Student Information Management

Windows Programming Final Exercise

Introduction

Student Information Management is the tool used to manage students of the university. The tool has a lot of features; however, in this exercise newcomers are required to implement only two functions:
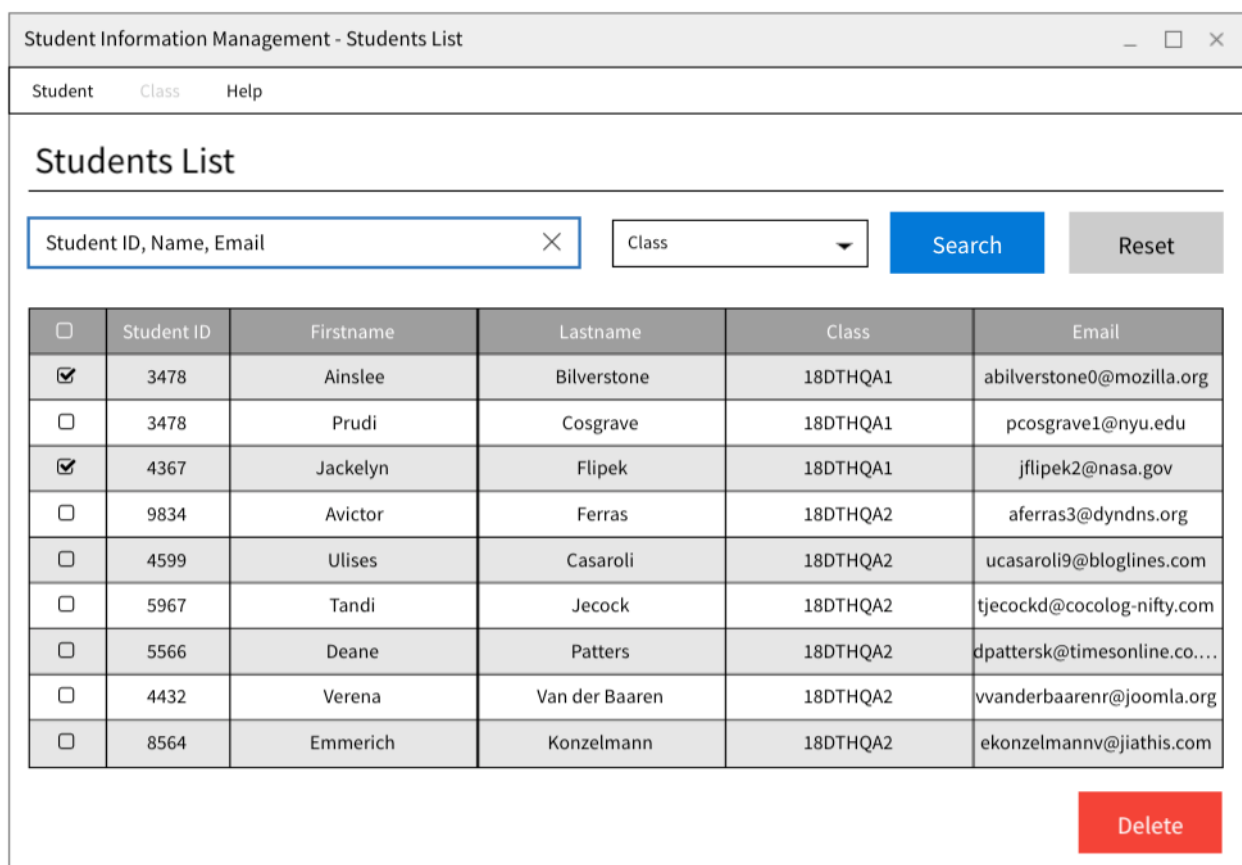
1. Students List
2. Student creation and modification

Out of scope:

- Role management
- Login/Logout
- Class management (List/Creation/Modification)

Students List

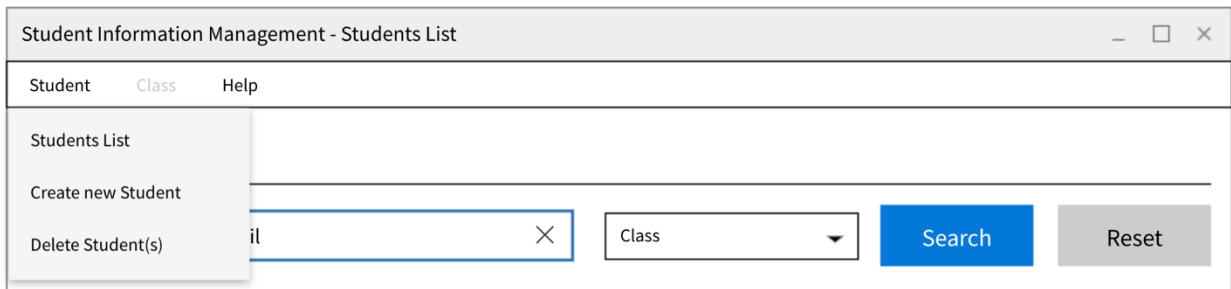### Mockup

Figure 1 Students List

Figure 2 "Student" menu

Specification

1. When the user opens the application, Students list is displayed.
2. User can filter the student with search criteria: First Name, Last Name, Student ID, Email, and Class.
3. When clicking on the Search button, the matching students are displayed in a grid view as Figure 1 Students List. The search result is sorted by First Name ascending.
4. If no criteria are entered, all students are listed.
5. "Reset" button is used to clear the search criteria and return all students.
6. In the search result grid, the user double clicks on a row to open the Student Modification dialog (refer to Student creation and modification) for updating the selected student information.
7. User can perform deletion by selecting single/multiple projects and click on the menu "Student" -> "Delete Student(s)" (Figure 2 "Student" menu) or press the Delete button.

Advance

8. Pagination
9. Table with sorting headers

Student creation and modification
Mockup

Figure 3 Student Creation/Modification

Figure 4 Student Transcript

Specification

1. The Administrator logs in to the tool and creates new student by clicking on the menu "Student" -> "Create new Student" (Figure 2 "Student" menu). It is a modal dialog (Research Modal and Nonmodal/modeless on the Internet).
2. He can also search for a student (refer to Students List) and update it.
3. Title "New Student" is changed to "Edit Student information" when user edits an existing student.
4. A project has following information: Student ID, First Name, Last Name, Birthdate, Gender, Address, Email, Class. Refer to Database section below for more information.
5. In Edit mode, Student ID can't be changed.
6. Any fields that have validation errors are highlighted.

Figure 5 Form Validation

7. If the user creates a new project having number already existed, display the following error message: "The Student ID number already existed".

8. If there is unexpected error (e.g. network error, database connection error, etc.), show an error message: "Unexpected error occurred. Please contact your administrator".
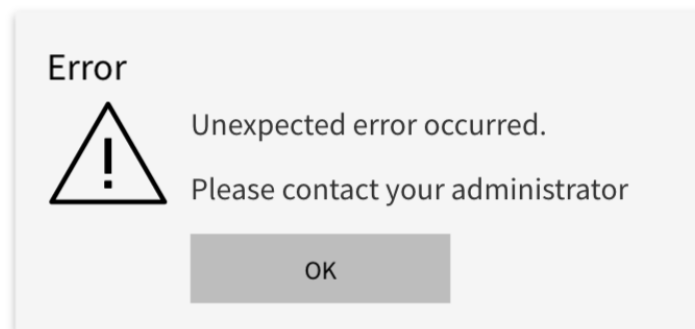
Figure 6 Error Message

9. If there is no error during saving the student, the Student creation/modification dialog is closed.

Advance

10. When the user click the button "View Transcript", the dialog "Transcript" opens (Ref to Figure 4 Student Transcript). The dialog lists all transcript information of the student.

Database

Figure 7 Data model

Table: **STUDENT**

Column Name	Data Type	Mandatory	Description
ID	NUMBER(19,0)	Yes	Primary key of the STUDENT table.

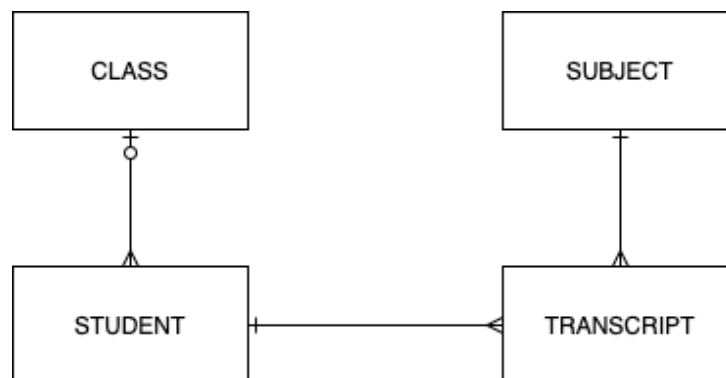| CLASS_ID | NUMBER(19,0) | No | Foreign key refer to table CLASS that this student will belong to. |
STUDENT_ID	NUMBER(4,0)	Yes	Student ID. Unique
FIRST_NAME	VARCHAR(50)	Yes	Student First Name
LAST_NAME	VARCHAR(50)	Yes	Student Last Name
BIRTHDATE	Date	Yes	Student birthdate
GENDER	CHAR(1)	Yes	Student's gender, possible values are 'M' or 'F' corresponding to "Male" or "Female"
ADDRESS	VARCHAR(255)	No	Student's address
EMAIL	VARCHAR(255)	No	Student's personal email

Table: **CLASS**

Column Name	Data Type	Mandatory	Description
ID	NUMBER(19,0)	Yes	Primary key of the CLASS table.
NAME	VARCHAR(50)	Yes	Name of class
YEAR	NUMBER(4,0)	Yes	Year of class

Table: **SUBJECT**

Column Name	Data Type	Mandatory	Description
ID	NUMBER(19,0)	Yes	Primary key of the SUBJECT table.
NAME	VARCHAR(50)	Yes	Name of subject
CREDITS	NUMBER(4,0)	Yes	Number of credits

Table: **TRANSCRIPT**

Column Name	Data Type	Mandatory	Description
ID	NUMBER(19,0)	Yes	Primary key of the TRANSCRIPT table.
SUBJECT_ID	NUMBER(19,0)	Yes	
SCORE	NUMBER(4,2)	Yes	