Gordon Petry

https://github.com/gpetry37/BeaconResources

VM Name: csc415-server13.hpc.tcnj.edu

Student1 Password: S1se41501fall2020!

Directory: ~/vm-csc415/assignments/BeaconResources

Assignment 3

Analysis and Design Document

Use Case Descriptions

Use case: Select a filter to view relevant resources
Primary Actor: User
Goal in context: Allow for users to select the filter that applies to the type of research they are specifically looking for.
Preconditions: Data has been pulled from the database and organized into their assorted categories.
Trigger: User selects the category of their choice from the filters.
Scenario:

1. User navigates to the website
2. User hits “Runaway Youth Shelter” from filters
3. Page renders options under this category under each county

Exceptions:

1. None

Priority: Primary essential, must be implemented
When available: First increment
Frequency of use: Many times a day
Channel to actor: Via constructed web site
Secondary actors: None
Channels to secondary actors: None
Open issues:

1. In what order should resources be displayed?

Use case: Admin sign in
Primary Actor: Admin
Goal in context: Allow admins to sign in

Preconditions: Admin account is created
Trigger: Admin selects “Sign In”
Scenario:

1. Admin navigates to the website
2. Admin hits “Sign In” on the page
3. Admin enters username and password
4. Admin hits “Sign In”

Exceptions:

1. Database has not been created
2. Password Incorrect: Re Enter password

Priority: Secondary essential, must be implemented
When available: First increment
Frequency of use: Single time per navigation to site
Channel to actor: Via constructed web site
Secondary actors: None
Channels to secondary actors: None
Open issues:

1. How are accounts created? I’m thinking the site owner must automatically add them.

Use case: Add a resource
Primary Actor: Admin
Goal in context: Allow admins to add a resource
Preconditions: Database is setup and allows for admin input
Trigger: Admin selects “Add Resource”
Scenario:

1. Admin navigates to the website
2. Admin hits “Add Resource” on the page
3. Page renders to allow for admin to input data about the resource
4. Admin hits “Submit”

Exceptions:

1. Database has not been created
2. Admin is not signed in

Priority: Secondary essential, must be implemented
When available: After admin is signed in
Frequency of use: As many times as needed
Channel to actor: Via constructed web site
Secondary actors: None
Channels to secondary actors: None
Open issues:

1. How should this be accessed, through a sidebar similar to adding a resource or through the resource itself?

Use case: Remove a resource
Primary Actor: Admin
Goal in context: Allow admins to remove a resource
Preconditions: Database is setup and allows for admin input
Trigger: Admin selects “Remove Resource”
Scenario:

1. Admin navigates to the website
2. Admin hits “Remove Resource” on the page
3. Page renders to allow for admin to input data about the resource
4. Admin selects “Remove” on the resource they want to remove

Exceptions:

1. Database has not been created
2. Admin is not signed in

Priority: Secondary essential, must be implemented
When available: After admin is signed in
Frequency of use: As many times as needed
Channel to actor: Via constructed web site
Secondary actors: None
Channels to secondary actors: None
Open issues:

1. How should this be accessed, through a sidebar similar to adding a resource or through the resource itself?

Use case: Add a suggestion of a resource to site
Primary Actor: User
Goal in context: Allow for users to create a suggestion for administrators to add additional resources to the site.
Preconditions: Database has been setup to allow user suggestions
Trigger: User selects “Suggest Resource” on the web page
Scenario:

1. User navigates to the website
2. User hits “Suggest Resource” on the page
3. Page renders to allow for user to input the name and location of a resource for administrators to look into further

Exceptions:

1. Database has not been created

Priority: Tertiary essential, must be completed

When available: First increment
Frequency of use: As many times as needed
Channel to actor: Via constructed web site
Secondary actors: Administrators
Channels to secondary actors: Through database suggestions
Open issues:

1. How should this be accessed, through a sidebar?

Use case: Suggest removal of a resource to site
Primary Actor: User
Goal in context: Allow for users to add a suggestion for administrators to remove a resource from the site.
Preconditions: Database has been setup to allow user suggestions
Trigger: User selects “Suggest Resource” on the web page
Scenario:

1. User navigates to the website
2. User hits “Suggest Resource” on the page
3. Page renders to allow for user to input the name of the resource as specified on the site and a description of why it should be removed

Exceptions:

1. Database has not been created

Priority: Tertiary essential, must be completed
When available: First increment
Frequency of use: As many times as needed
Channel to actor: Via constructed web site
Secondary actors: Administrators
Channels to secondary actors: Through database suggestions
Open issues:

1. How should this be accessed, through a sidebar similar to adding a resource or through the resource itself?

Use case: View Suggestions
Primary Actor: Admin
Goal in context: Allow admins to view add or removal suggestions
Preconditions: Database has been setup to allow user suggestions, admin is signed in
Trigger: Admin selects “View Suggestions” on the web page
Scenario:

1. Admin navigates to the website
2. Admin hits “View Suggestions” on the page

Exceptions:

1. Database has not been created

Priority: Tertiary essential, must be completed
When available: When admin is signed in
Frequency of use: As many times as needed
Channel to actor: Via constructed web site
Secondary actors: None
Channels to secondary actors: None
Open issues:

1. None

Use case: Enter location and view closest options nearby
Primary Actor: User
Goal in context: Allow users to view resources nearby them
Preconditions: User has entered a valid location
Trigger: User selects “Enter location” on the web page
Scenario:

1. User navigates to the website
2. User hits “Enter location” on the page
3. User enters a location
4. Page renders and displays options closest

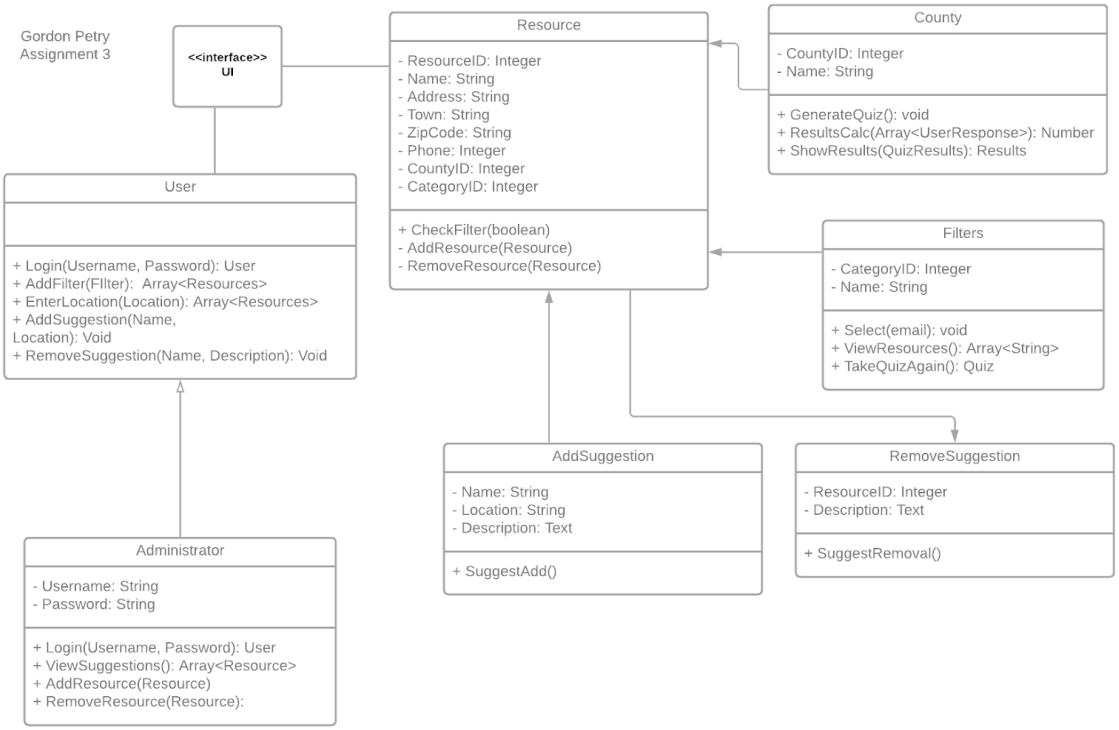
Exceptions:

1. Location is invalid
2. Algorithm is not implemented

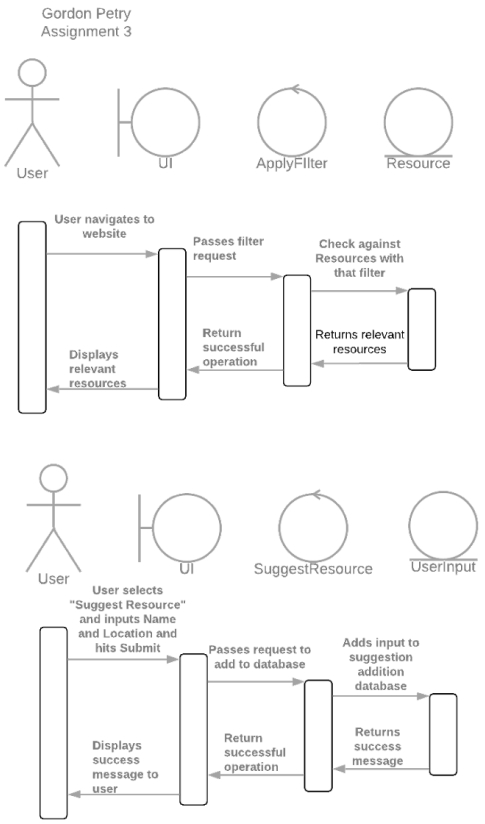
Priority: Primary extra, will be completed if there is time
When available: First increment
Frequency of use: As many times as needed
Channel to actor: Via constructed web site
Secondary actors: None
Channels to secondary actors: None
Open issues:

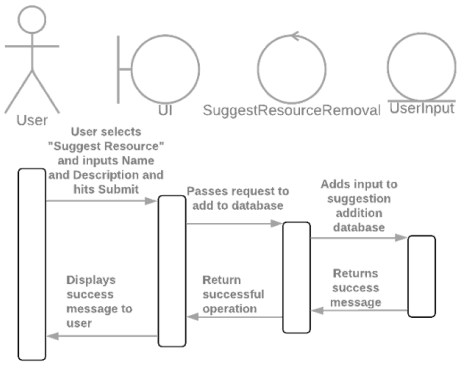
1. How could this algorithm be implemented? Should it be based on zip code to simplify searching?

Detailed Design Class Diagram

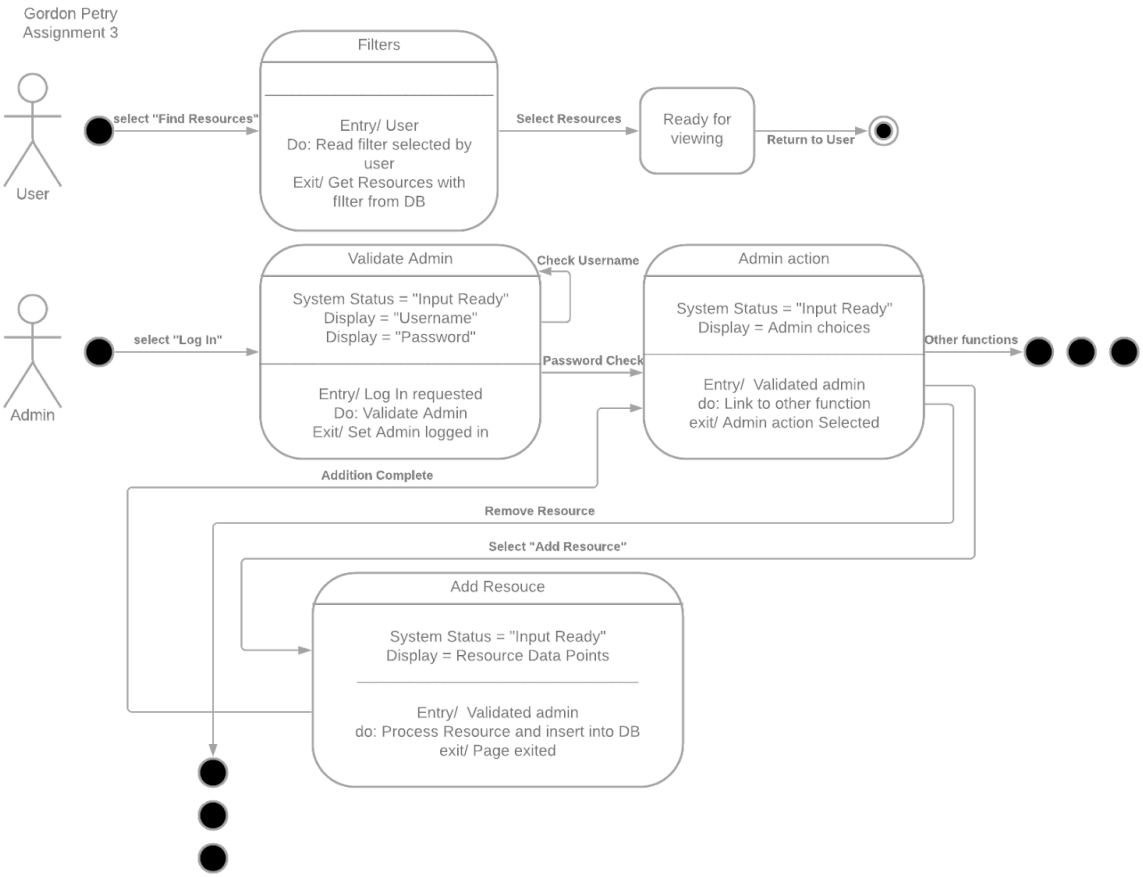


System Sequence Diagram

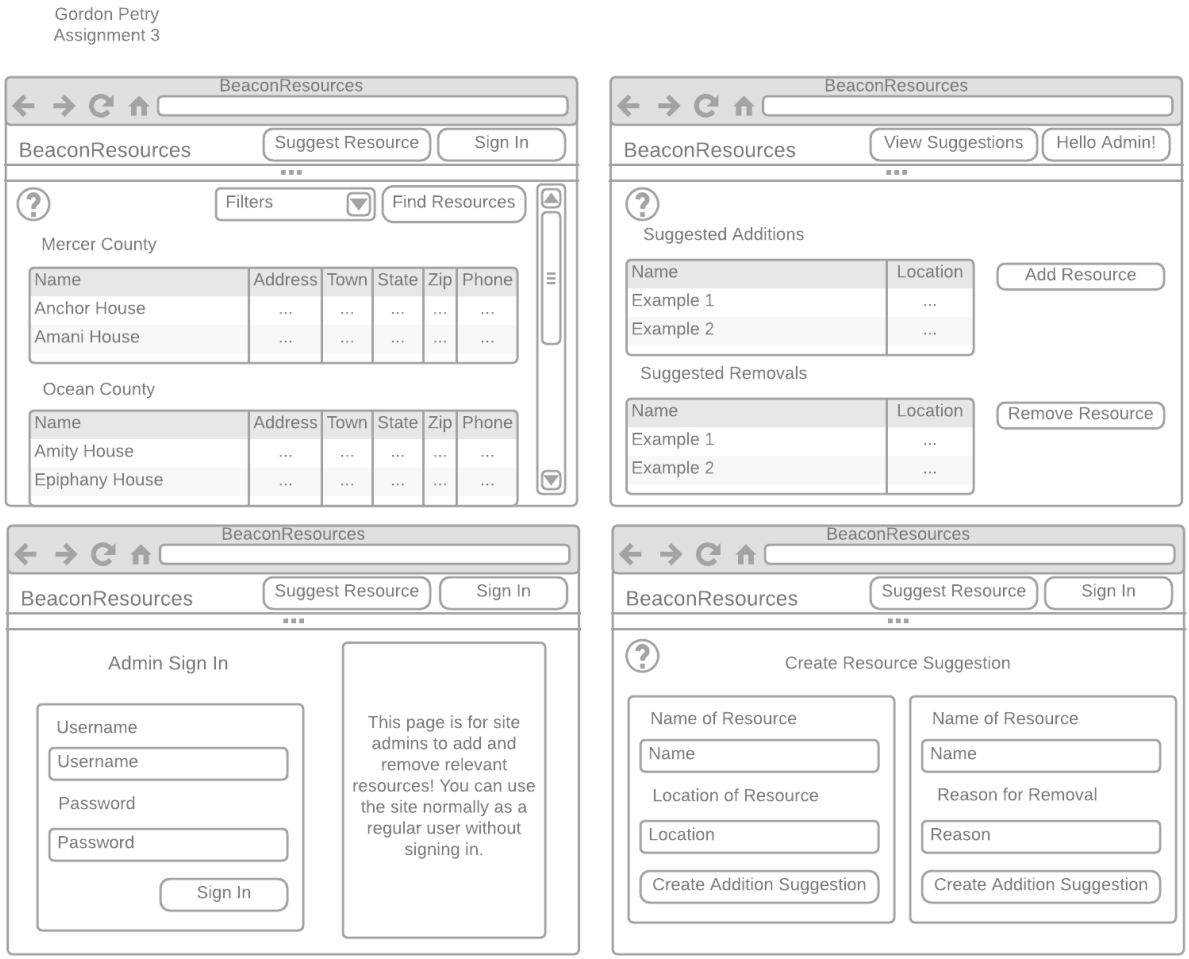




Statechart


Gordon Petry
Assignment 3
User
select "Find Resources"
Filters
Entry/ User
Do: Read filter selected by user
Exit/ Get Resources with fIlter from DB
Select Resources
Ready for viewing
Return to User
Admin
select "Log In"
Validate Admin
System Status = "Input Ready"
Display = "Username"
Display = "Password"
Entry/ Log In requested
Do: Validate Admin
Exit/ Set Admin logged in
Check Username
Password Check
Admin action
System Status = "Input Ready"
Display = Admin choices
Entry/ Validated admin
do: Link to other function
exit/ Admin action Selected
Other functions
Addition Complete
Remove Resource
Select "Add Resource"
Add Resouce
System Status = "Input Ready"
Display = Resource Data Points
Entry/ Validated admin
do: Process Resource and insert into DB
exit/ Page exited

UI Mockups



This application will provide visibility to the user by showing the user exactly what's happening by selecting specific options on the page. By selecting an option on the dropdown and hitting "Find Resources", the user will be led to the next page displaying this information. This also goes for affordance, as the user should be able to look at the buttons and options available to them on the page and intuitively be able to work with them off the bat. The mockups I have created demonstrate the 8 golden rules for designing interactive interfaces in the following ways:

1. The UI is consistent in that all of the information is in the same location each time the page is loaded. The top always contains the same top bar, the main page always contains either information input or some database tables for viewing.
2. There isn't really a need for shortcuts within the application seeing that there are few pages to navigate through, but all the links accessible are always contained within the current page based on the user, so this should be fine.

3. The current state of the site is relatively self explanatory, but there is still a help icon for those with questions. On sites irrelevant to specific users there are text boxes to describe what is required of the user.
4. Upon signing in or adding a suggestion, there will be a popup to indicate that the action went through and that information was received.
5. When adding or removing a resource or suggestion, the user will be prompted with a box to check that they are finished inputting information to prevent any misclicks or errors.
6. Simply unselecting the filter for the user will undo any selections they have made since only one can be selected from the dropdown list at a time.
7. The site, from my point of view, is relatively easy to understand and intuitive. Everything the user needs to access is just a click away and if they need more information, they can just click the help icon.
8. Since everything the user needs to do can be done at a glance, there is really no load for the short term memory for the user to handle, as the options available to them will be right at the drop down.

Modularity, efficiency and database appropriateness of the application.

- Modularity plays a big role in the simplicity of the project! By making the application modular, it will make it much easier to read and understand for those who take on the project in the future. With a modular approach, we can also ensure that different data points are changed when we want them to be. By using encapsulation through ruby's accessor methods, we can isolate the data so that only certain parts of classes can be changed. By making things private in this way, we make it so that the code cannot be manipulated by those who want to do harm to the application. Through this application, I aim to do just that. By allowing only admins to change anything about the resources themselves, we can make it so that regular users cannot access different parts of the program without a login.
- Through this application, my biggest focus was simplicity for the users. By working towards this, we can achieve elegance and efficiency in our algorithms in that we simply only need them to be able to view and suggest information. This is done as simply as possible by allowing them just to input some things such as a name of a location they want to suggest or a name and the description of why it should be removed. This is then given to the admins to look into further so we don't have people putting in incorrect suggestions because of a bad experience there and then removing the resource themselves. By allowing users to only work with a few things on their end we are keeping it straight forward and simple, and thus there is the elegance. On the end of the administrators, I hope to allow them to access exactly what they want and then leave without any issues. As shown in the state diagram, we can see that when an admin signs in, they have their choice of which action they want to perform and then allow them to

leave the site afterwards. As I mentioned, simplicity in the algorithms will keep it both elegant and efficient.

- By using databases for each of the different points, addition suggestions, removal suggestions, and resources themselves, I will be able to appropriately restrict access to specific users. For example, only Admins are allowed to change anything about the resource database, but both suggestion databases can be altered in any way that is necessary. By using the same form of database throughout, the application maintains its simplicity by allowing us to restrict information and access it all at a glance very easily, as is the intention with the project.