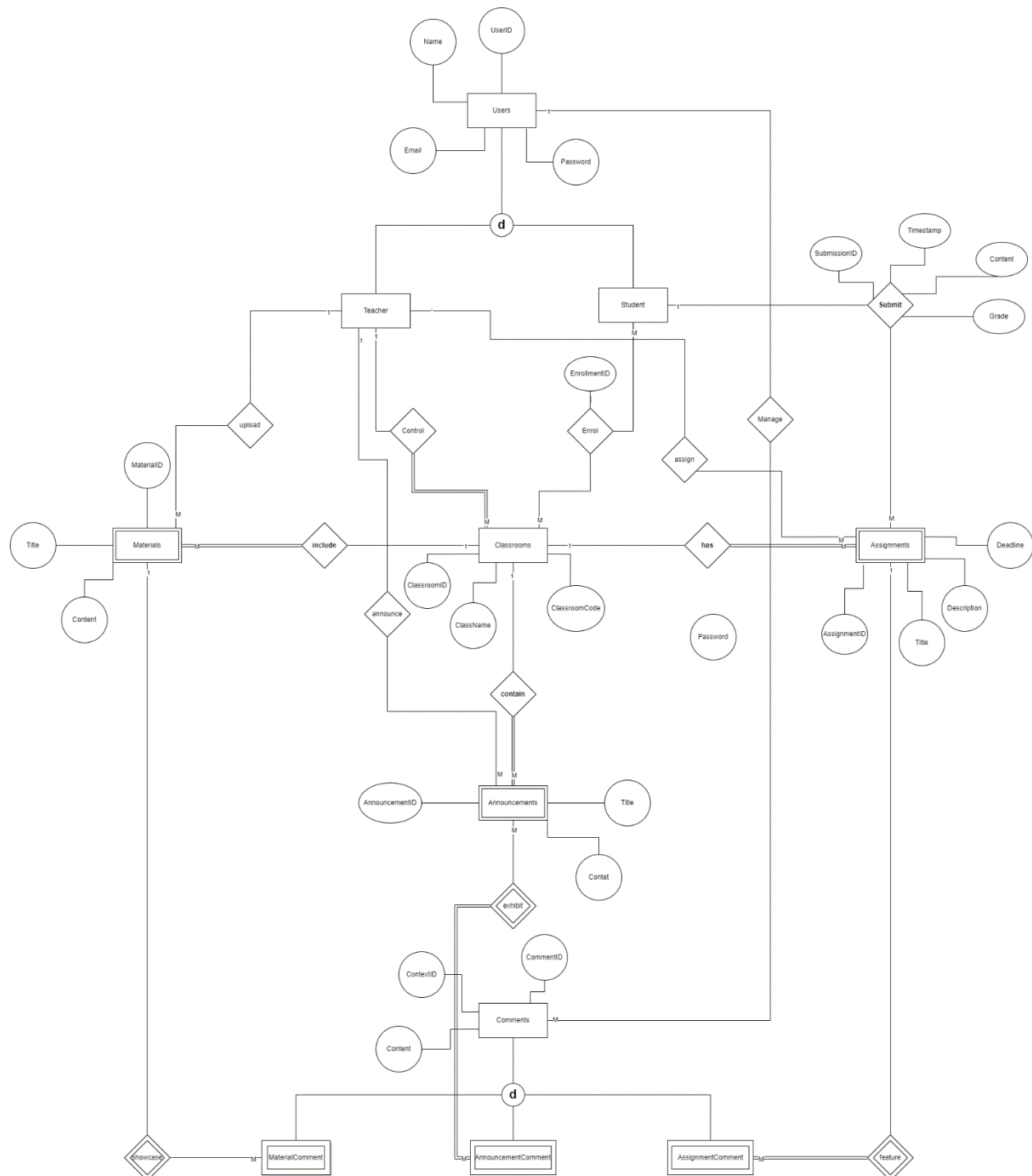


Name: Muhammad Mahad Sheikh

Section: SE-P

Title: Database Lab Final Project

Enhanced ERD



Mapped Schemas

```
CREATE TABLE Users (  
    UserID INT IDENTITY(1,1) PRIMARY KEY,  
    Name VARCHAR(100),  
    Email VARCHAR(100),  
    Password VARCHAR(100),  
    UserType VARCHAR(50)  
);
```

```
CREATE TABLE Classrooms (  
    ClassroomID INT IDENTITY(1,1) PRIMARY KEY,  
    ClassroomCode VARCHAR(100),  
    ClassName VARCHAR(100),  
    TeacherID INT,  
    FOREIGN KEY (TeacherID) REFERENCES Users(UserID)  
);
```

```
CREATE TABLE Assignments (  
    AssignmentID INT IDENTITY(1,1) PRIMARY KEY,  
    ClassroomID INT,  
    Title VARCHAR(100),  
    Description TEXT,  
    Deadline DATETIME,  
    FOREIGN KEY (ClassroomID) REFERENCES Classrooms(ClassroomID)  
);
```

```
CREATE TABLE Announcements (  
    AnnouncementID INT IDENTITY(1,1) PRIMARY KEY,  
    ClassroomID INT,  
    Title VARCHAR(100),  
    Content TEXT,  
    FOREIGN KEY (ClassroomID) REFERENCES Classrooms(ClassroomID)  
);
```

```
CREATE TABLE Materials (  
    MaterialID INT IDENTITY(1,1) PRIMARY KEY,  
    ClassroomID INT,  
    Title VARCHAR(100),  
    Content TEXT,  
    FOREIGN KEY (ClassroomID) REFERENCES Classrooms(ClassroomID)  
);
```

```
CREATE TABLE Enrollments (  
    EnrollmentID INT IDENTITY(1,1) PRIMARY KEY,  
    StudentID INT,  
    ClassroomID INT,  
    FOREIGN KEY (StudentID) REFERENCES Users(UserID),  
    FOREIGN KEY (ClassroomID) REFERENCES Classrooms(ClassroomID)  
);
```

```
CREATE TABLE Submissions (  
    SubmissionID INT IDENTITY(1,1) PRIMARY KEY,  
    AssignmentID INT,  
    StudentID INT,  
    Content TEXT,  
    Timestamp DATETIME,  
    Grade INT,  
    FOREIGN KEY (AssignmentID) REFERENCES Assignments(AssignmentID),  
    FOREIGN KEY (StudentID) REFERENCES Users(UserID)  
);
```

```
CREATE TABLE Comments (  
    CommentID INT IDENTITY(1,1) PRIMARY KEY,  
    UserID INT,  
    Content TEXT,  
    ContextID INT,  
    ContextType VARCHAR(50),  
    FOREIGN KEY (UserID) REFERENCES Users(UserID),  
);
```

Procedures

What these procedures do is delete all associated comments when an assignment, announcement and material is deleted.

```
--DROP PROCEDURE DeleteAssignment;

GO
CREATE PROCEDURE DeleteAssignment
    @AssignmentID INT
AS
BEGIN
    -- Delete comments associated with the assignment
    DELETE FROM Comments
    WHERE ContextType = 'Assignment' AND ContextID = @AssignmentID;

    -- Delete submissions associated with the assignment
    DELETE FROM Submissions
    WHERE AssignmentID = @AssignmentID;

    -- Delete the assignment
    DELETE FROM Assignments
    WHERE AssignmentID = @AssignmentID;
END;

--DROP PROCEDURE DeleteAnnouncement;

GO
CREATE PROCEDURE DeleteAnnouncement
    @AnnouncementID INT
AS
BEGIN
    -- Delete comments associated with the assignment
    DELETE FROM Comments
    WHERE ContextType = 'Announcement' AND ContextID = @AnnouncementID;

    -- Delete the assignment
    DELETE FROM Announcements
    WHERE AnnouncementID = @AnnouncementID;
END;
```

```
--DROP PROCEDURE DeleteMaterial;

CREATE PROCEDURE DeleteMaterial
    @MaterialID INT
AS
BEGIN
    -- Delete comments associated with the assignment
    DELETE FROM Comments
    WHERE ContextType = 'Material' AND ContextID = @MaterialID;

    -- Delete the assignment
    DELETE FROM Materials
    WHERE MaterialID = @MaterialID;
END;
```

Description

1. Introduction:

The Google Classroom application is an online platform created to facilitate collaboration and learning between educators and learners. It provides two distinct perspectives: one for instructors and another for pupils. This report presents an overview of the features and functionality of the Google Classroom application, focusing on these two viewpoints.

2. Teacher View:

2.1 Class Management:

Educators possess the capability to establish, erase, and modify classes. They can create a virtual environment where they can interact with their students.

2.2 Assignments:

Instructors can generate assignments with specified deadlines. They can define the title, description, and due date for each task. Learners can submit their completed assignments, and instructors can evaluate and grade them.

2.3 Announcements:

Teachers can share important information with their students by creating announcements. These updates encompass class-related activities, events, or modifications.

2.4 Materials:

Educators have the option to upload and distribute study materials such as documents, presentations, or links. These resources serve as reference materials for students to access and review outside of the classroom.

2.5 Submissions:

For each assignment, teachers can access a compilation of student submissions. They can evaluate and grade these submissions based on predetermined criteria. The grading system allows instructors to provide feedback and assess students' work.

2.6 Comments:

Assignments, announcements, and materials all allow for comments. Teachers can view and remove comments made by students, fostering discussion and interaction within the class.

3. Student View:**3.1 Class Enrollment:**

Students can enroll in classes by joining using a specific class code provided by their teachers. This functionality grants students access to class content and enables participation in learning activities.

3.2 Assignments:

Learners can view and complete assignments assigned by their instructors. They have the ability to submit their finished work for assessment and receive grades and feedback.

3.3 Announcements:

Students can access announcements posted by their teachers. These announcements relay vital updates, reminders, or supplementary instructions relevant to the class.

3.4 Materials:

Study materials uploaded by instructors are available for students to access. These materials serve as references and resources to support their learning beyond regular class hours.

3.5 Comments:

Students can actively engage in discussions by leaving comments on assignments, announcements, and materials. However, they can only delete their own comments, allowing them control over their contributions to the class discussion.

3.6 Submission Resubmission:

If permitted by the instructor, students have the option to resubmit their assignments. This feature empowers students to enhance their work based on the feedback received, thereby enriching their learning experience.

4. Conclusion:

The Google Classroom application presents a comprehensive platform for teachers and students to engage in online learning and collaboration. The teacher view encompasses features for managing classes, creating assignments, making announcements, and sharing materials. The student view enables class enrollment, assignment submission, access to announcements and materials, and active participation through comments. Overall, the Google Classroom application enhances the teaching and learning experience by facilitating effective communication, assignment management, and resource sharing within a digital classroom environment.

Connected SQL Studio

1. User Data:

A table called "Users" was generated with fields for UserID, Name, Email, Password, and UserType. This table retains information concerning application users, encompassing teachers and students.

2. Classroom Data:

The creation of a table named "Classrooms" facilitated the administration of virtual classrooms. It encompassed attributes such as ClassroomID, ClassroomCode, ClassName, and TeacherID. The TeacherID serves as a reference to the UserID of the teacher responsible for the class.

3. Assignment Data:

For the purpose of managing assignments, an "Assignments" table was established. It comprised columns for AssignmentID, ClassroomID, Title, Description, and Deadline. The ClassroomID field relates to the respective class's ClassroomID.

4. Announcement Data:

To store announcements, an "Announcements" table was introduced. It comprised fields including AnnouncementID, ClassroomID, Title, and Content. The ClassroomID field acts as a reference to the ClassroomID associated with the announcement.

5. Material Data:

To facilitate the management of study materials, a "Materials" table was implemented. It included attributes such as MaterialID, ClassroomID, Title, and Content. The ClassroomID field served as a reference to the ClassroomID linked to the materials.

6. Enrollment Data:

To handle class enrollments, an "Enrollments" table was established. It consisted of columns for EnrollmentID, StudentID, and ClassroomID. The StudentID field refers to the UserID of

the student, while the ClassroomID field corresponds to the ClassroomID of the enrolled class.

7. Submission Data:

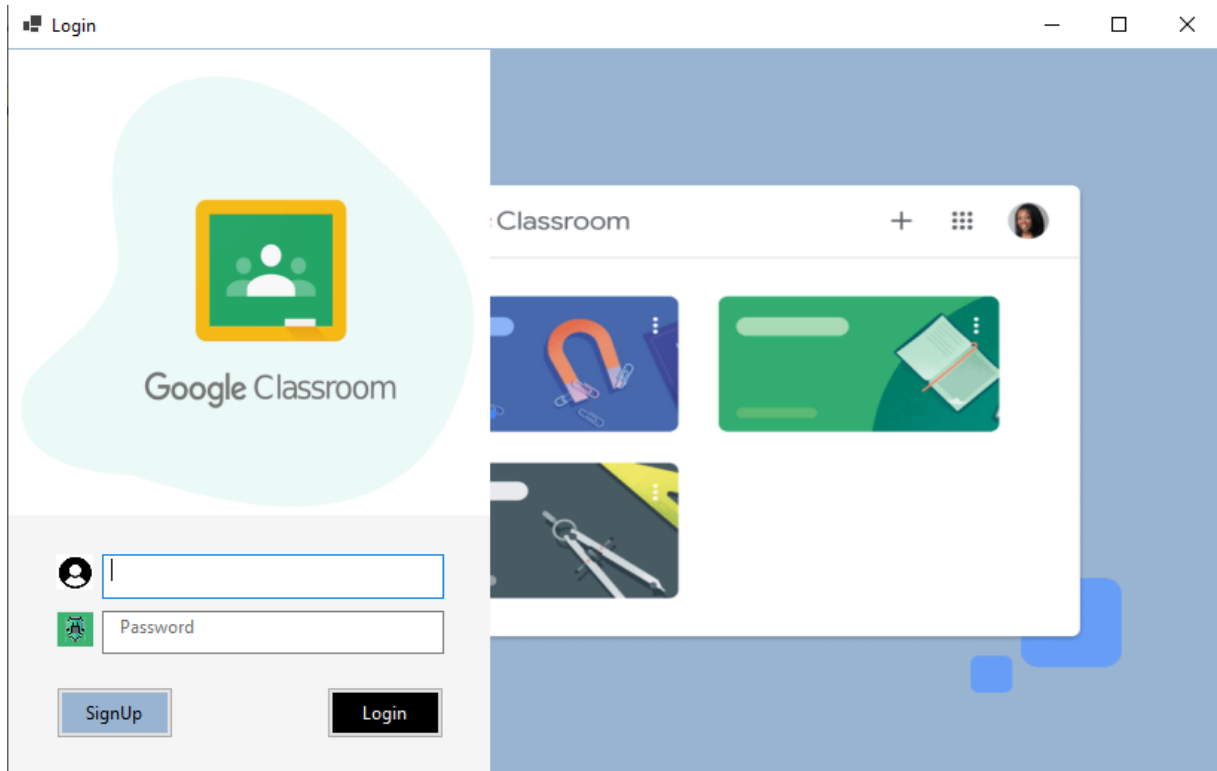
A "Submissions" table was created to manage assignment submissions. It encompassed fields such as SubmissionID, AssignmentID, StudentID, Content, Timestamp, and Grade. The AssignmentID field referred to the AssignmentID associated with the submission, and the StudentID field referenced the UserID of the submitting student.

8. Comment Data:

An additional table, "Comments," was generated to store comments made on various class-related elements. It consisted of fields like CommentID, UserID, Content, ContextID, and ContextType. The UserID field pointed to the UserID of the user who posted the comment, while the ContextID and ContextType fields were utilized to identify the specific context (assignment, announcement, or material) to which the comment pertained.

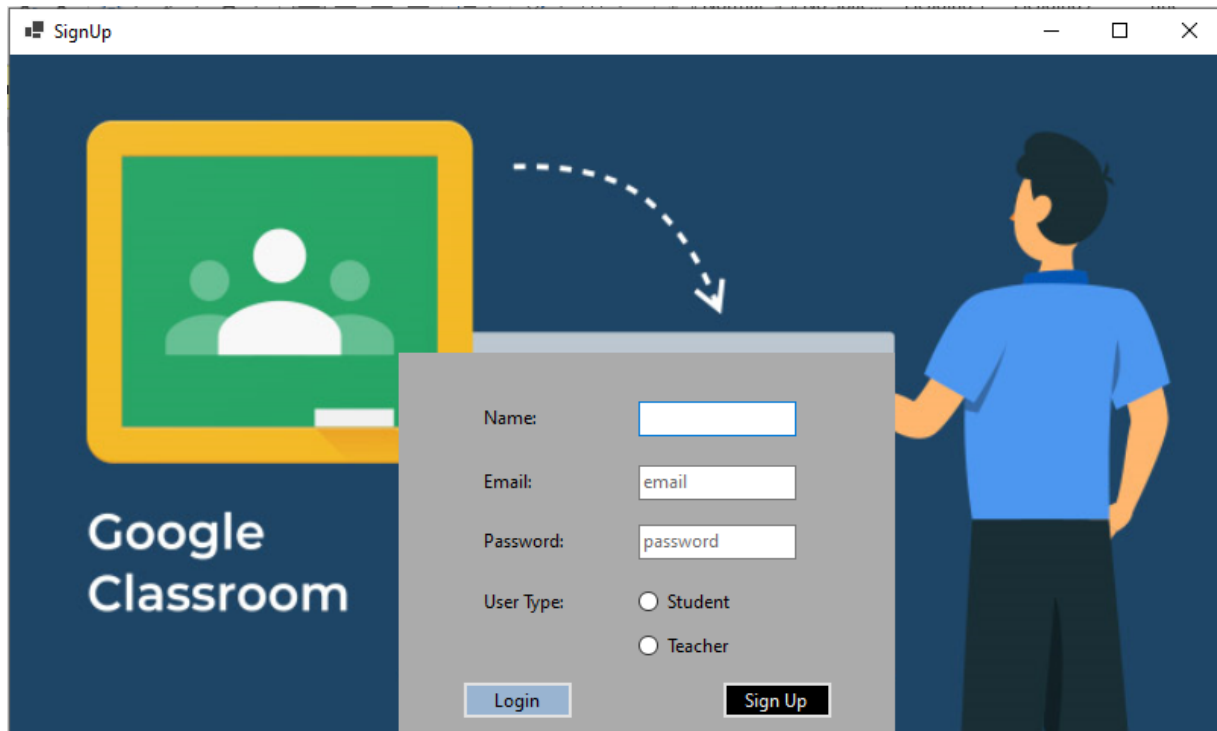
By implementing these tables and their respective fields, SQL Studio facilitated efficient storage and management of user data, classroom information, assignments, announcements, study materials, enrollments, submissions, and comments. This comprehensive setup provided a solid foundation for the Google Classroom application's functionalities and operations.

LOGIN PAGE



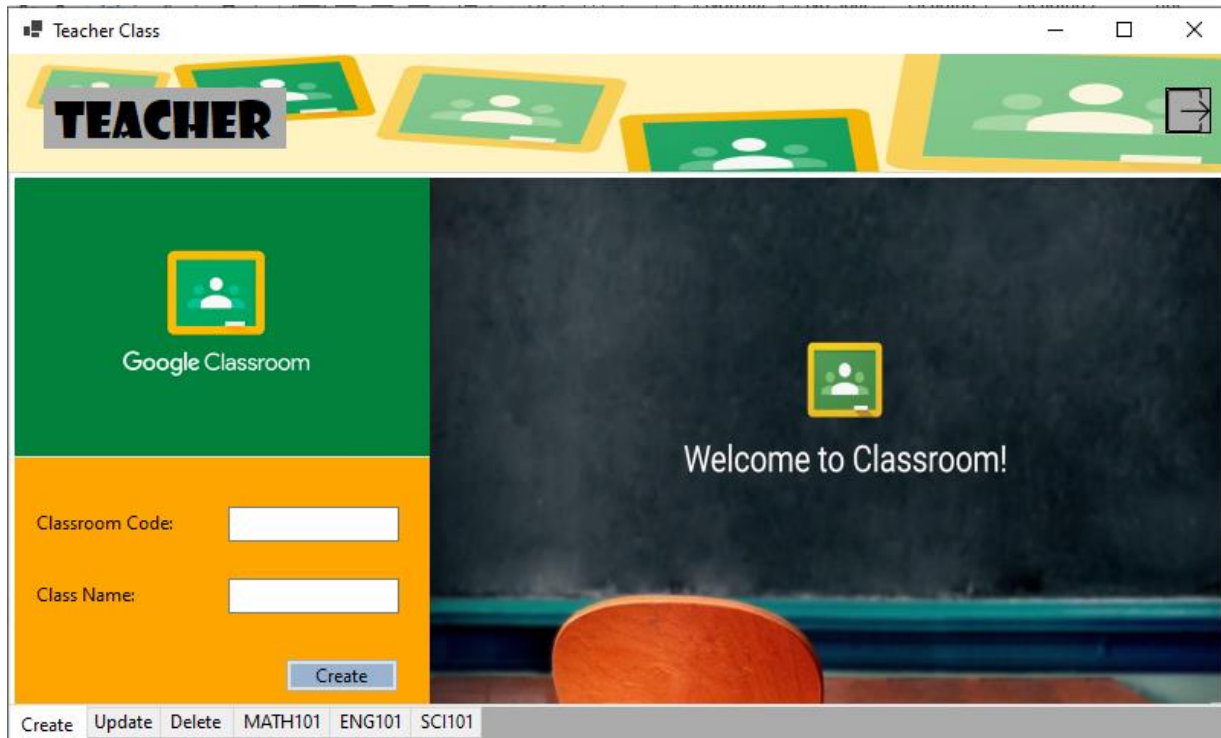
The screenshot shows a web browser window titled "Login". The main content area features the Google Classroom logo (a green square with a white person icon) and the text "Google Classroom". Below this, there is a login form with a username field (containing a single character), a password field (labeled "Password"), and two buttons: "SignUp" and "Login". To the right of the login form, there is a smaller window titled "Classroom" showing a grid of course cards with various educational icons like a magnet, a book, and a compass.

SIGN UP PAGE



The screenshot shows a web browser window titled "SignUp". The main content area features the Google Classroom logo (a green square with a white person icon) and the text "Google Classroom". Below this, there is a sign-up form with fields for "Name:", "Email:" (containing "email"), "Password:" (containing "password"), and "User Type:" with two radio button options: "Student" and "Teacher". At the bottom of the form, there are two buttons: "Login" and "Sign Up". The background of the page shows a person in a blue shirt standing next to a large screen displaying the Google Classroom logo.

TEACHER VIEW(Create unique class)



Teacher Class

TEACHER

Google Classroom

Welcome to Classroom!

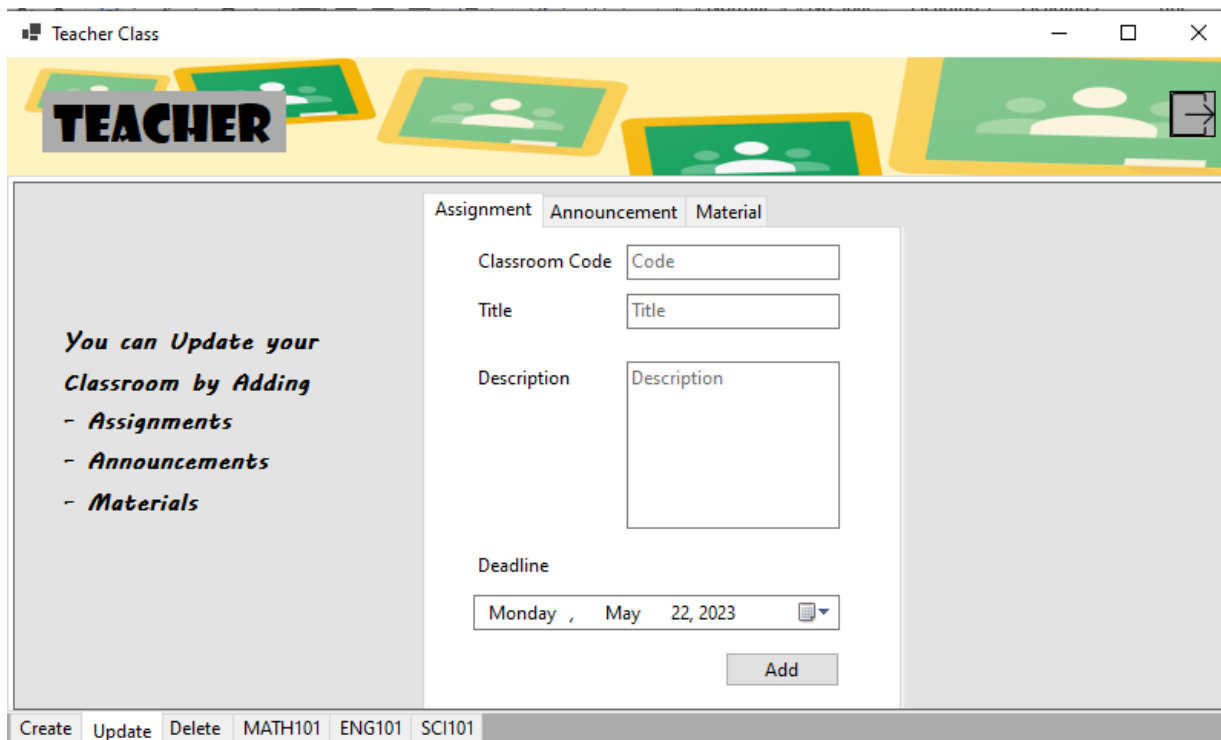
Classroom Code:

Class Name:

Create

Create Update Delete MATH101 ENG101 SCI101

UPDATE CLASSROOM



Teacher Class

TEACHER

You can Update your Classroom by Adding

- *Assignments*
- *Announcements*
- *Materials*

Assignment Announcement Material

Classroom Code

Title

Description

Deadline

Monday , May 22, 2023

Add

Create Update Delete MATH101 ENG101 SCI101

DELETE CLASSROOM

Teacher Class

TEACHER

Classroom Code:

Delete

Create

Update

Delete

MATH101

ENG101

SCI101

VIEW ASSIGNMENT IN A CLASS

Teacher Class

TEACHER

Assignments

Announcement

Material

Assignment ID: 1
Classroom ID: 1
Title: Assignment 1
Description: Complete exercises 1-10
Deadline: 5/30/2023 11:59:59 PM

Assignment ID: 2
Classroom ID: 1
Title: Assignment 2
Description: Solve the problem set
Deadline: 6/5/2023 11:59:59 PM

Create

Update

Delete

MATH101

ENG101

SCI101

ON CLICKING ON ASSIGNMENT

The screenshot shows the 'Assignment 1' page in Google Classroom. At the top, there's a header with 'ASSIGNMENT' and 'Assignment 1'. Below this, there are tabs for 'Assignment', 'Comment', 'Submission', and 'Report'. The 'Assignment' tab is active. On the left, a box displays assignment details: 'Assignment ID: 1', 'Classroom ID: 1', 'Title: Assignment 1', 'Description: Complete exercises 1-10', and 'Deadline: 5/30/2023 11:59:59 PM'. On the right, there's a large empty box for comments or submissions, with a 'Delete' button at the bottom. The top right corner shows the 'Classroom Code: MATH101' and 'Class Name: Math'.

ASSIGNMENT PAGE (Teacher can delete all comments)

This screenshot shows the 'Assignment 1' page with the 'Comment' tab selected. It displays three comments, each with a 'Delete' button. The first comment is by user 8, the second by user 10, and the third by user 1. At the bottom, there is a text input field and a 'Send' button. The header and assignment details remain the same as in the previous screenshot.

LIST OF SUBMISSIONS(Assignment Report)

Form7

ASSIGNMENT

Assignment 1

Classroom Code: MATH101
Class Name: Math

Assignment Comment Submission Report

Submission ID: 1
Submission: Submission content 1
Time: 5/20/2023 10:00:00 AM
by 8

Grade: 10

Return

Submission ID: 7
Submission: Submission content 1
Time: 5/20/2023 10:00:00 AM
by 9

UnMarked

Return

Submission ID: 167
Submission: Submission content 1
Time: 5/22/2023 4:00:00 PM
by 35

UnMarked

Return

Submission ID: 173
Submission: Submission content 1
Time: 5/22/2023 4:00:00 PM
by 36

UnMarked

Return

ANNOUNCEMENT PAGE

Form8

ANNOUNCEMENT

Welcome to MATH101!

Classroom Code: MATH101
Class Name: Math

Announcement Comment

announcement ID: 1
Classroom ID: 1
Title: Welcome to MATH101!
Description: This is the first announcement for MATH101.

Delete

Form8

—

□

×

ANNOUNCEMENT

Welcome to MATH101!

Classroom Code: MATH101
Class Name: Math

Announcement

Comment

Comment ID: 85
Comment: This is the first comment on Announcement 1
by 8

Delete

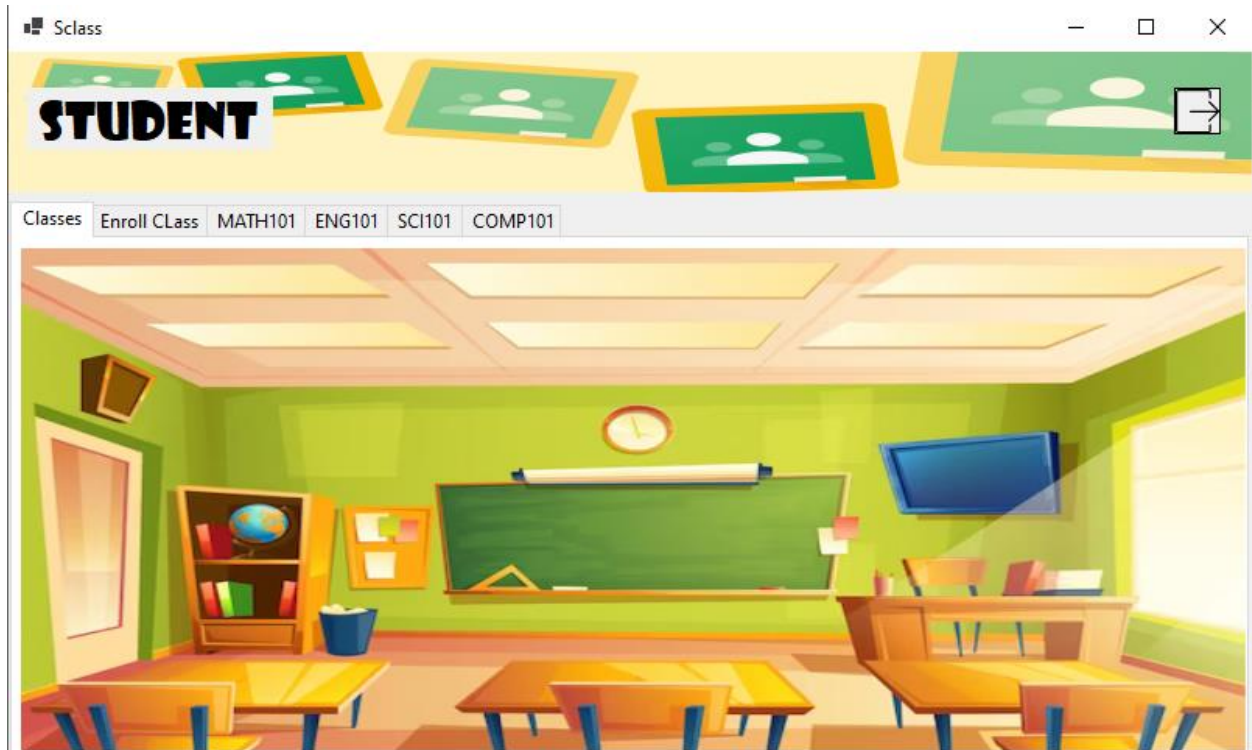
Comment ID: 86
Comment: This is the second comment on Announcement 1
by 10

Delete

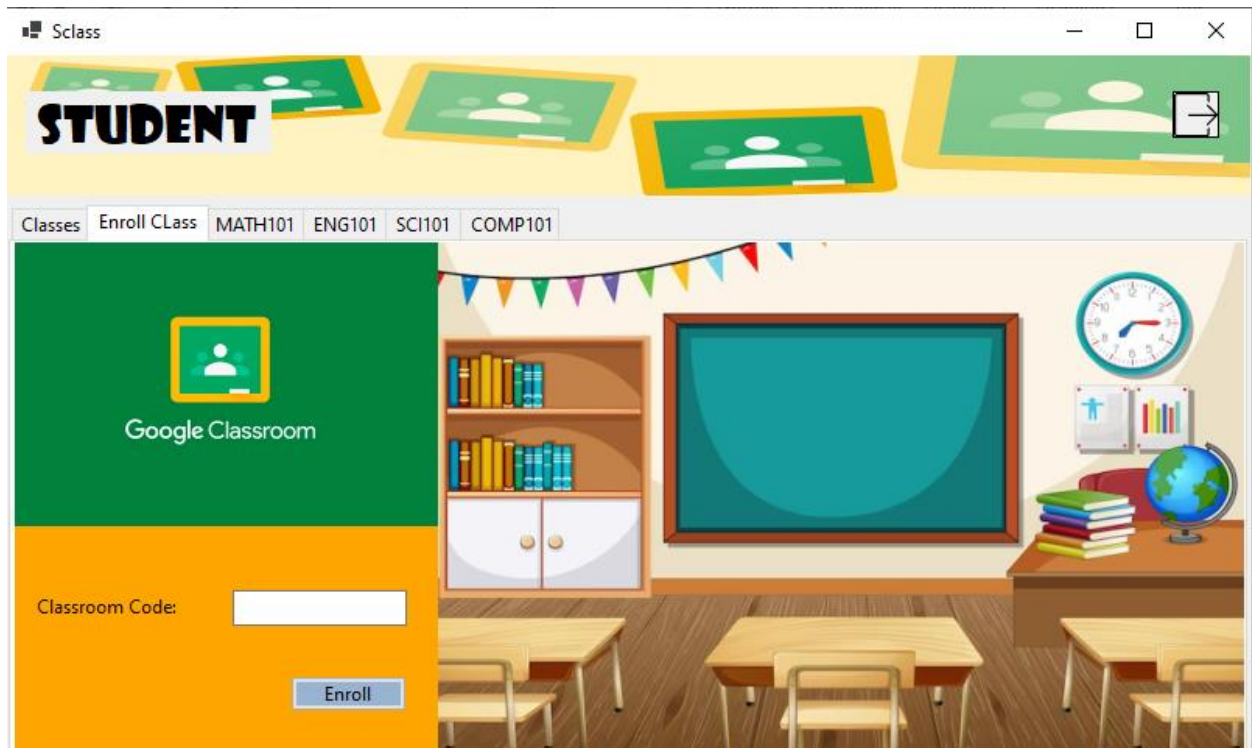
Send

MATERIAL PAGE IS SIMILAR LIKE ANNOUNCEMENT

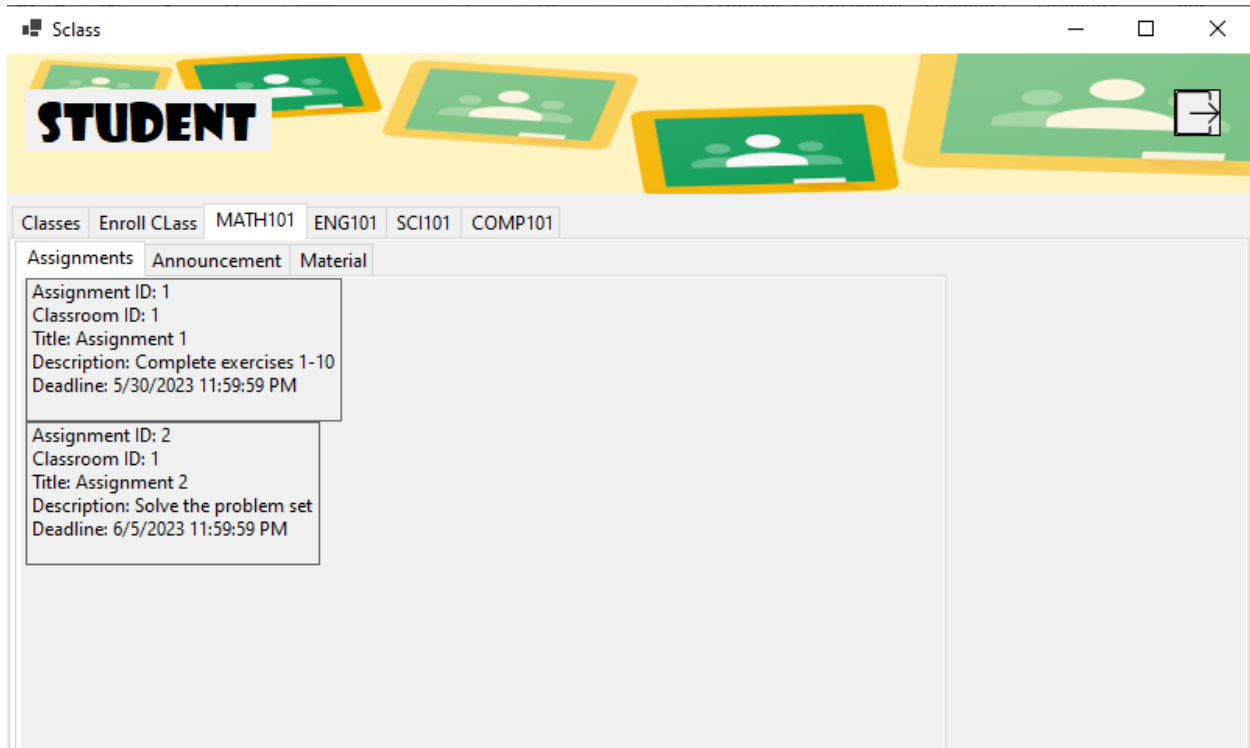
STUDENT VIEW



ENROLL IN CLASS

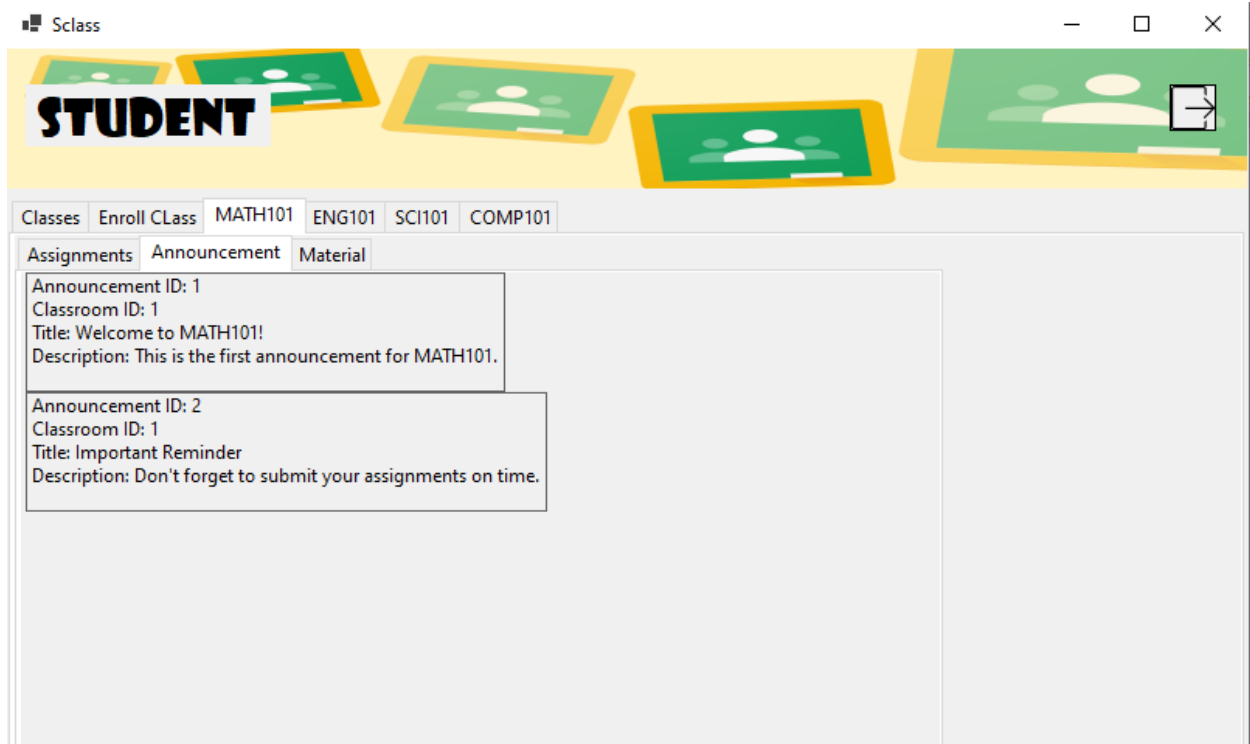


CLASS VIEW FOR STUDENT



The screenshot shows the Google Classroom interface from a student's perspective. At the top, there's a header with the word "STUDENT" in large, bold letters. Below this, there's a navigation bar with tabs for "Classes", "Enroll Class", "MATH101", "ENG101", "SCI101", and "COMP101". The "MATH101" tab is selected. Underneath, there's another set of tabs: "Assignments", "Announcement", and "Material". The "Assignments" tab is active, displaying a list of two assignments. Each assignment card shows its ID, Classroom ID, title, description, and deadline.

Assignment ID	Classroom ID	Title	Description	Deadline
1	1	Assignment 1	Complete exercises 1-10	5/30/2023 11:59:59 PM
2	1	Assignment 2	Solve the problem set	6/5/2023 11:59:59 PM



This screenshot shows the same Google Classroom interface, but with the "Announcement" tab selected. The "Assignments" tab is now inactive. The "Announcement" tab displays a list of two announcements. Each announcement card shows its ID, Classroom ID, title, and description.

Announcement ID	Classroom ID	Title	Description
1	1	Welcome to MATH101!	This is the first announcement for MATH101.
2	1	Important Reminder	Don't forget to submit your assignments on time.

Sclass

STUDENT

Classes Enroll Class MATH101 ENG101 SCI101 COMP101

Assignments Announcement **Material**

Material ID: 1
Classroom ID: 1
Title: Lecture Slides
Description: Download the lecture slides for this week.

Material ID: 2
Classroom ID: 1
Title: Additional Resources
Description: Check out these additional resources for extra practice.

Sclass

STUDENT

Classes Enroll Class MATH101 ENG101 **SCI101** COMP101

Assignments **Announcement** Material

Assignment ID: 5
Classroom ID: 3
Title: Lab Report
Description: Submit the lab report for the experiment
Deadline: 6/10/2023 11:59:59 PM

Assignment ID: 6
Classroom ID: 3
Title: Research Project
Description: Prepare a research project on a scientific topic
Deadline: 6/15/2023 11:59:59 PM

ASSIGNMENT PAGE FOR STUDENTS

The screenshot shows the Google Classroom assignment page for students. The window title is "Form10". The header features a yellow banner with the word "ASSIGNMENT" in large black letters, followed by "Assignment 1" in a smaller box. To the right, a box displays "Classroom Code: MATH101" and "Class Name: Math". Below the header, there are two tabs: "Assignment" (selected) and "Comment". The "Assignment" tab contains a large text area for the assignment details. The details include: "Assignment ID: 1", "Classroom ID: 1", "Title: Assignment 1", "Description: Complete exercises 1-10", and "Deadline: 5/30/2023 11:59:59 PM". To the right of the text area, there is a box for submission details: "Submission ID: 1", "Submission: Submission content 1", "Time: 5/20/2023 10:00:00 AM", and "by 8". A "Grade:" field is also visible. At the bottom right of the text area is a "Submit" button. A horizontal scrollbar is visible at the bottom of the page.

CANNOT RETURN EMPTY SUBMISSION

This screenshot shows the same Google Classroom assignment page as the previous one, but with an error message displayed. The error message is a small dialog box with a close button (X) in the top right corner. The text inside the dialog box says "It is empty!!". Below the text is an "OK" button. The rest of the page, including the assignment details and submission information, remains the same as in the previous screenshot.

CAN ONLY DELETE HIS/HER OWN COMMENTS

Form10

ASSIGNMENT

Assignment 1

Classroom Code: MATH101
Class Name: Math

Assignment Comment

Comment ID: 1
Comment: This is the first comment on assignment 1
by 8

Comment ID: 2
Comment: This is the second comment on assignment 1
by 10

Comment ID: 253
Comment: mahad
by 1

ANNOUNCEMENT PAGE FOR STUDENTS

Form8

ANNOUNCEMENT

Welcome to SCI101!

Classroom Code: SCI101
Class Name: Science

Announcement Comment

announcement ID: 5
Classroom ID: 3
Title: Welcome to SCI101!
Description: This is the first announcement for SCI101.

Form8

ANNOUNCEMENT

Welcome to SCI101!

Classroom Code: SCI101
Class Name: Science

Announcement Comment

Comment ID: 93
Comment: This is the first comment on Announcement 5 by 8 Delete

Comment ID: 94
Comment: This is the second comment on Announcement 5 by 10

Send

MATERIAL PAGE FOR STUDENTS

Form9

MATERIAL

Course Syllabus

Classroom Code: ENG101
Class Name: English

Material Comment

announcement ID: 3
Classroom ID: 2
Title: Course Syllabus
Description: Download the course syllabus for ENG101.

Delete

CANNOT MAKE AN EMPTY COMMENT

Form9

MATERIAL

Course Syllabus

Classroom Code: ENG101
Class Name: English

Material Comment

Comment ID: 173
Comment: This is the first comment on Material 3 by 9

Comment ID: 174
Comment: This is the second comment on Material 3 by 11

It is empty!!

OK

Send