

Team C

Team Members

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Background

Write a College Tour Planning application that allows a college student to plan a tour around a set of campuses and purchase souvenirs at each campus stop during the trip. The application should be able to recommend the most efficient way to tour a set of given campuses with a designated starting point. The application should also be able to keep track and report on souvenirs purchased at each stop and the total cost of all souvenirs.

In addition, the application should provide for an application administrator role who can import new campuses and souvenirs into the system as well use perform reporting and maintenance on the list of campuses and souvenirs (add, update, and delete).

Application Roles

College Student - the user of the system who should be able to register an account to log in, plan a college tour with different starting and end schools, purchase souvenirs at each destination

Application Administrator - the administrator should be able to add/remove users and designate accounts as user or administrator, perform system maintenance including adding/removing new schools and souvenirs, changing the price of souvenirs, as well as be able to perform all the roles of a College Student.

Story Points

The team has agreed to assign story points based on the hours needed to complete each story. The points will be assigned using the following sequence: 1 hour, 2 hours, 3, 5, 8, 13, 21, and so on based on the Fibonacci sequence.

Priority

The team decided to assign the sprint when the story will be worked on as the priority for each story. For example, a priority of 1 means the item will be worked on during the first sprint.

Agile Management Tool

The team has elected to use the Github project management tool. We will use a kanban board that has our product backlog and in-progress and done items indicated on the board. Each user story will be created as an ISSUE and supporting documentation and other non-programming tasks will be entered as DRAFT. Stories (ISSUE in github project) can further be broken down into sub-issues. Each Issue/sub-issue will need to create a branch in the github repository to work on the task. Once completed this branch will be merged into main via pull-request.

User Stories

Story 1 – User Login

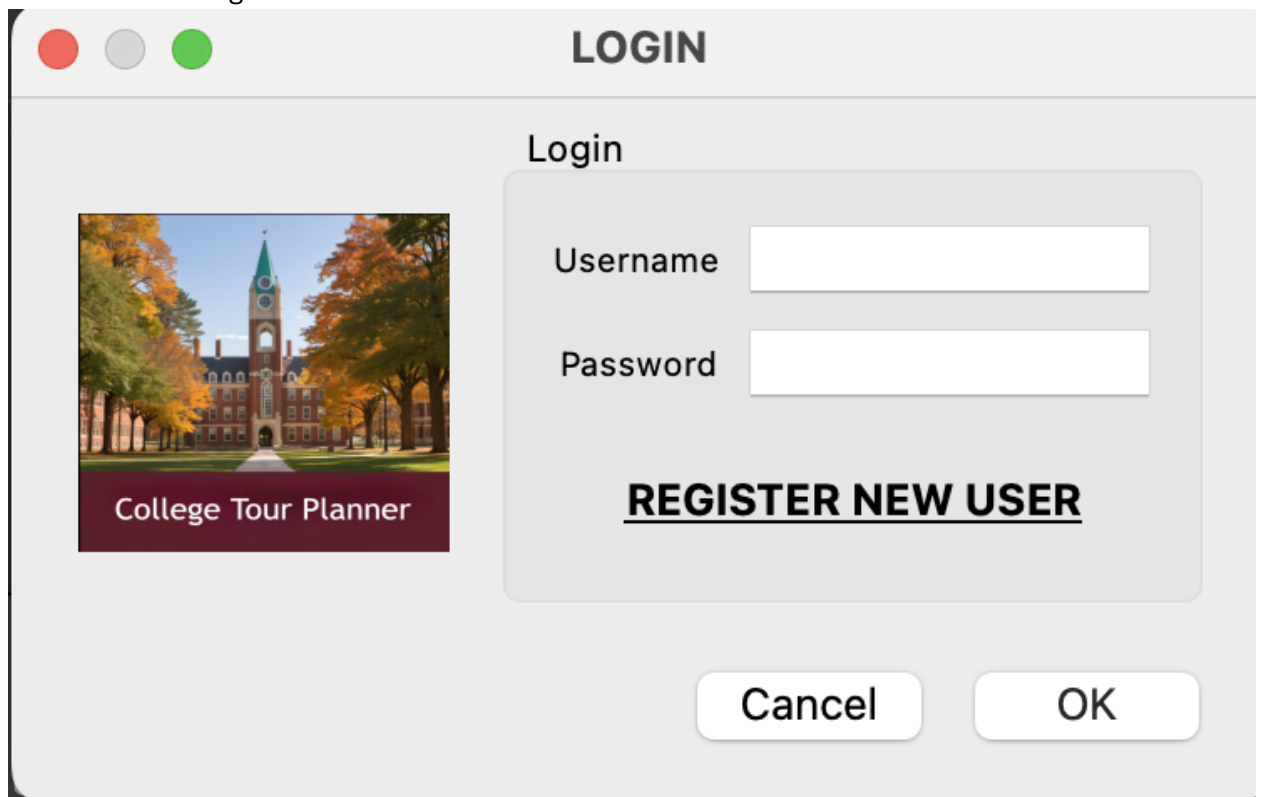
Description

As a college student I should be able to login to the application using the username and password that I used to register to the application. I should only be allowed to login with the incorrect username /password 3 times.

Tasks

1. Display Login Screen
2. Login Should have the following sequence

3. This is the draft login screen:



The image shows a draft login screen for an application titled "College Tour Planner". The window has a title bar with three colored buttons (red, gray, green) and the word "LOGIN" in bold. Inside the window, there is a section titled "Login" containing two input fields: "Username" and "Password". Below these fields is a link that says "REGISTER NEW USER". At the bottom right of the window are two buttons: "Cancel" and "OK". On the left side of the window, there is a small image of a college building with a clock tower, surrounded by trees with autumn foliage. Below the image is a dark red banner with the text "College Tour Planner" in white.

")

Tests

1. Verify that the user is prompted for the username and password.
2. Verify that the password is not displayed but instead show * for the entries.
3. Validate that a login can be successfully completed by entering the correct username and password.
4. Validate that an incorrect username will not allow a login.
5. Validate that an incorrect password will not allow a login.
6. Validate that 3 tries of an incorrect username/password combination will result into the application exiting

Assignee

TBD

Estimation

8

Priority

1

Definition of Done

The user should be able to successfully login to their account if they provide the correct username and password combination. Incorrect combinations of username and password should not allow any successful login and should exit the application after 3 unsuccessful attempts.

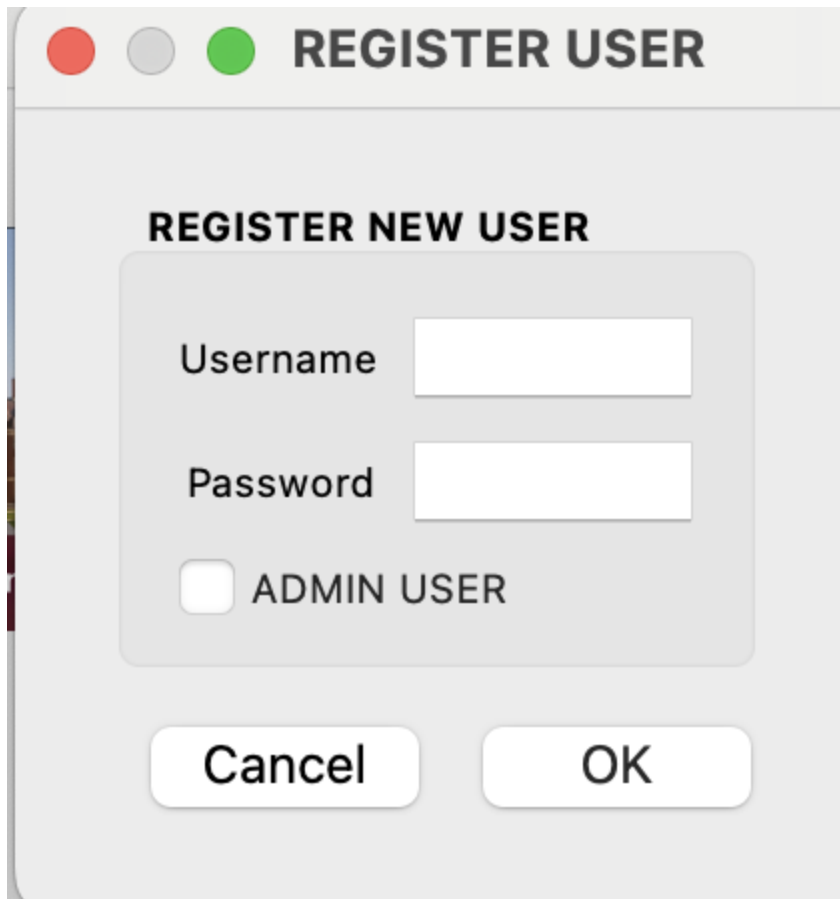
Story 2 – User Registration

Description

As a college student I should be able to register to the college tour planner to gain access to the system with a specified username and password.

Tasks

1. Create a link on the login page to allow a new user to register for an account.
2. The user should be prompted for a username and password.
3. The username should be validated to be not existing in the database, only unique usernames are allowed.
4. Register the user if username is unique.
5. Make sure the password is not blank
6. This is a mockup of the user registration page:



A screenshot of a macOS-style dialog box titled "REGISTER USER". The dialog has a light gray background and a title bar with three colored window control buttons (red, gray, green) on the left. Inside the dialog, there is a rounded rectangle containing the text "REGISTER NEW USER". Below this, there are two text input fields: "Username" and "Password". Below the "Password" field is a checkbox labeled "ADMIN USER". At the bottom of the dialog, there are two buttons: "Cancel" and "OK".

Tests

1. Test that the registration page can be reached from the login screen (register a new user)
2. Test the registration of a new unique username.
3. Test that a blank password cannot be entered.
4. Test that a duplicate username is now allowed.
5. Check that the newly registered account can login successfully into the system.

Assignee

TBD

Estimation

5

Priority

1

Definition of Done

The new user registration features should allow the registration of a new user and only unique usernames should be allowed to successfully register. The user should not be allowed to enter a blank password. The newly registered user should be able to login to the system.

Story 3 – Input College Data for Tour Planning Application

Description

As the administrator of the college tour planning application, I should be able to upload a base set of information into the application using CSV format (input file attached).

Tasks

1. Allow the application administrator to select a file that will have the college distance information.
2. The file format is CSV and have the following fields:
 - a. Start College - String
 - b. End College - String
 - c. Distance - Long
3. Validate the file format is correct, it will have a header row, and data fields with the format above.
4. The base set will overwrite whatever set is currently in the database.
5. Load the file into the college class.

Tests

1. Load a valid CSV file
2. Validate that the file is loaded successfully by printing the college distance report in the application.
3. Check if an invalid file can be loaded.

Assignee

TBD

Estimation

8

Priority

1

Definition of Done

The base college file can be successfully loaded into the college tour planning application.

Story 4 – Input Souvenir Data

Description

As the administrator of the college tour planning application, I should be able to upload a base set of souvenirs into the application using CSV format (input file attached).

Tasks

1. Allow the application administrator to select a file that will have the souvenir information.
2. The file format is CSV and have the following fields:
 - a. College - string
 - b. Souvenir - string
 - c. Cost - float
3. Validate the file format is correct, it will have a header row, and data fields with the format above.
4. The base set will overwrite whatever set is currently in the database.
5. Load the file into the souvenir class.

Tests

1. Load a valid CSV file
2. Validate that the file is loaded successfully by printing the souvenir report in the application.
3. Check if an invalid file can be loaded.

Assignee

TBD

Estimation

8

Priority

1

Definition of Done

The base souvenir file can be successfully loaded into the college tour planning application.

Story 5 – Main Menu

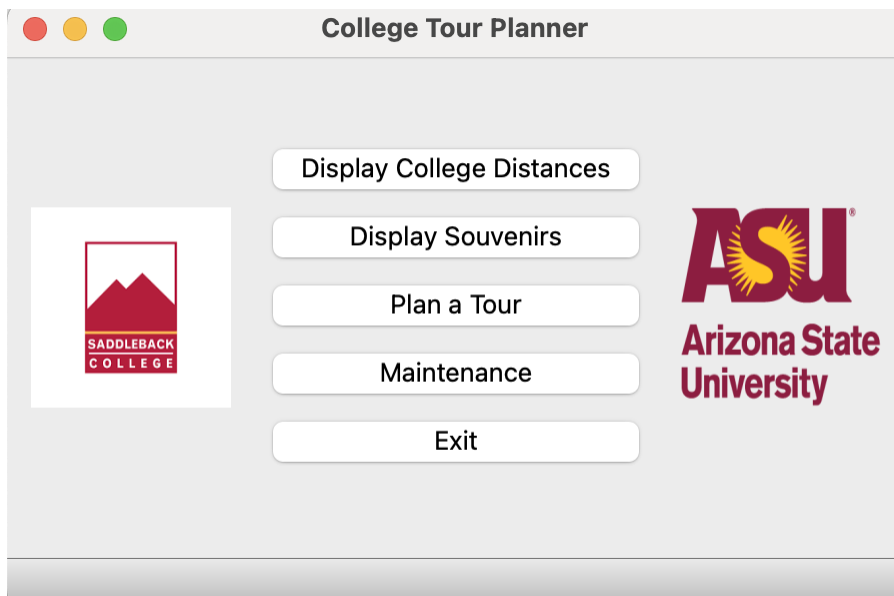
Description

As a college student the application should present a menu to allow me to pick the system features I want to use. The current menu items should include showing the list of colleges and distances,

the list of souvenirs, planning a tour, and for administrator account a maintenance feature, then an exit button to allow to exit the application.

Tasks

1. Create a menu that contains the following options:
 - a. Display College Distances
 - b. Display Souvenirs
 - c. Plan a Tour
 - d. Maintenance
 - e. Exit
2. Check the user class to see if the current user has admin privileges.
3. Only activate the Maintenance menu item if the current user has admin privileges.
4. A mock-up of the menu is shown below:



Tests

1. Validate that all the buttons allow the user to go to the specified feature.
 - a. Display College Distances shows Colleges Distances Screen
 - b. Display Souvenirs shows Souvenirs Screen
 - c. Plan a Tour shows the Tour Planner
 - d. Maintenance shows the Maintenance Screen
 - e. Exit - exits the system
2. Login a user with NO admin privileges and ensure the maintenance button is NOT ENABLED.
3. Login a user WITH admin privileges and ensure the maintenance button is ENABLED.

Assignee

TBD

Estimation

5

Priority

1

Definition of Done

A menu is successfully show to the user and each button delivers the user to the correct feature.
The maintenance features should only be enabled for users with admin privileges.

Story 6 – Display College Distances

Description

As a college student I should be able to list the campuses loaded into the college tour planning application and see the distance from Saddleback College.

Tasks

1. The college distances will be in the college class.
2. The class will have the following information
 - a. Starting College - string
 - b. Ending College - string
 - c. Distance (in miles) - long
3. Load the start college, end college, and distance information into the display box to show the information to the user.

Tests

1. The screen should show all the colleges and their distances from Saddleback College.
2. Make sure college information displayed are correct.
3. Make sure the distance information displayed are correct.

Assignee

TBD

Estimation

5

Priority

2

Definition of Done

A report showing the list of colleges and their distance from Saddleback College is successfully displayed.

Story 7 – Display Souvenirs

Description

As a college student I should be able to list the souvenirs and their cost for the campus that I select.

Tasks

1. The souvenir list will be in the souvenir class.
2. The class will have the following information
 - a. College - string
 - b. Souvenir- string
 - c. Cost - float
3. Allow the user to select the college they want to display the souvenirs for.
4. Load the selected college, souvenir, and cost information into the display box to show the information to the user.

Tests

1. The screen should show all the souvenirs and their costs from the selected college.
2. Make sure souvenir information displayed are correct.
3. Make sure the cost information displayed are correct.
4. Select different colleges to verify the information for each

Assignee

TBD

Estimation

5

Priority

2

Definition of Done

A report showing the list of souvenirs and their cost from the selected college is successfully displayed

Story 8 – Plan a Custom Trip

As a prospective student, I can select the colleges I want to visit and have the most effective route planned out for me.

Description

I can select the starting college I want to visit. I can select all the other colleges I wish to visit. I can locate the college to determine the distance travelled as well as the most efficient route and plan.

Tasks

1. As a prospective student, I can select the college I want to visit first, my starting point
2. As a prospective student, I can select all the colleges that will be part of my trip
3. The application should present the most efficient route for me to visit the colleges I specified by selecting a route with the minimum distance.
4. As a prospective student, the planned route should show the total distance I've travelled

Tests

1. Verify the user can see the list of colleges that can be visited.
2. Verify the user is able to select their first college that will be the starting point of the tour.
3. Verify that a list of colleges can be selected that will be the ones visited in the tour.
4. Verify the application can plan the most efficient route to visit the selected colleges in the tour.
5. Verify the distance travelled is added and displayed for the user

Assignee

TBD

Estimation

8

Priority

2

Done

The prospective student is allowed to see the list of colleges and choose their first one. An efficient route is then planned out based on the distances from that first college to the next and so on. The user will see their total distance travelled and it should be the shortest route.

Story 9 – Purchasing Souvenirs

As a prospective student at these colleges, I can buy souvenirs from the colleges I am visiting.

Description

I can see the list of items available in each college shop. I can see the list of traditional souvenirs. I can select an item to purchase. I can go back to the original list of items to purchase multiple times. I can see the amount of money I have spent on each campus and the amount of money I have spent in total.

Tasks

1. As a prospective student, I can see the souvenir items available in each campus shop.
2. As a prospective student, I can see what the price of each traditional souvenir.
3. As a prospective student, I can choose multiple traditional souvenirs I would like to buy.
4. As a prospective student, I can see the total amount of money I have spent at that college.
5. As a prospective student, I can see the grand total of money I have spent at all the colleges.

Tests

1. Verify the user can see the list of items.
2. Verify the traditional souvenirs are highlighted.
3. Verify the user can select multiple items to purchase.
4. Verify the total of these selected items are displayed for the user.
5. Verify the amount of money spent at each college can be added together to make a grand total.

Assignee

TBD

Estimation

5

Priority

2

Done

A prospective student is allowed to see the items available to buy and select multiple ones. These items' prices are added together to create a total for that college. The total is then added to the grand total to create a sum of money spent at every college.

Story 10 – Plan a Trip from Saddleback College

Description

As a prospective student, I can plan the most efficient tour starting from Saddleback College and visiting the initial 11 colleges on the base set.

Tasks

1. Load the base college set (11 colleges) into the college class.
2. Recursively choose the campus closest to the last campus starting with Saddleback college
3. Keep selecting colleges until all 11 base colleges are visited.
4. Load the selected college into the display box.
5. Allow the user to purchase souvenirs at the current campus.
6. Accumulate the distance travelled starting from Saddleback College and display the total distance travelled to visit all 11 base colleges.

Tests

1. Verify that 11 base colleges are visited.
2. Verify that the total distance traveled is displayed.
3. Verify the user is able to purchase souvenirs.

Assignee

TBD

Estimation

3

Priority

2

Done

The prospective student is allowed to visit all the base 11 colleges starting from Saddleback College in the most efficient manner, the route is displayed, and the total distance traveled is displayed.

Story 11 – Plan the Shortest Trip from Arizona State

Description

As a prospective student, I can plan the shortest tour starting from Arizona State University and visiting the number of colleges I specify.

Tasks

1. Select Arizona State University as the starting point.
2. Allow the user to enter the number colleges to visit in the tour.
3. Recursively choose the campus closest to the last campus starting with Arizona State University.
4. Keep selecting colleges until the number of colleges specified by the user has been visited.
5. Load the selected college into the display box.
6. Allow the user to select souvenirs to be purchased in the current campus.
7. Accumulate the distance travelled starting from Arizona State University and display the total distance travelled to visit all 11 base colleges.

Tests

1. Verify that ASU is the starting point.
2. Verify that the a correct number of college can be entered.
3. Verify that no more than the number of colleges-1 can be entered as the number to be visited in the tour.
4. Verify the shortest trip was selected.
5. Verify that the user is able to purchase souvenirs.

Assignee

TBD

Estimation

3

Priority

3

Done

The prospective student is allowed to specify the number of colleges to visit starting with Arizona State University and the shortest route is selected. The route is displayed, and the total distance traveled is displayed.

Story 12 – Plan the Tour from University of California, Irvine

Description

As a prospective student, I can plan the most efficient tour starting from University of California Irvine and visit 13 college campuses.

Tasks

1. Load the college set into the college class.
2. Recursively choose the campus closest to the last campus starting with UCI
3. Keep selecting colleges until all 13 colleges are visited.
4. Load the selected college into the display box.
5. Allow the user to select souvenirs to be purchased in the current campus.
6. Accumulate the distance travelled starting from UCI and display the total distance travelled to visit all 13 colleges.

Tests

1. Verify that 13 colleges are visited.
2. Verify that the total distance traveled is displayed.
3. Verify the user is able to purchase souvenirs.

Assignee

TBD

Estimation

3

Priority

3

Done

The prospective student is allowed to visit all the base 13 colleges starting from UCI in the most efficient manner, the route is displayed, and the total distance traveled is displayed.

Non-Functional Requirements

Deliverables

1. GUI Based Application
2. Contingency Handling (Input Validation)
3. At least 10 Agile Stories (including description, tasks, test scenarios, and story points. Follow the scrum process, SRUM MASTER *must document all meetings*, and PRODUCT OWNER *must document the backlog*)
4. Submit the following DIAGRAMS: 3 use cases diagrams, 3 activity diagrams, 1 class diagram
5. All changes must be persistent between executions (save input data).
6. Submit a discussion of the Big-Oh of your project for at least 3 methods.
7. Identify all the data-structures used.
8. Each team must use a version control system (only team members should have access to their repository), graphical user interface tool (Qt), automated documentation tool (doxygen), and an agile management tool (GitHub).

Schedule

Checkpoints

First checkpoint - February 12

Second checkpoint - February 26

Final checkpoint - March 12