Application Design - ThisIsSpartanTech

The following is the GUI design layout for the ThisIsSpartanTech DBMS application. It will illustrate the elements of the GUI each type of user (Database Administrator, Administrator, Professor, Student) will encounter as they use the application. The application will be built as a Client/Server system as the registration process and administration of the application will be completed on campus.

BASE LOGIN PAGE

The basic login screen that displays when the application is open shows a header that says "Login." Below this, there are two boxes for input labeled "USERNAME" and "PASSWORD." After username and password are input, the user will select a button located below titled "Login." If the input username and password are incorrect, the screen will display a message that states, "Incorrect Username and/or Password." If the input username/password are correct, the home screen will be displayed depending on role.

At the bottom right corner of the login page, a separate button will be displayed titled "DBA Login." If a user selects this button, an additional window will be displayed with title "DBA Login" and boxes titled "USERNAME," "PASSWORD," and "DBA ID." The DBA ID is a 10-digit hexadecimal value. A "Login" button and a "Cancel" will be below these input boxes. When "Login" is selected by the user, the same authentication process as mentioned above will occur - if Username and Password are valid, the DBA home screen will be displayed. If Username and Password are invalid, an error message stating "Incorrect Username/Password/DBA ID" will be displayed. A button titled "Cancel" will be located next to the "Login" button that will allow the user to exit the DBA Login page and return to the original login page.

DATABASE ADMINISTRATOR

When logged in, the user with the DBA role will see the following option buttons:

Modify Student Tables – Option Buttons

- *Add student* - The user is presented with prompts to enter first and last name, a student ID and a student classification (Freshman, Sophomore, Junior, Senior)
- *Delete student* - The user is presented with prompt to enter a student ID number to remove the student
- *Modify student information* -The user is presented with a prompt to enter a student ID number to select a student. Once entered, options to modify a student's name and class will be provided.
- *Modify student registration* - The user is presented with a prompt to enter a student ID number. Once entered a screen showing all their classes will be presented. They can drop or add classes to the students registered classes.
- *Modify student grades* - The user is presented with a prompt to enter a student ID number. Once entered, a list of all current classes the student is taking will be returned. A

drop box for each class containing all possible grade levels will be next to each course and can be changed (A+ – F).

Modify Professor Tables – Option Buttons

- *Add Professor* - A pop-up box with text boxes to enter professor information including First name and Last name, faculty ID, and department ID will be shown. "Add" and "Cancel" buttons will be shown at the bottom of the pop-up. Selecting "Add" will add the professor to the professor table.
- *Delete Professor* - A pop-up box with a text box to enter the professor's Faculty/Professor ID will be presented. "Delete" and "Cancel" buttons will be shown at the bottom of the pop-up. Selecting "Delete" will delete the professor from the professor table.
- *Modify Professor Information* - A pop-up box to enter a professor's faculty ID will be presented. Once entered, a new window with text boxes to change a professor's first name and last name and department will be shown. Buttons to "Submit" and "Cancel" will be shown at the bottom of the window. Selecting "Submit" will submit the changes.

Modify School Administrator Tables – Option Buttons

- *Add Administrator* - A prompt to enter professor information including first and last name, faculty ID, and department ID will be presented.
- *Delete Administrator* - A prompt to enter a professor's faculty ID will be presented.
- *Modify Administrator Information* - A prompt to enter a professor's faculty ID will be presented. Once entered, prompts to change a professor first and last name and department will be presented.

Modify Course Tables – Option Buttons

- *Add Course* - A pop-up box with text boxes to enter course information such as course code, course name, course description, course department and course professor will be presented. Buttons to "Add" and "Cancel" will be shown. Selecting "Add" will add the course to the course table.
- *Delete Course* - A pop-up box with text boxes to enter a course code and course department code will be presented. Buttons to "Delete" and "Cancel" will be shown at the bottom of the window. Selecting "Delete" will delete the course from the course tables and unregister all the students currently registered in that class.
- *Modify Course Information* - A pop-up box to enter a course code and department code will be presented. Once entered, a new window with text boxes to modify all course information (Course ID, Course Name, Course Description, and Professor) will be shown.

Modify Department Tables

- *Add Department* - A pop-up box containing text boxes to enter the new department name and department key will be presented. "Add" and "Cancel" buttons will be shown in the bottom of the pop-up. Selecting "Add" will add the department.
- *Delete Department* - A pop-up box containing text boxes to enter the department key to be deleted will be presented. "Delete" and "Cancel" buttons will be shown in the bottom

of the pop-up. Selecting "Delete" will remove the department, all its classes, and all its professors from the database.

- *Modify Department* - A pop-up box containing a text box to enter a department key to be edited will be presented. "Go" and "Cancel" buttons will be shown at the bottom of the window. Selecting "Go" will generate a new window with all a department information including Department ID, Department Name, and Department Administrator. This information will be in text boxes and the DBA will be able to edit any pieces of information.

Selecting "Open Terminal" will open a window where the user is free to input raw SQL to modify the database.

ADMINISTRATOR

After login, users with the Administrator role will see the following option buttons:

Modify Student Registration
- Once selected, the administrator will see a pop-up with a text box to input a student ID. "Go" and "cancel" buttons will be shown. When "Go" is selected, the administrator will be shown with a list of all the students currently registered courses.
- Next to each course listed a "Drop course" button will be available to select. Selecting "Drop course" unregisters the student from the course and refreshes the window to remove the course from the list.
- At the bottom of the window, a button "Register student for course" is shown. Once selected, a pop-up box with text boxes to input course ID and course department will be shown. A "Register" and "Cancel" button will be shown at the bottom of the pop-up. Selecting "Go" will register the student for the course.

Modify Courses
- Once selected, the administrator will be presented with a pop-up box containing buttons to "Add Course" and "Remove Course."
    - Selecting "Add Course" will open a new window with text boxes to input a new course ID, course department, course name, and an optional course instructor and description. "Add" and "Cancel" buttons will be shown at the bottom of the window. Selecting "Add" will add the course to the course table.
    - Selecting "Remove Course" will open a new window with text boxes to input course ID and course department for the course to be deleted. A "Remove" and "Cancel" button will be shown at the bottom of the window. Selecting "Remove" will delete the course from the course table and unregister all students in the course.

Add or Remove a Professor
- Once selected, the administrator will be presented with a pop-up box containing buttons to "Add Professor" and "Remove Professor."

    - "Add Professor" - A pop-up box with text boxes to enter professor information including First name and Last name, faculty ID, and department ID will be shown. Buttons titled "Add" and "Cancel" will be

shown at the bottom of the pop-up. Selecting "Add" will add the professor to the professor table. Selecting "Cancel" will close this view.

- "Delete Professor" - A pop-up box with a text box to enter the professor's faculty ID will be presented. "Delete" and "Cancel" buttons will be shown at the bottom of the pop-up. Selecting "Delete" will delete the professor from the professor table.

Add or Remove a Student
- Once selected, the administrator will be presented with a pop-up box containing buttons to "Add Student" and "Remove Student".

- "Add new student" - A pop-up box with text boxes to enter First Name, Last Name, Student ID, and Classification (Freshman, Sophomore, Junior, Senior) will be presented. "Add" and "Cancel" buttons will be shown at the bottom of the window. Selecting "Add" will add the student to the student table.

- "Delete Student" - A pop-up box to enter a Student ID will be presented. Options to "Delete" and "Cancel" will be shown at the bottom of the window

See Student Record
- Once selected, the administrator will be presented with a pop-up to enter a Student ID. Buttons titled "Go" and "Cancel" will be shown at the bottom. Selecting "Go" will generate a list to display all courses a student has taken as well as the grade earned in each course. Selecting "Cancel" will close this view.

PROFESSOR

After login, users with the Professor role will access the following views:

Professor Initial View/Home Screen Options

- *Select a Course*
  - The user will be prompted with a dropdown box to "Select a Course" from the list of courses that professor teaches.
    - On the list, the Department Key, Course Number, Section Number and Course Name will be shown.
    - Next to each course, a button marked "Registered Students" will be displayed that, when selected, will take users to the Professor Grade View page.
  There will be two buttons on the bottom of the page:
  - *Add/Modify Course*
    - At the bottom of the page, there will be a button to Add/Modify Course.
    - The "Add/Modify Course" button will bring the user to the add/modify course view page.
  - *Delete Course*

- o The "Delete Course" button will be active when a course has been highlighted.
- o The "Delete Course" button brings up an additional box display.
  - ▪ The box reads, "Are you sure you want to delete Course [course title] from your schedule? This will drop the selected course section from the school's records for this semester and unregister all associated students."
  - ▪ The user will be given options "YES, I would like to delete this course" and "NO, I do NOT want to delete this course."
  - ▪ The "NO" option is automatically selected until the user changes the option to "YES."
  - ▪ If the user has selected "YES" to delete the course, the box will close, and the selected course will be deleted.
  - ▪ At the bottom of the box, buttons for "OK" and "Cancel" will be provided.
  - ▪ If the user has selected "NO" and the "OK" button or selected the "Cancel" button, the box will close, and the course will remain in the system.
  - ▪ The box will also have an "X" in the top right corner that allows the user to close the box with the course remaining in the system.

Course Add/Modify View

- *Course Add/Modify*

  - o When this button is selected, this option will allow a professor to add a course to their schedule or modify the course information for a course they are already teaching.
  - o This view can be accessed from the Professor initial view by clicking the "Add/Modify Course" button at the bottom of the page.
  - o The courses the professor teaches will be listed with Course Registration Number (CRN), Department Key, Course Number, Section Number, Course Name, Course Description, Semester, and Year.
    - ▪ The CRN and Department Key cannot be changed for a course.
    - ▪ Under Course Number, Section Number, Semester, and Year, there will be text boxes auto filled with the current information from the system for each course. These text boxes allow the user to modify the course information on the page.
    - ▪ Under Course Description, buttons next to each course will read "Click to Edit."
      - ▪ When the "Click to Edit" button for a course is selected, a box will appear reading "Course Description for [course title]" with a larger box for a 120-character description.
      - ▪ At the bottom of the box, buttons for "Save" and "Cancel" will be provided.

- If the user has selected "Save," the course description will be modified in the system and the user will be returned to the "Course Add/Modify" view.
- If the user selects "Cancel," the box will close, and the course description will remain as is in the system.
  - The box will also have an "X" in the top right corner that allows the user to close the box with the course description remaining in the system as is.
    - At the bottom of the "Course Add/Modify" view for professors, three buttons reading "Add Course," "Save," and "Cancel" will be present.

- *Add Course*

  - When the "Add Course" button is selected, a box will appear to add a course to the system.
  - The information in the box will include the CRN, Department, Course Number, Course Name, Course Description, Semester, and Year.
  - The CRN and department will be automatically generated and cannot be modified. Each of the remaining items will have a corresponding box for information to be entered into the system.
  - *Save*
    - Once the boxes are filled (course description is an optional field), the user can select the "Save" button to save the new course to the system. The course will be added to the list of the courses they are teaching on the course add/modify view and on the Professor initial view.
    - The "Save" button will allow for any modifications to current course information to be saved to the system and the user will be returned to the Professor initial view page
  - *Cancel*
    - If the user selects "Cancel," the box will close, and the courses will remain as they are in the system.
    - The box will also have an "X" in the top right corner that allows the user to close the box with the course description remaining in the system as is.
    - Selecting "Cancel" will return the user to the Professor initial view page.

Professor Grade View

- When this button is selected, this page will allow a professor to add a student's grade for a course which that professor is teaching and that student is enrolled.
- The students in the course will be listed with their information (Student ID, Last Name, First Name, and Grade).
- The user cannot modify any of the items except for Grade, which will be input in a text box.

- At the bottom of the page, buttons reading "Save" and "Cancel" will be present.
  - *Save*
    - The "Save" button will allow for any modifications to current course information to be saved to the system and the user will be returned to the Professor initial view page.
  - *Cancel*
    - Selecting "Cancel" will return the user to the Professor initial view page.

STUDENT

After login, users with the Student role will see the following options:

See Current Courses
- This button, when pressed from the Student home screen view, will take the student to a new page that displays all courses the student is currently registered for. Each course will be displayed by "Course Name," "Course ID," "Professor," and "Grade."
- There is a "Return" button below the course list that will return the student to the options page.
- There is a button within the section titled "Add Course."
  - When selected, a new window appears with boxes labeled "Enter Department Code."
  - After Department Code is entered, a drop-down appears listing all courses offered by that department.
  - Displayed information for courses listed includes CRN, Course Number, Section Number, Course Description (if assigned), and Professor Name.
  - When a course is selected, it is transferred to a box at the bottom of the screen.
  - An additional button below the box described above labeled "Register for Course" will register the student for the selected course(s) when pressed.

Modify Course Registration
- This button, when selected, will take the student to a new page that displays all current courses. Here, they are presented with the courses along with information including Course Number, Section Number, Course Name, and Grade.
- There will be a Drop Course button next to each course. If the student selects the option to drop the course, a confirmation window will appear displaying "Are you sure you wish to unregister from this course?" with buttons labeled "Yes" and "No." Selecting the "Yes" button will unregister that student from the course. Selecting the "No" button will return the user to the Modify Course Registration page. To confirm the choice, the user must click "OK."
- There will be a "Cancel" button next to the "OK" button that allows the user to exit the page.