int []
        #ListofStudentName: int []
        #classAvgSpeed: int []
        #classAvgShotDistance: int []
        #classChanceHit: int []
        #classForm: String []
        #classChanceHomeRun: int []
        #classChanceRun3Bases: int []
        #classChanceRun2Bases: int []
        #classChanceRun1Base: int []
        #displayListOfStudentInClassroom()
        #selectStudent()
        #inputData()
        #createFeedback()
        -displayStudentStats()
        -displayCurrentFeedback()
    }
    class Feedback {
        -dateOfInput: int []
        -teacherFeedback: string
        #sendFeedback()
        #deleteFeedback()
        #addFeedback()
        #editFeedback()
    }
    User <|-- Student
    User <|-- Teacher
    Teacher "1" *-- "0..*" Classroom
    Classroom "1" *-- "0..*" Feedback
    Student "1" --> "0..*" Classroom
    
```

Annotations:

- Classes are blueprints to create objects
- Teacher and Students are inheritance of the User class. Therefore User class is the parent class
- Teachers can create one or many classrooms. But each classrooms can only be possessed by one teacher.
- Student does not have any access to attributes or functions that has #. Only teachers have access to those attributes or functions
- Only teachers can create feedback within a classroom to students but only if the student exist

Individual Class Functionality

Class	Functionality
User	The parent class of “Student” and “Teacher” to remove any redundancy of attributes and functions that the “Student” and “Teacher” class have in common
Student	Inheritance from the “User” class, this class contains the attributes and function of a student. Attributes of a student would contain their name, unique number, age, stats and feedback they receive from the teacher. Their main function is to join a classroom
Teacher	Inheritance from the “User” class, “Teacher” contains attributes of their name, unique number and has the main function of creating and deleting the “Classroom” class
Classroom	A composition of the “Teacher” class and aggregation of the “Student” class, the “Classroom” class’s attributes consist of classroom name, unique number and arrays of student’s unique number and statistics. Its function is to display the student’s statistics, allow teachers to manage the class and make changes to student’s statistics as well as sending students feedback
Feedback	A composition of the “Classroom” class, it contains the attributes of the date the feedback was sent and the teacher’s feedback. Its function is to allow teachers to add, delete and send feedback whilst allowing students to view all their feedback

Database Structure

Collection: Classroom

Collection	Documents	Classname	ID	Teacher Name	Student ID
Classroom	Classroom 1	New Class 1	123456	John	zJ25Jkld
					Dij18Kld
					...
	Classroom 2	New Class 2	456789	Barry	aJ25Jklg
					mij18Klk
					...

Collection: Users (Students)

Collection	Documents	Teacher?	Accuracy	Distance	Effectiveness	Speed	Date	accList	distanceList	effectList	speedList
Users	Student 1	No	0.66	60	0.75	10	17/03/2021	0.66	60	0.75	10
						
	Student 2	No	0.78	70	0.80	12	18/03/2021	0.78	70	0.80	12
						

(Continued columns)

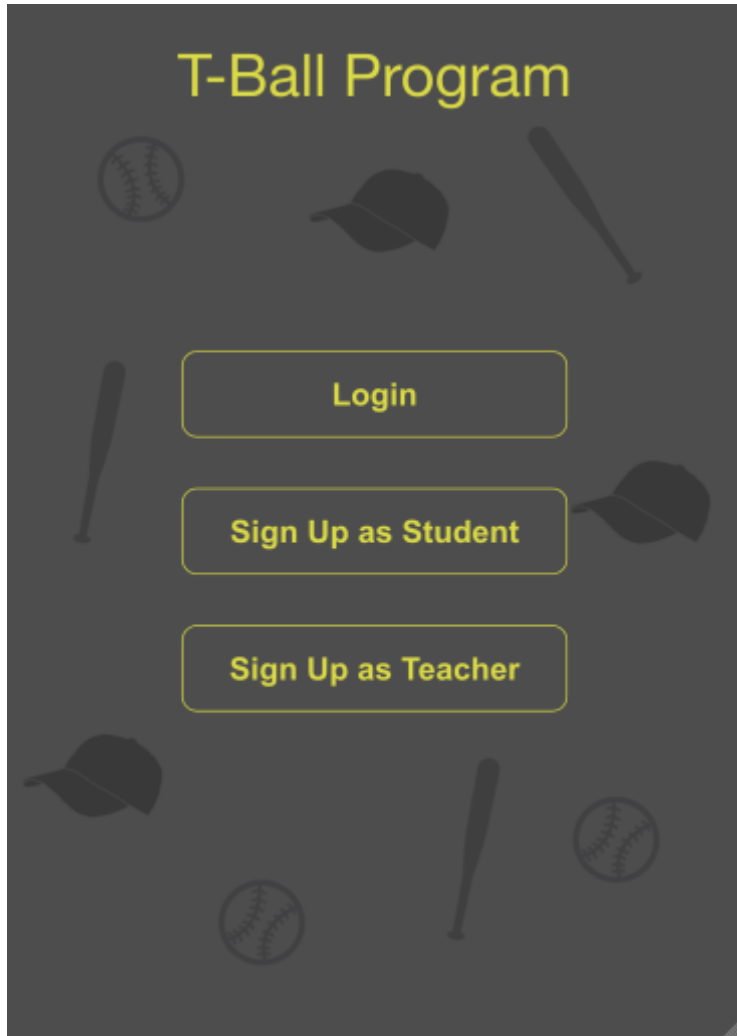
Collection	Documents	Name	Classroom ID	Feedback	Data Input From Teacher	
Users	Student 1	Bob	123456	Feedback 1	17/03/2021	1 (No. of strikes)
				15 (Time in s)
				3 (No. of base ran)
				50 (X co-ord)
				40 (Y co-ord)
		
	Student 2	Josh	123456	Feedback 2	18/03/2021	1 (No. of strikes)
				12 (Time in s)
				3 (No. of base ran)
				60 (X co-ord)
				50 (Y co-ord)
		

Collection: Users (Teachers)

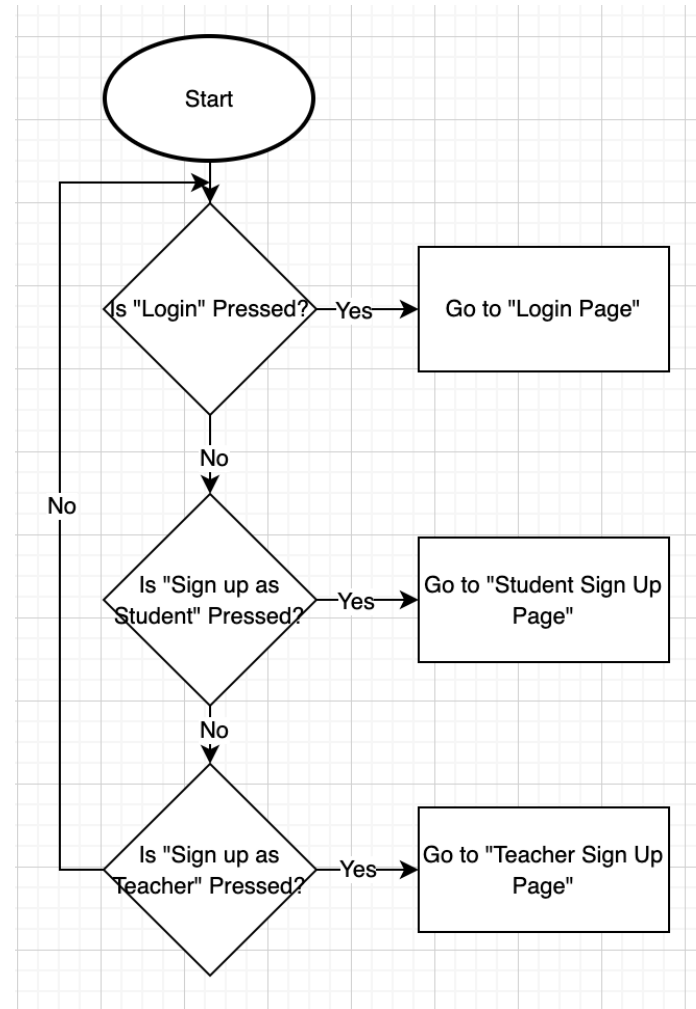
Collection	Documents	Teacher?	Name	Number of Class	Classroom ID
Users	Teacher 1	Yes	John	3	123456
					193248
					...
	Teacher 2	Yes	Bob	2	656465
					...

Design of Program:

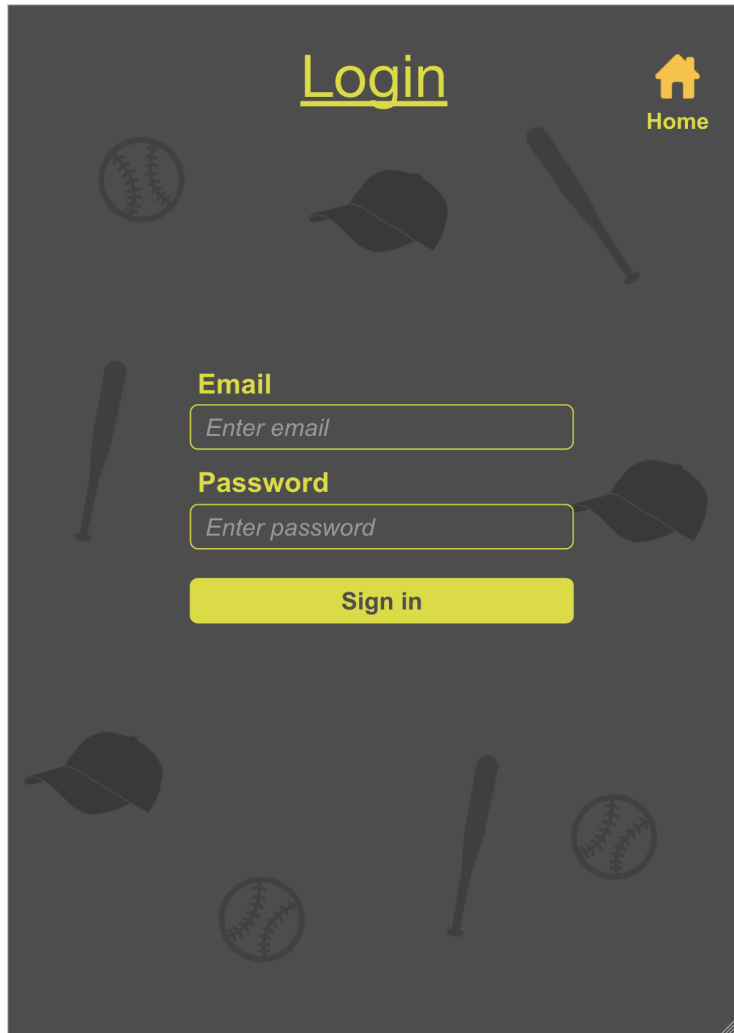
Home Page



Flowchart

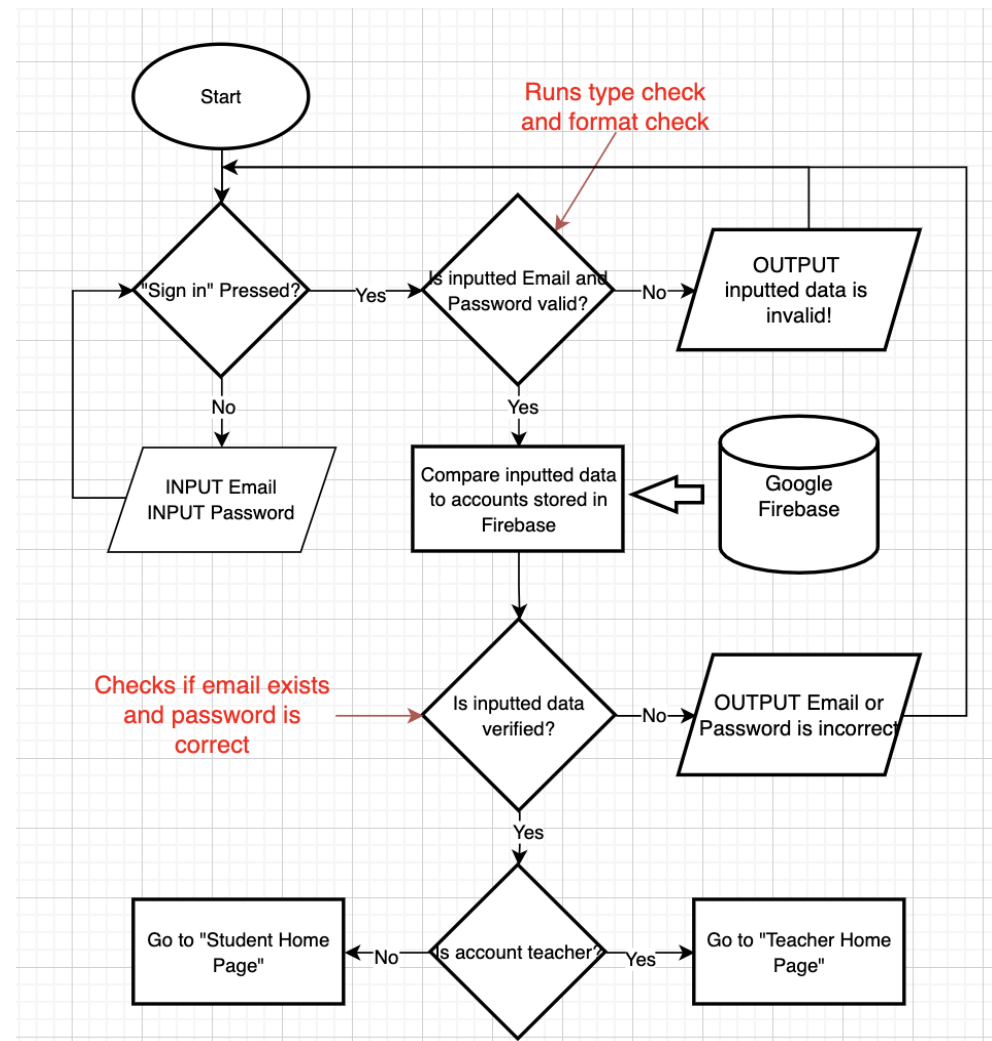


Sign In Page




The Sign In Page features a dark gray background with sports-themed icons (baseball, baseball bat, and baseball cap) scattered around. At the top left, the word "Login" is written in a large, yellow, underlined font. To its right is a yellow house icon with the word "Home" below it. Below the "Login" text, there are two input fields: "Email" with a placeholder "Enter email" and "Password" with a placeholder "Enter password". Both fields have a yellow border. Below these fields is a yellow "Sign in" button. The overall layout is clean and modern.

Flowchart



Register Page

Teacher/Student Sign Up

 Home

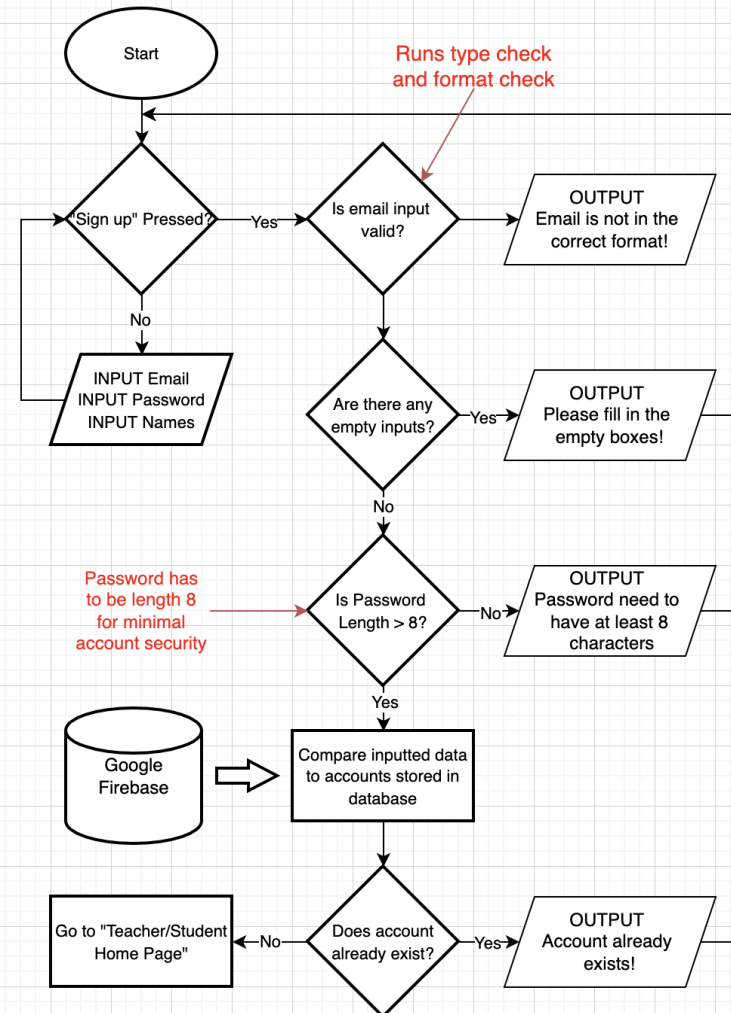
Name

Email

Password

Sign Up

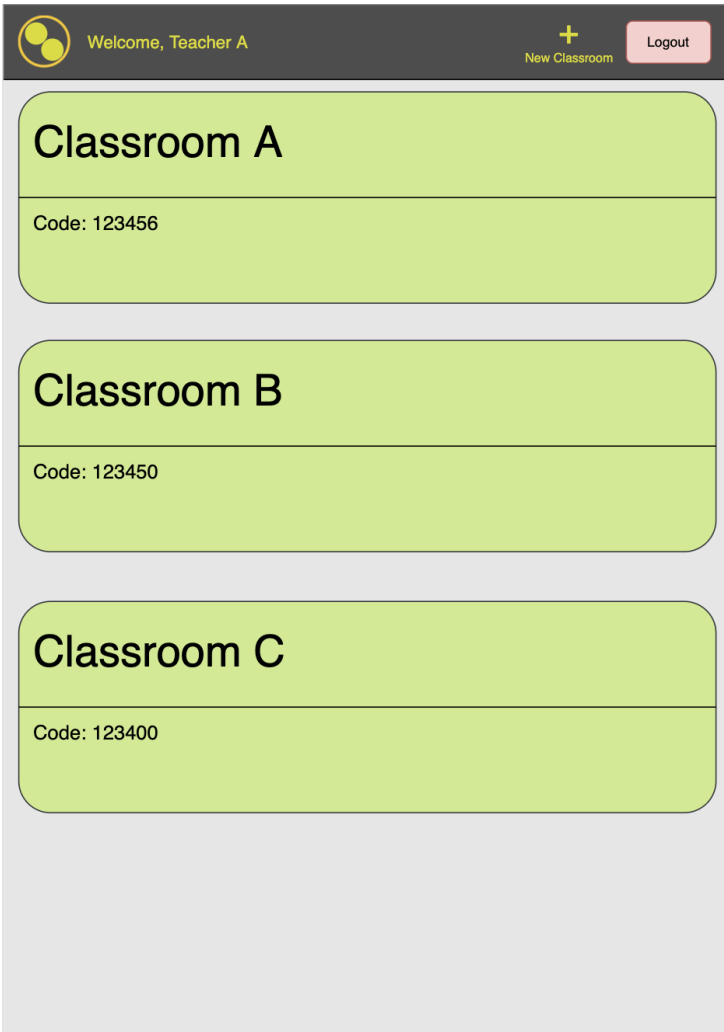
Flowchart



Test table 1: Test table for “Home Page”, “Sign In Page”, and “Register Page”

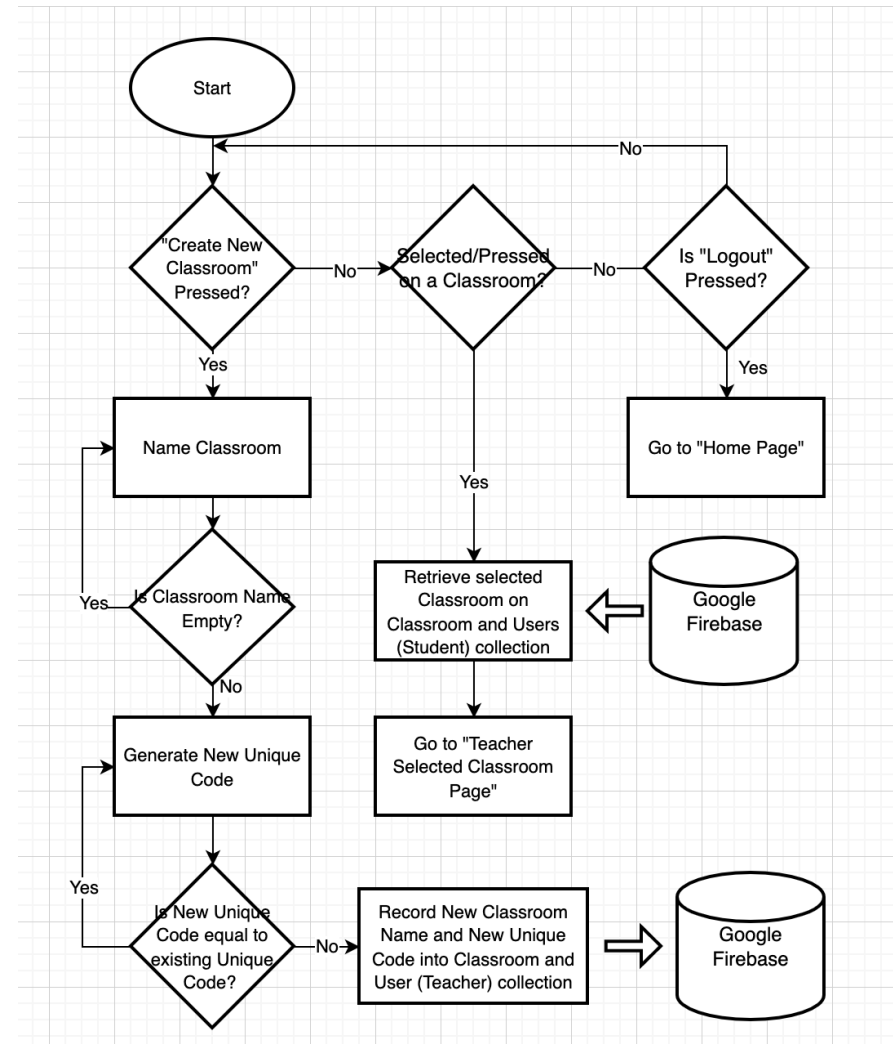
Success Criteria	Test Action	Method	Example inputs	Expected Outcome
1, 3 & 9	Able to log into the system	Press “Login” from <i>Home Page</i> and input email and password in textbox and press “Sign In” button	“teachera@gmail.com” “12345678”	“Successfully logged in”
			“teachera@gmail.com” “12502142”	“Invalid password”
			“teachera\$gmail.com” “12345678”	“Inputted data is invalid!”
1, 2 & 9	Able to sign up in the system	Press “Sign Up as Teacher” or “Student” from <i>Home Page</i> and input name, email and password and press “Sign up” button	“Teacher B” “teacherb@gmail.com” “12345678”	Go to “Teacher Home Page”
			“Teacher A” “teachera@gmail.com” “12345678”	“Account already exists!”
			“Student” “studenta@gmail.com” “1234567”	“Password need to be at least 8 characters”
			“” “” “” “”	“Please fill in the empty boxes!”

Teacher Home Page

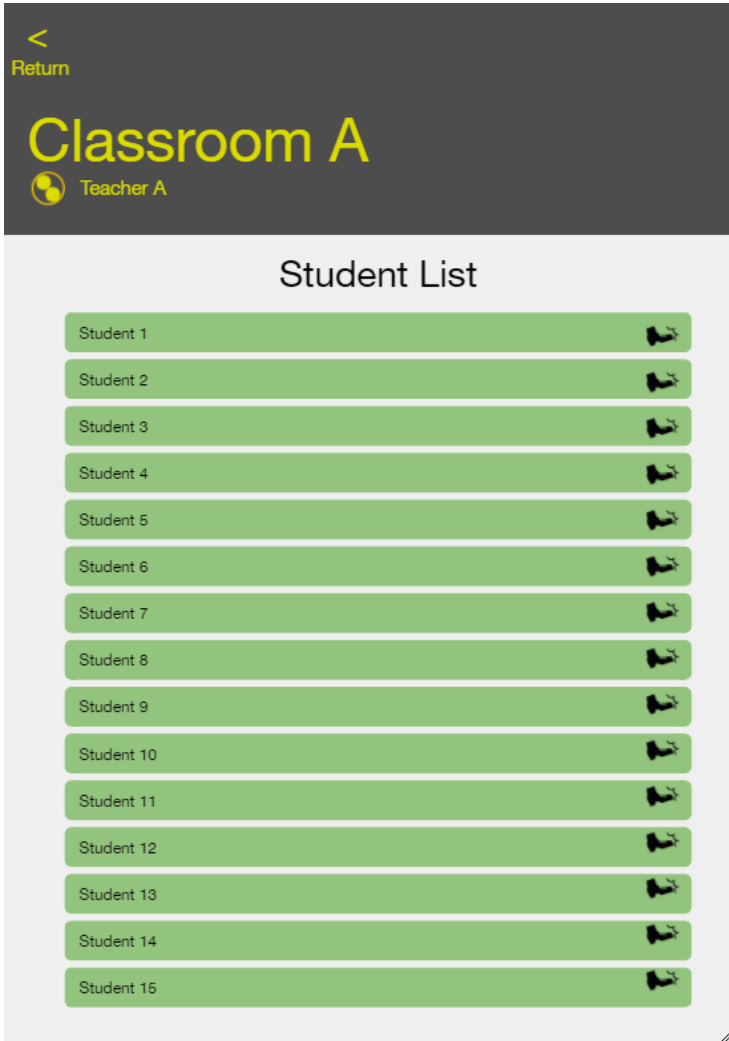


The mockup shows a dark header bar with a logo, a welcome message 'Welcome, Teacher A', a '+ New Classroom' button, and a 'Logout' button. Below the header are three light green classroom cards. Each card has a title (Classroom A, B, C) and a code (123456, 123450, 123400). The cards are set against a light gray background.

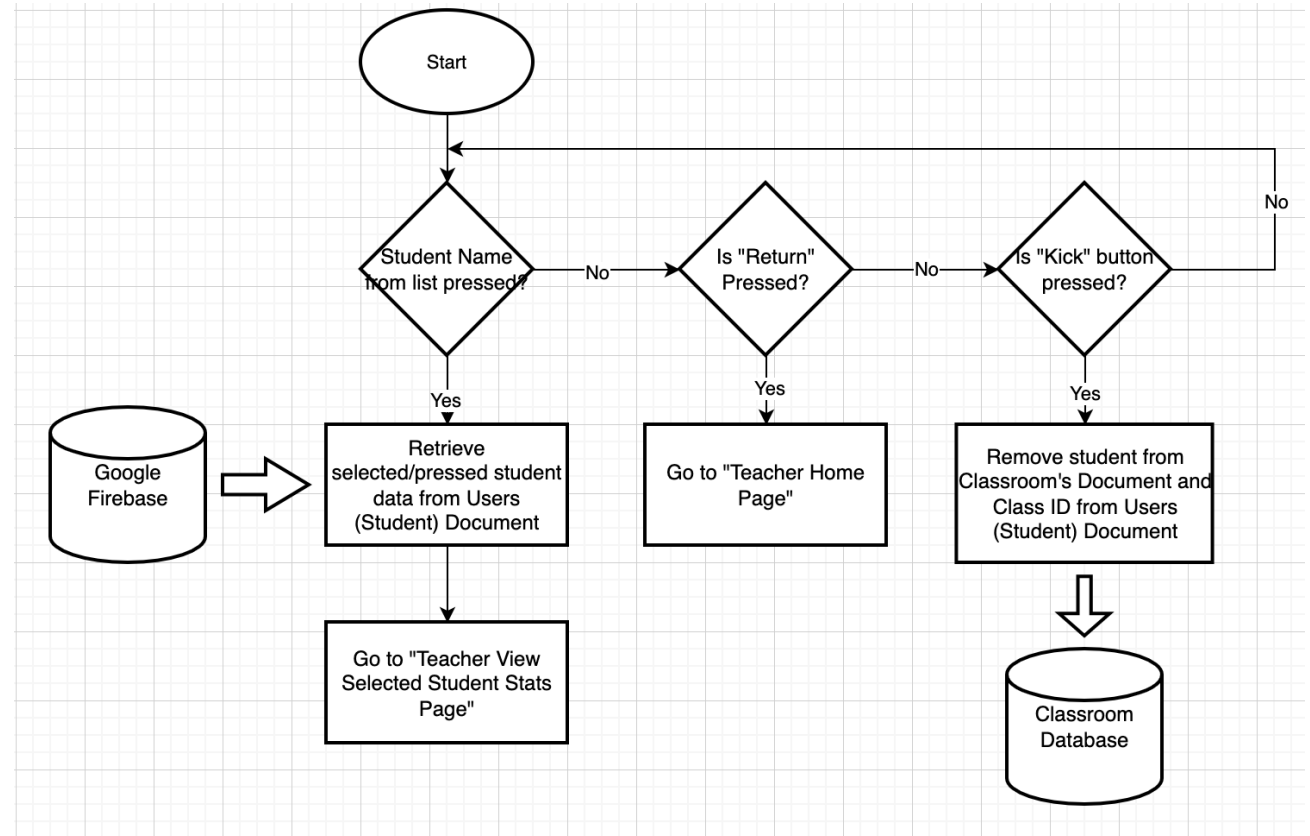
Flowchart



Teacher Selected Classroom Page



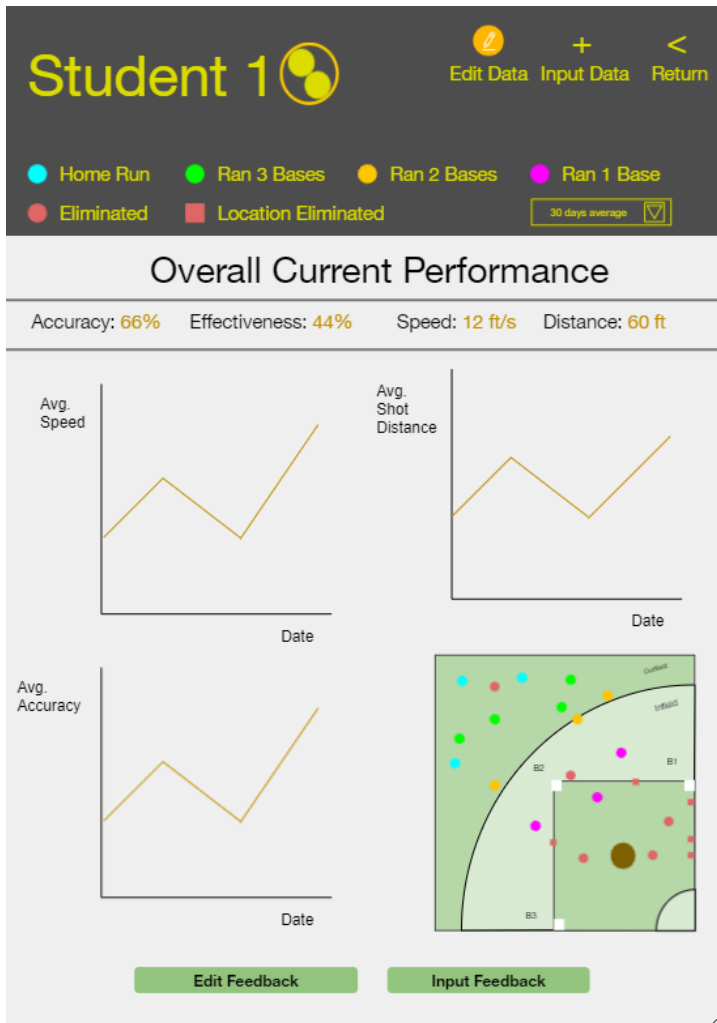
Flowchart



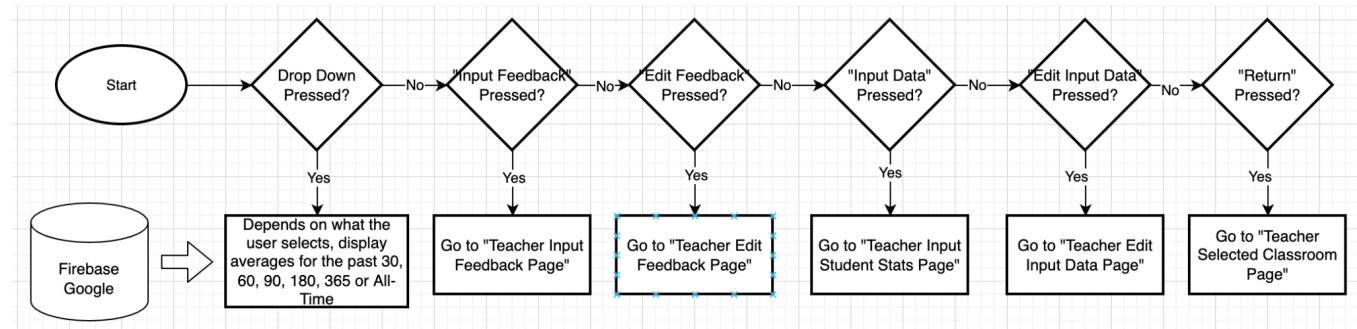
Test table 2: Test table for “Teacher Home Page” and “Teacher Selected Classroom Page”

Success Criteria	Test Action	Method	Example inputs	Expected Outcome
5 & 9	Teachers are able to create new classrooms	By pressing “New Classroom” button, fill in the name box and press “Create” to make new classroom	“Classroom A”	Go to <i>Teacher Selected Classroom Page</i>
			“”	“Please fill in the empty spot”
5	Redirect to correct classroom pages when teacher select a classroom	By pressing on the classroom boxes in the list of classrooms	Press “Classroom A”	Retrieve information on Classroom A in Classroom collection and print correct info on <i>Teacher Selected Classroom Page</i>
5	Teachers are able to remove t-ball players from classroom	By pressing “Kick” button	Press “Kick”	T-ball player removed from Classroom A’s document with the Classroom collection
7 & 9	Able to see student’s performance	By pressing in the student’s box from the list	Press “Student 1”	Retrieve student’s data from Users (Student) collection and go to <i>Teacher View Selected Students Stats Page</i>

Teacher View Selected Student Stats Page



Flowchart



Test table 3: Test table for “Teacher View Selected Student Stats Page”

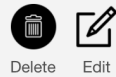
Success Criteria	Test Action	Method	Example inputs	Expected Outcome
5	Teachers are able to input data for t-ball players	By pressing “Input Data” button	Press “Input Data”	Go to <i>Teacher Input Student Stats Page</i>
5	Teachers are able to edit input data for t-ball players	By pressing “Edit Data” button	Press “Edit Data”	Go to <i>Teacher Edit Student Stats Page</i>
5	Teachers are able to input feedback for t-ball players	By pressing “Input Feedback” button	Press “Input Feedback”	Go to <i>Teacher Input Feedback Page</i>
5	Teachers are able to edit feedback for t-ball players	By pressing “Edit Feedback” button	Press “Edit Feedback”	Go to <i>Teacher Edit Feedback Page</i>
7 & 9	Teachers are able to view data in the form of numbers and graphs including the average percentage accuracy and effectiveness as well as the average speed run and batting in the past 30, 60, 90, 180, 365 days or all-time depending on the selected time period	By pressing Drop Down Box and selecting the time period in which the teacher wants to view	“30 days”	Retrieve Student’s data from Users (Student) Collection and filter data to display averages only for the past 30 days
			“60 days”	Retrieve Student’s data from Users (Student) Collection and filter data to display averages only for the past 60 days

Teacher Edit Student Stats Page

Edit Input Data

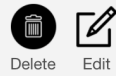
<
Return

Data Input 1



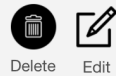
Date: DD/MM/YY

Data Input 2



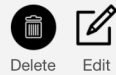
Date: DD/MM/YY

Data Input 3



Date: DD/MM/YY

Data Input 4



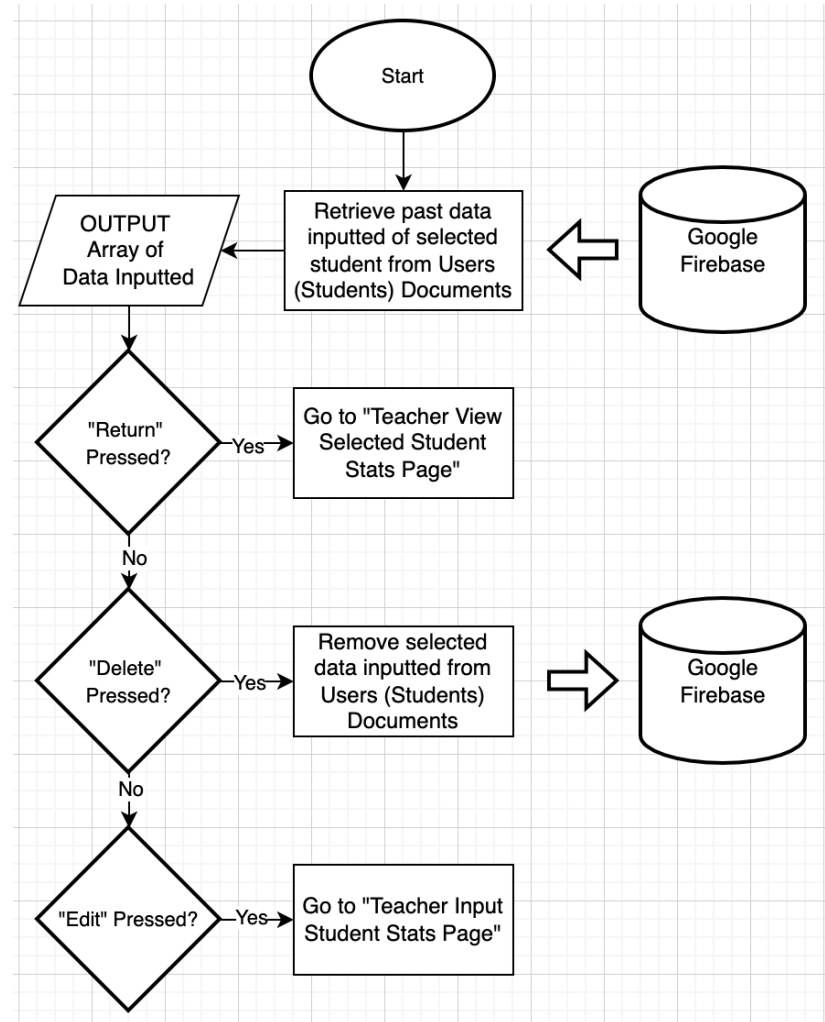
Date: DD/MM/YY

Data Input 5



Date: DD/MM/YY

Flowchart



Teacher Input Student Stats Page

Student 1

☒ Submit
 ☒ Discard

No. of Base Ran

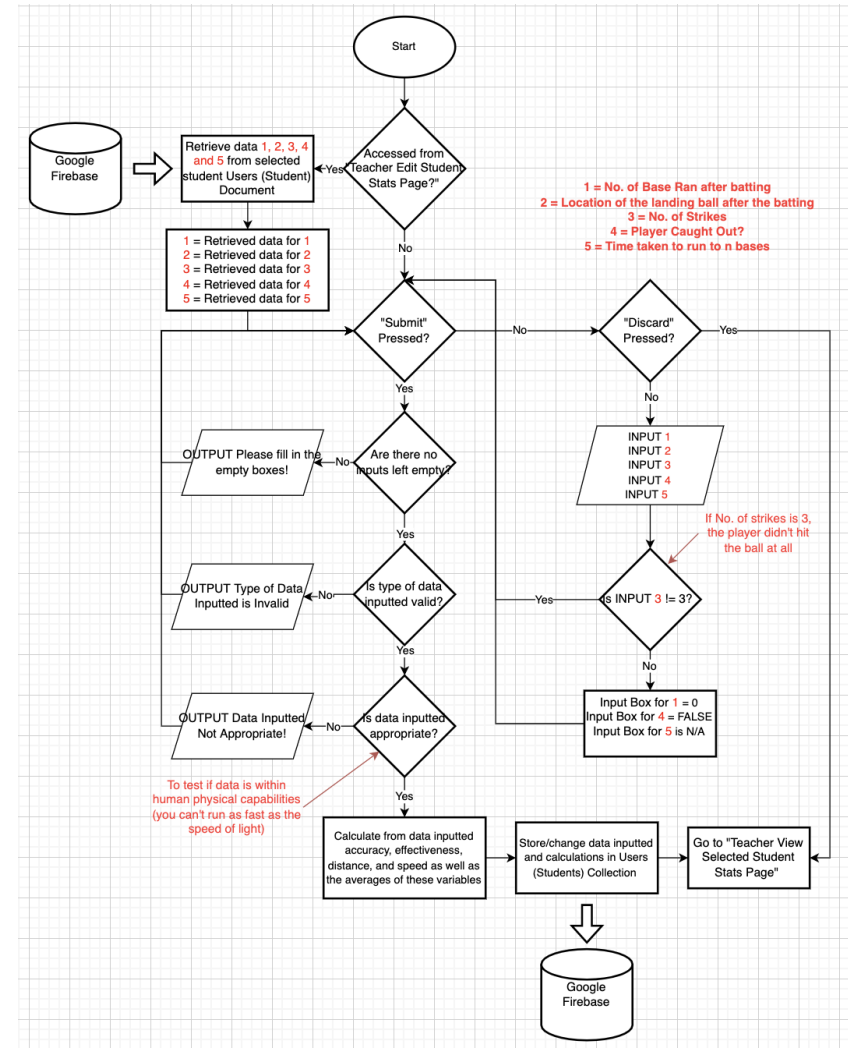
Time Taken to Run

Ball Location After Batting

Player Caught Out?

No. of Strikes

Flowchart



Test table 4: Test table for “Teacher Edit Student Stats Page” and “Teacher Input Student Stats Page”

Success Criteria	Test Action	Method	Example inputs	Expected Outcome
5	Teachers are able to delete student’s statistics	By pressing “Delete” button	Press “Delete”	Remove selected data inputted from Users (Student) Documents
5, 6 & 9	Teachers are able to input data which are then validated	By filling in the boxes and pressing “submit” button once done <u>Key:</u> <i>1 = No. of Base Ran after batting</i> <i>2 = Location of the landing ball after the batting</i> <i>3 = No. of Strikes</i> <i>4 = Player Caught Out?</i> <i>5 = Time taken to run to n bases</i>	1. “0” [<i>Inputs Blocked</i>] 2. “(-10,-10)” 3. “3” 4. “False” [<i>Inputs Blocked</i>] 5. “N/A” [<i>Inputs Blocked</i>]	***Calculate data inputted, store data inputted and calculations in Users (Students) Collection, and go back to <i>Teacher View Selected Student Stats Page</i>
			1. “3” 2. “(100,100)” 3. “1” 4. “False” 5. “0:30”	***
			1. “3” 2. “(100,100)” 3. “1” 4. “False” 5. “0:01”	“Data Inputted Not Appropriate!”
			1. “asdf” 2. “(100,100)” 3. “1” 4. “False” 5. “1:00”	“Type of data inputted is incorrect!”

5	Teachers are able to edit student's statistics	By pressing "Edit" Button	Press "Edit"	Redirects to "Teacher Input Student Stats Page" where selected data inputted are copied into the input boxes, ready to be edited. Once completed, re-calculation of changes are made and the changes replace the current selected data inputted on the database.
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Teacher Edit Feedback Page

Edit Feedback

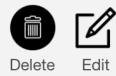
<
Return

Feedback 1



Date: DD/MM/YY

Feedback 2



Date: DD/MM/YY

Feedback 3



Date: DD/MM/YY

Feedback 4



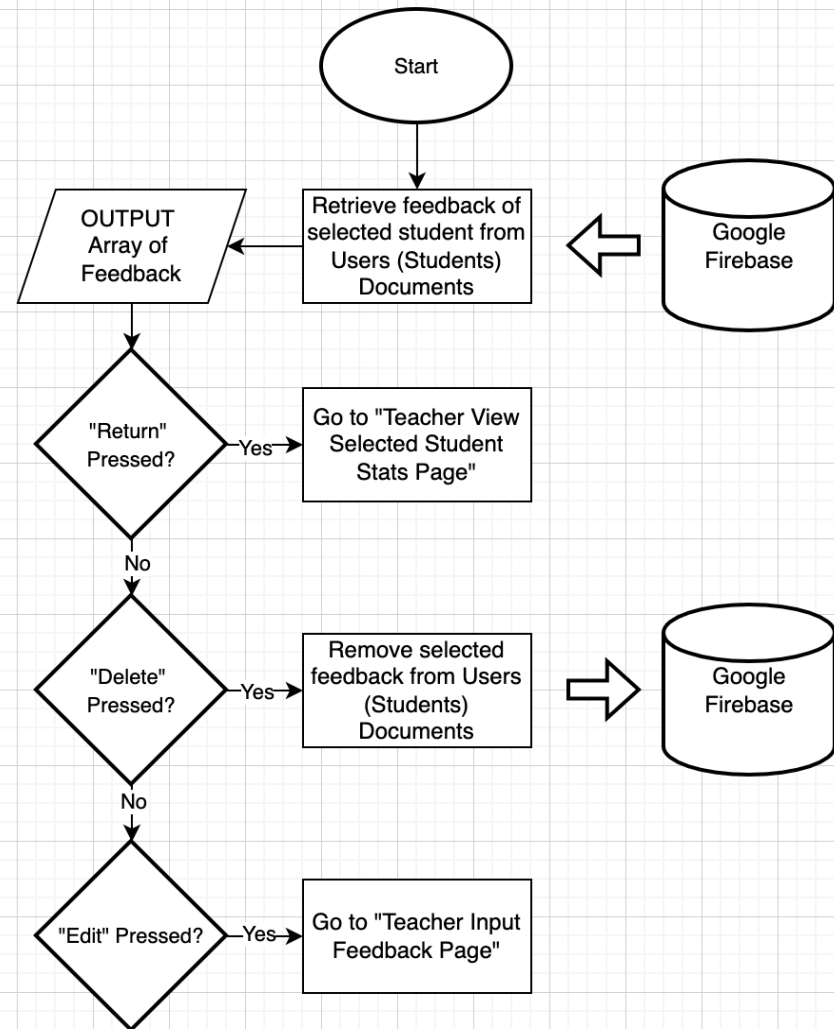
Date: DD/MM/YY

Feedback 5



Date: DD/MM/YY

Flowchart



Teacher Input Feedback Page

Input/Edit Feedback

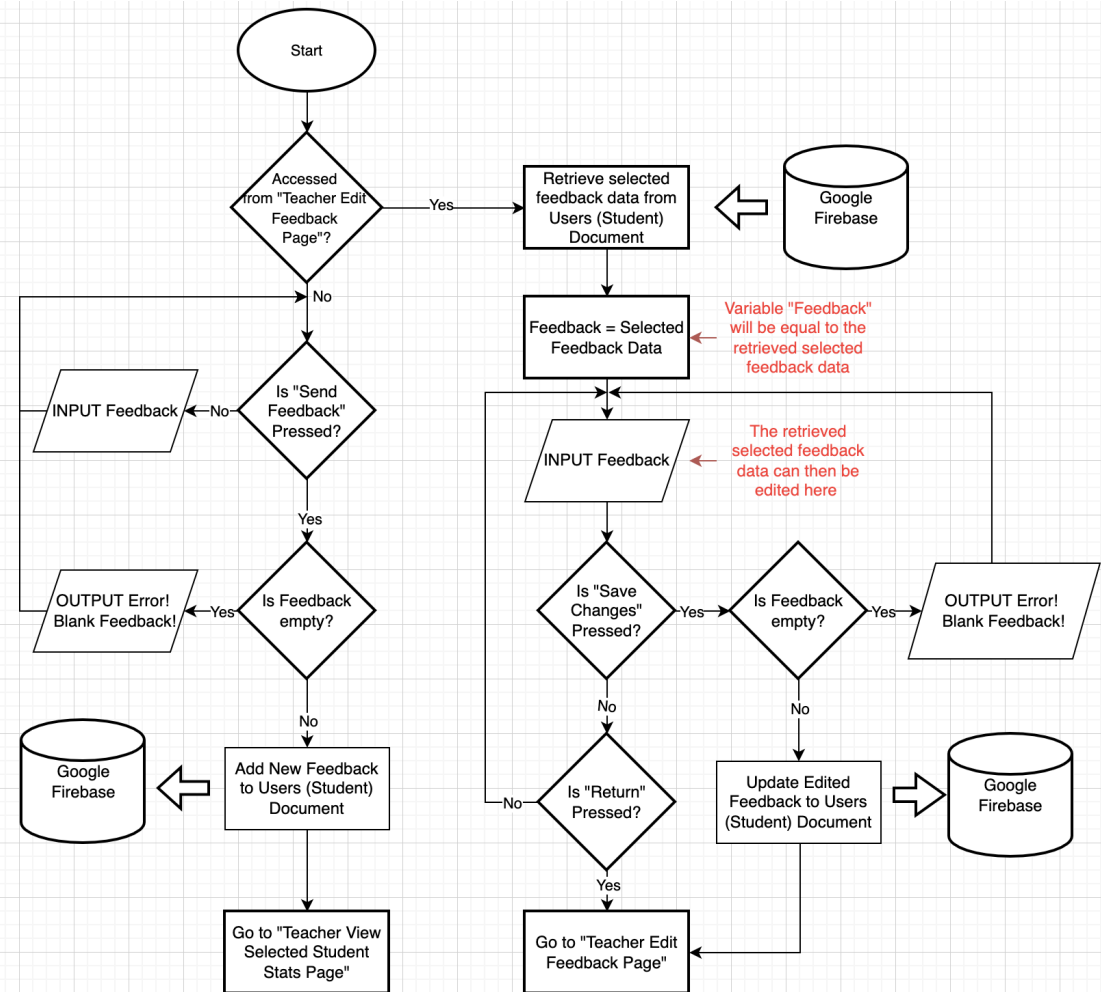
< Return

Type feedback here....

Date: DD/MM/YY

Send Feedback/Save Changes

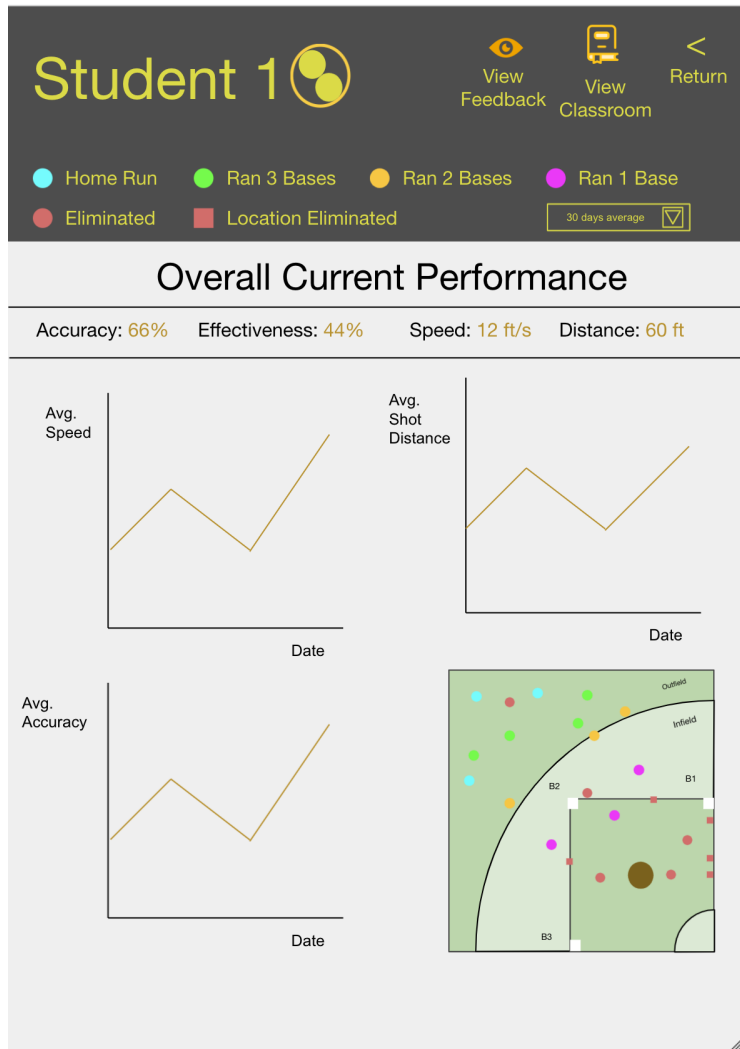
Flowchart



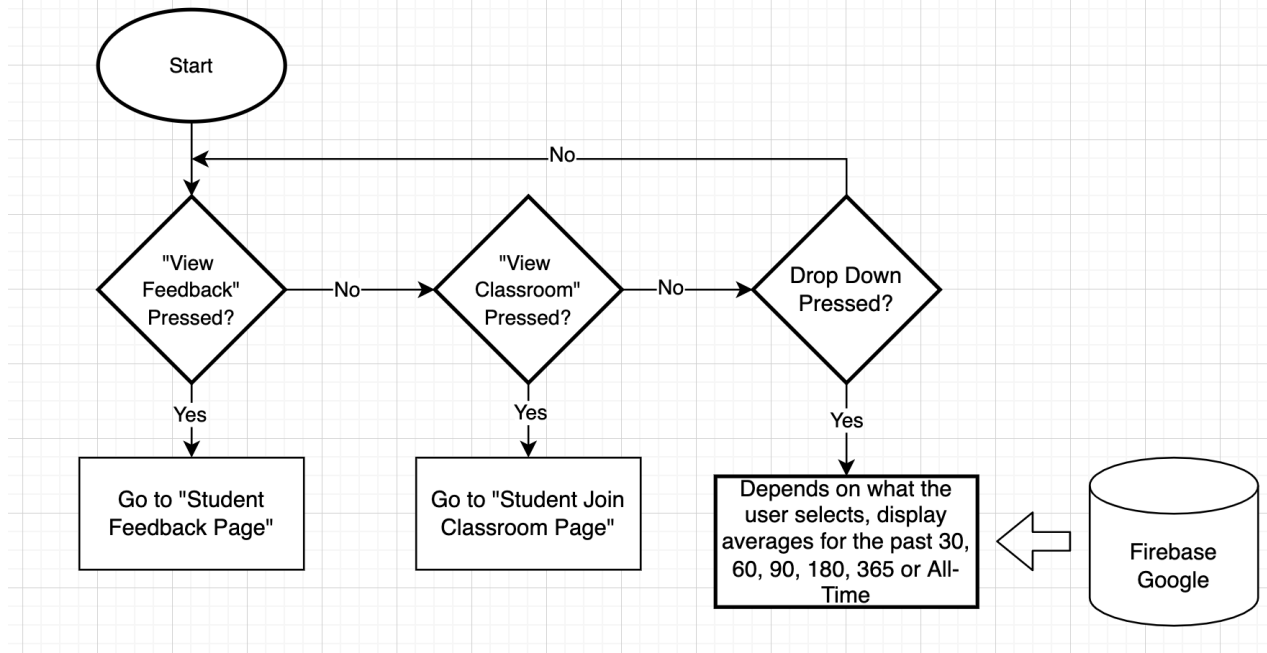
Test table 5: Test table for “Teacher Edit Feedback Page” and “Teacher Input Feedback Page”

Success Criteria	Test Action	Method	Example inputs	Expected Outcome
5	Teachers are able to edit or delete feedbacks	By pressing “Delete” button to delete or “Edit” button to edit	Press “Delete”	Remove feedback stored on Users (Student) Documents
			“You did very well this week with improvement ✕ Y and strength ✕ X. Keep up the good work!”	Update Edited Feedback to Users (Student) Documents
			“”	“Error! Blank Feedback!”
5 & 9	Teachers are able to input feedback	By pressing “Send Feedback”	Press “Send Feedback”	Add New Feedback to Users (Student) Document


Student Home Page





Flowchart



Join Classroom Page

 Student 1

 New Classroom

 Return

Classroom A

Code: 123456

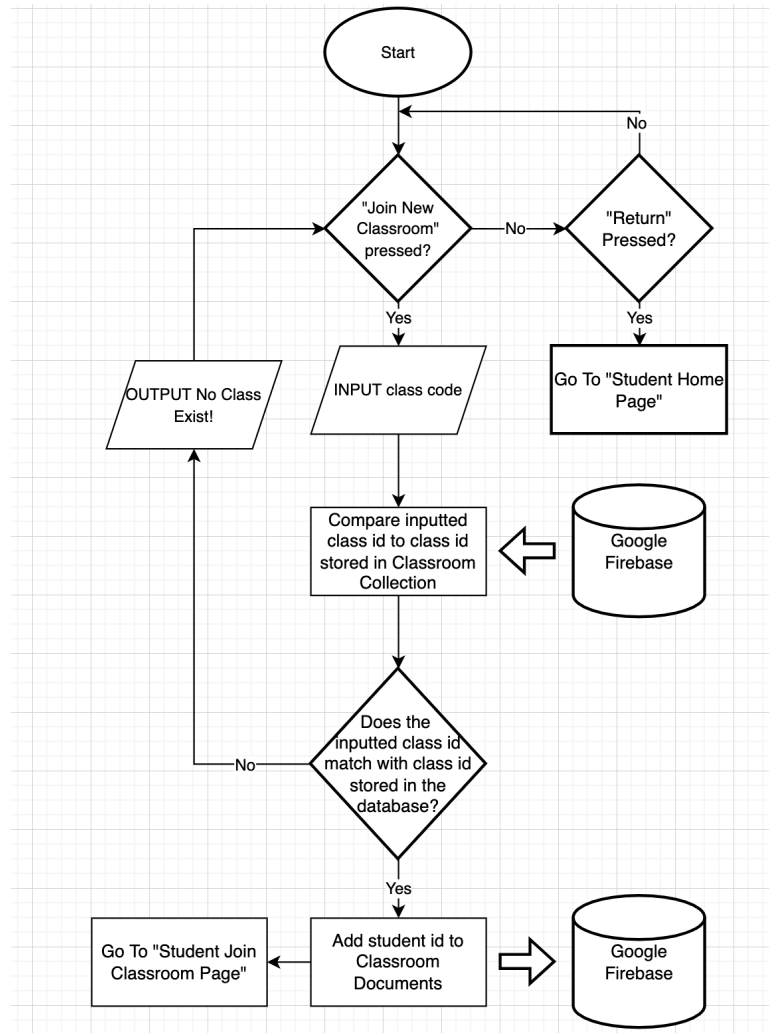
Classroom B

Code: 123450

Classroom C

Code: 123400

Flowchart



Student Feedback Page

Feedback

[< Return](#)

Feedback 1

Date: DD/MM/YY

Feedback 2

Date: DD/MM/YY

Feedback 3

Date: DD/MM/YY

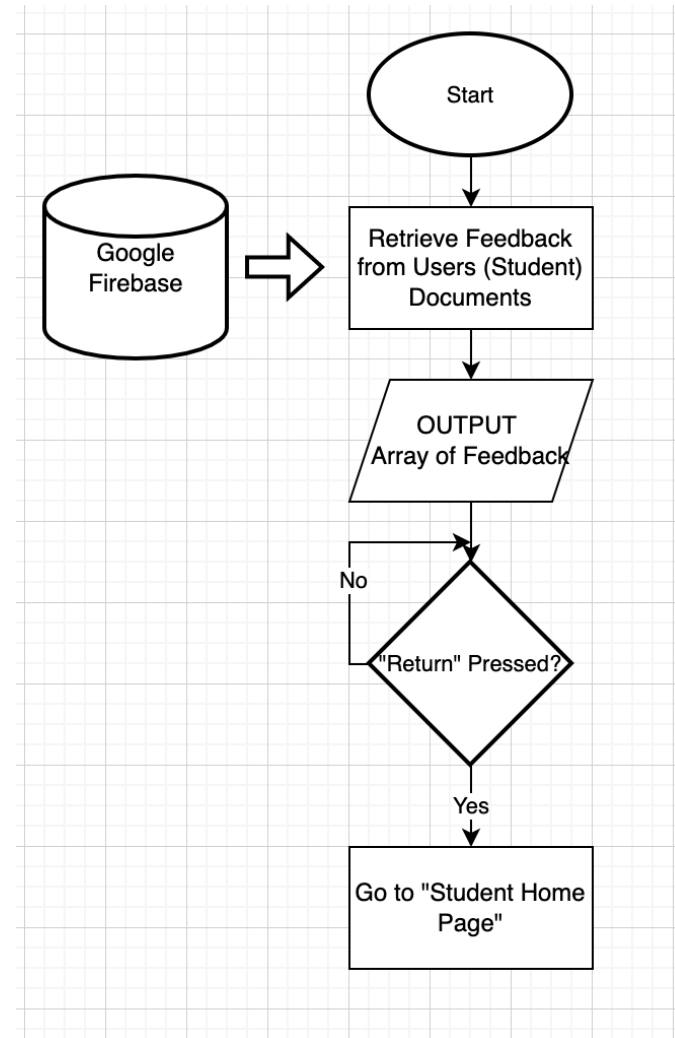
Feedback 4

Date: DD/MM/YY

Feedback 5

Date: DD/MM/YY

Flowchart



Test table 6: Test table for “Student Home Page”, “Student Join Classroom Page”, and “Student Feedback Page”

Success Criteria	Test Action	Method	Example inputs	Expected Outcome
4	Students are able to join new classroom	By pressing “Join New Classroom” button, fill in the input code box and press “Join” to join new classroom	“123456”	“You’ve joined Classroom A”
			“184324”	“Classroom does not exist”
			“”	“Please fill in the empty spot”
8	Students are able to see feedback	By pressing “View feedback” button	Press “View feedback” button	Retrieve information on student feedback in Users (Student) Document and go to <i>Student Feedback Page</i>