

# 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:

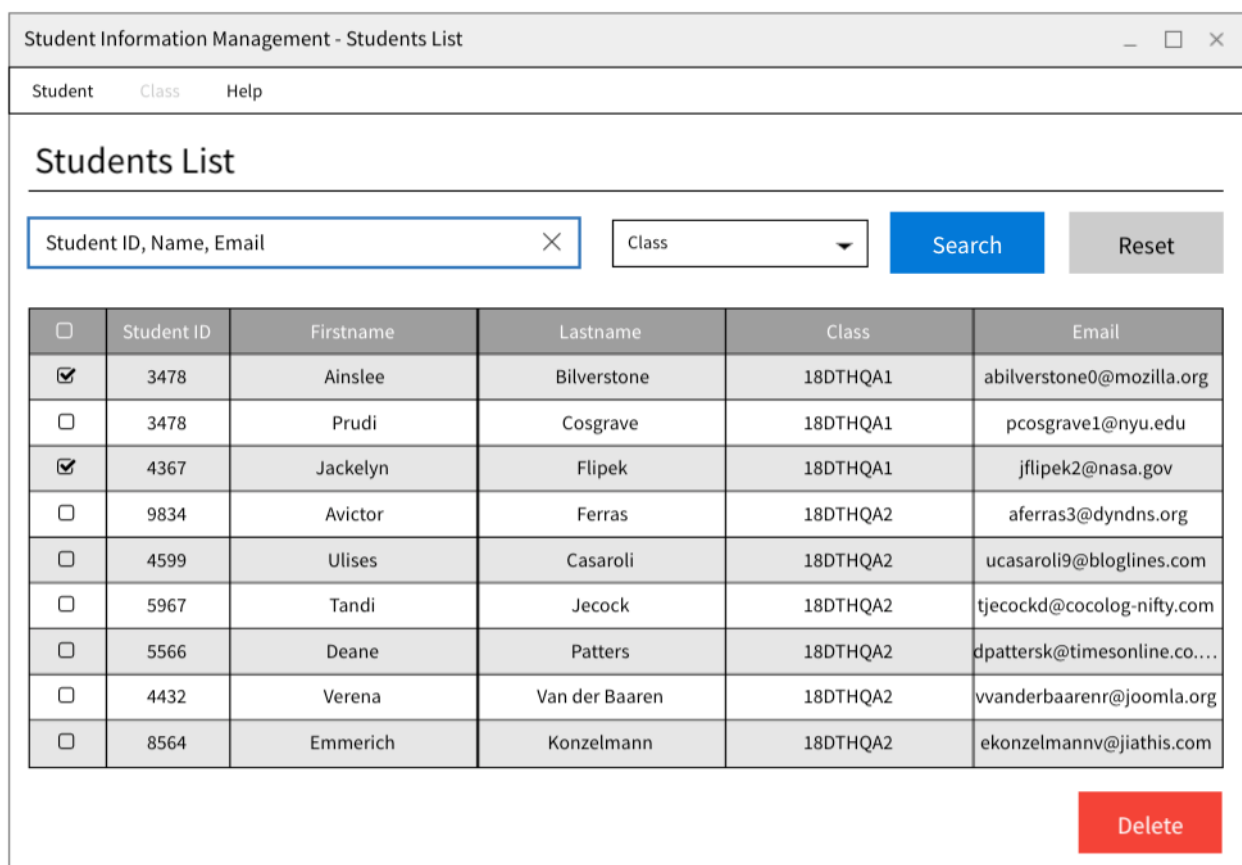
1. Students List
2. Student creation and modification

Out of scope:

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

## Students List

### Mockup



The mockup shows a window titled "Student Information Management - Students List". It has a menu bar with "Student", "Class", and "Help". Below the menu bar is a section titled "Students List". This section contains a search bar with the placeholder text "Student ID, Name, Email", a dropdown menu for "Class", a blue "Search" button, and a grey "Reset" button. Below these controls is a table with 6 columns: a checkbox column, "Student ID", "Firstname", "Lastname", "Class", and "Email". The table contains 10 rows of student data. The first and third rows have their checkboxes checked. At the bottom right of the window is a red "Delete" button.

<input type="checkbox"/>	Student ID	Firstname	Lastname	Class	Email
<input checked="" type="checkbox"/>	3478	Ainslee	Bilverstone	18DTHQA1	abilverstone0@mozilla.org
<input type="checkbox"/>	3478	Prudi	Cosgrave	18DTHQA1	pcosgrave1@nyu.edu
<input checked="" type="checkbox"/>	4367	Jackelyn	Flipek	18DTHQA1	jflipek2@nasa.gov
<input type="checkbox"/>	9834	Avictor	Ferras	18DTHQA2	aferras3@dyndns.org
<input type="checkbox"/>	4599	Ulises	Casaroli	18DTHQA2	ucasaroli9@bloglines.com
<input type="checkbox"/>	5967	Tandi	Jecock	18DTHQA2	tjecockd@cocolog-nifty.com
<input type="checkbox"/>	5566	Deane	Patters	18DTHQA2	dpattersk@timesonline.co....
<input type="checkbox"/>	4432	Verena	Van der Baaren	18DTHQA2	vvanderbaarenr@joomla.org
<input type="checkbox"/>	8564	Emmerich	Konzelmann	18DTHQA2	ekonzelmannv@jiathis.com

Figure 1 Students List

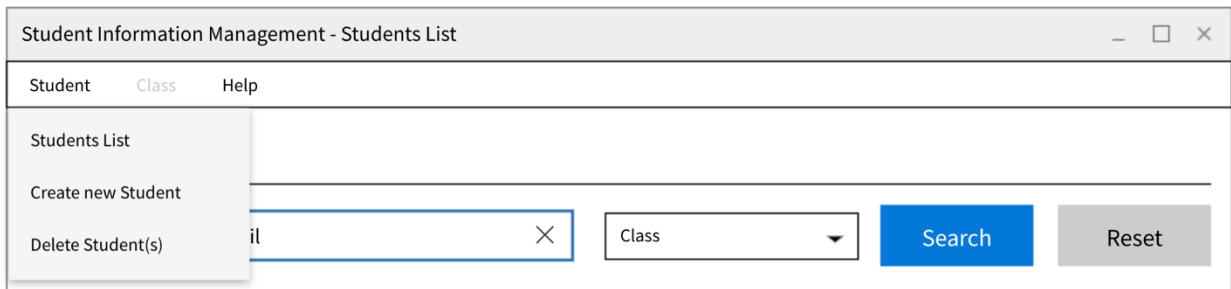


Figure 2 "Student" menu

## 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

The mockup shows a window titled "Student Information Management - New Student". Inside, there's a section titled "New Student" with several input fields: "Student ID \*" (text), "First Name \*" (text), "Last Name \*" (text), "Birthdate \*" (calendar icon, showing "12 May 2000"), "Gender" (radio buttons for "Nam" and "Nữ", with "Nam" selected), "Address" (text), "Email" (text), and "Class" (dropdown menu showing "18DTHQA1"). At the bottom, there are three buttons: "View Transcript" (disabled), "Save" (active), and "Cancel" (disabled).

Figure 3 Student Creation/Modification

The mockup shows a window titled "{{Student Name}} - Transcript". It contains a table with two columns: "Subject" and "Score". The table has three rows of data: Math (8.4), Social Sciences (5.5), and Computer Basics (7.4). The table is scrollable, with up and down arrows visible on the right side.

Subject	Score
Math	8.4
Social Sciences	5.5
Computer Basics	7.4

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.

Student ID \*

The Student ID already existed

First Name \*

The field is required

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".

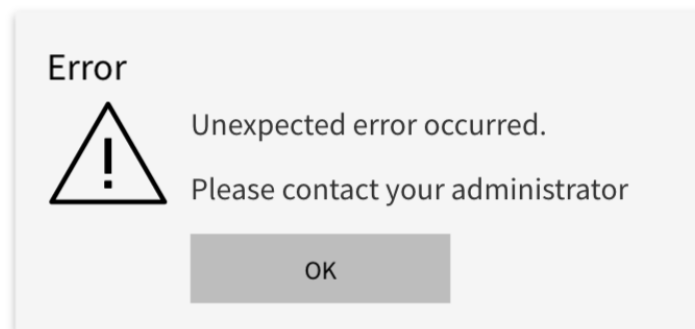


Figure 6 Error Message

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

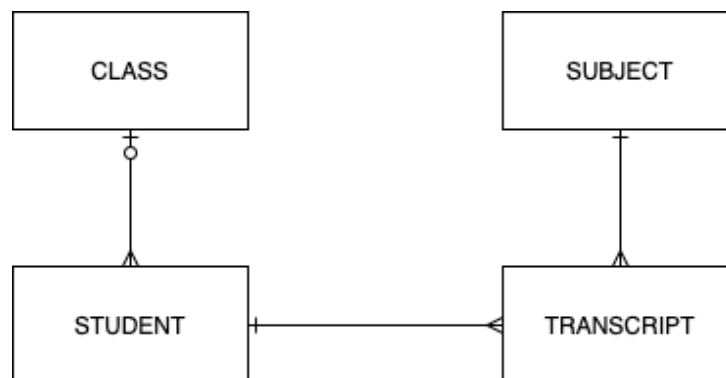


Figure 7 Data model

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	