SW Engineering CSC648/848 Fall 2018
Gator Exchange
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1.0	October, 18 2018	Submitted for review

1.Data Definitions V2:

<u>Registered User:</u> These users are users
who are registered to our site, they have a login name, and a password that
allows them to do things Unregistered Users cannot. Registered Users can read
and view posts, comment or contact a seller, post a selling item, and login.

<u>Unregistered User:</u> are users who do not
have a login name or password that allows them to do somethings registered
users can. This type of user will have the ability to read and view posts, fill
out posting information, but not be able to post until signing up for the
website. Will have the ability to begin posting, however when they go to submit
they will be prompted to login or register to post the item.

<u>Admins:</u> are the people in charge of managing posts and making sure
a post is appropriate for the website. They can do everything Registered Users
can do, as well as accepting posts, deleting posts, banning users, and deleting
Users.

<u>Post function:</u> Will allow registered users to post items
that they want to sell. If a user is logged in the user will have a
window where he or she will insert title of the post, add image or images, put
price, optional description, and contact information.

<u>Registration</u>- This feature will allow an Unregistered
User to register. If nobody is logged in and a user is about to post, contact a
seller, or etc. a registration will prompt up at the last possible moment.

Search- A search field will be president on top of our dashboard page next to a category selection option. This function will allow Registered or Unregistered Users to search items categorically. Once the search button has been clicked, the items closes fitting the category and words put in by

2. Functional Requirements V2:

I. User (Unregistered) functional requirements

#	priority	requirement
1.01	1	Unregistered users shall be able to search using item type categories
1.02	1	Unregistered users shall be able to view items per page up to 48
1.03	1	Unregistered users shall be able to view postings
1.04	1	Unregistered users shall be able view website and items without an account
1.05	1	Unregistered users shall create an account to sell or buy
1.06	2	Unregistered users shall be able to view sellers' basic information (Name, General area of preferred transaction)
1.07	2	Unregistered users shall be able to search for products with search bar

II. User (Registered) functional requirements

#	priority	requirement
2.01	1	Registered users shall be able to communicate between buyer and seller
2.02	1	Registered users shall be able to create a selling post
2.03	1	Registered users shall be able to view their account, includes order history, current selling, and profile information (account dashboard)
2.04	1	Registered users shall be able to buy item, by agreeing to price and setup with buyer for transaction place and time
2.05	1	Registered users posting shall not be altered by other entities
2.06	1	Registered users shall agree to terms and conditions before posting
2.07	1	Registered users shall follow guidelines or user's post shall be disabled from being public
2.08	1	Registered users shall be able to edit an existing post
2.09	1	Registered users shall be able to upload a maximum of 5 photos in the post
2.10	1	Registered users shall add a title, description, category, and price in the post
2.11	2	Registered users additional information shall be able to revealed by user after agreed transaction (Preferred contact information, and meet up location)
2.12	3	Registered users shall be able to comment on the post in the comments section

III. Admin functional requirements

#	priority	requirement
3.01	1	Admins shall be able to disable postings that violate guidelines
3.02	1	Admins shall be able to monitor any postings
3.03	1	Admins shall be able to access all data and content and modify the database
3.04	1	Admins shall approve or deny registered users' post before publication
3.05	2	Admins shall be able to ban users who violate guidelines

3. UI MockUp and Storyboard (high level Only)

A. Home Page

- The homepage is the landing page for a user.
- The homepage features a navigation bar that includes a home button logo titled GatorExchange.
- Users have the option to click on sell; however it is exclusive to registered users, so a registration form will appear.
- Users have access to a search bar which navigates through all items.
- The search bar has a category selector which can narrow down the search
- Users are presented with a dashboard of recent items underneath the search bar.
- Underneath the dashboard are a list of items currently on the website and are separated by category.
- Items are shown in a tab style.

- Items can be clicked on, and viewed by any user. There are different options for a registered and unregistered user.

B. Search Results
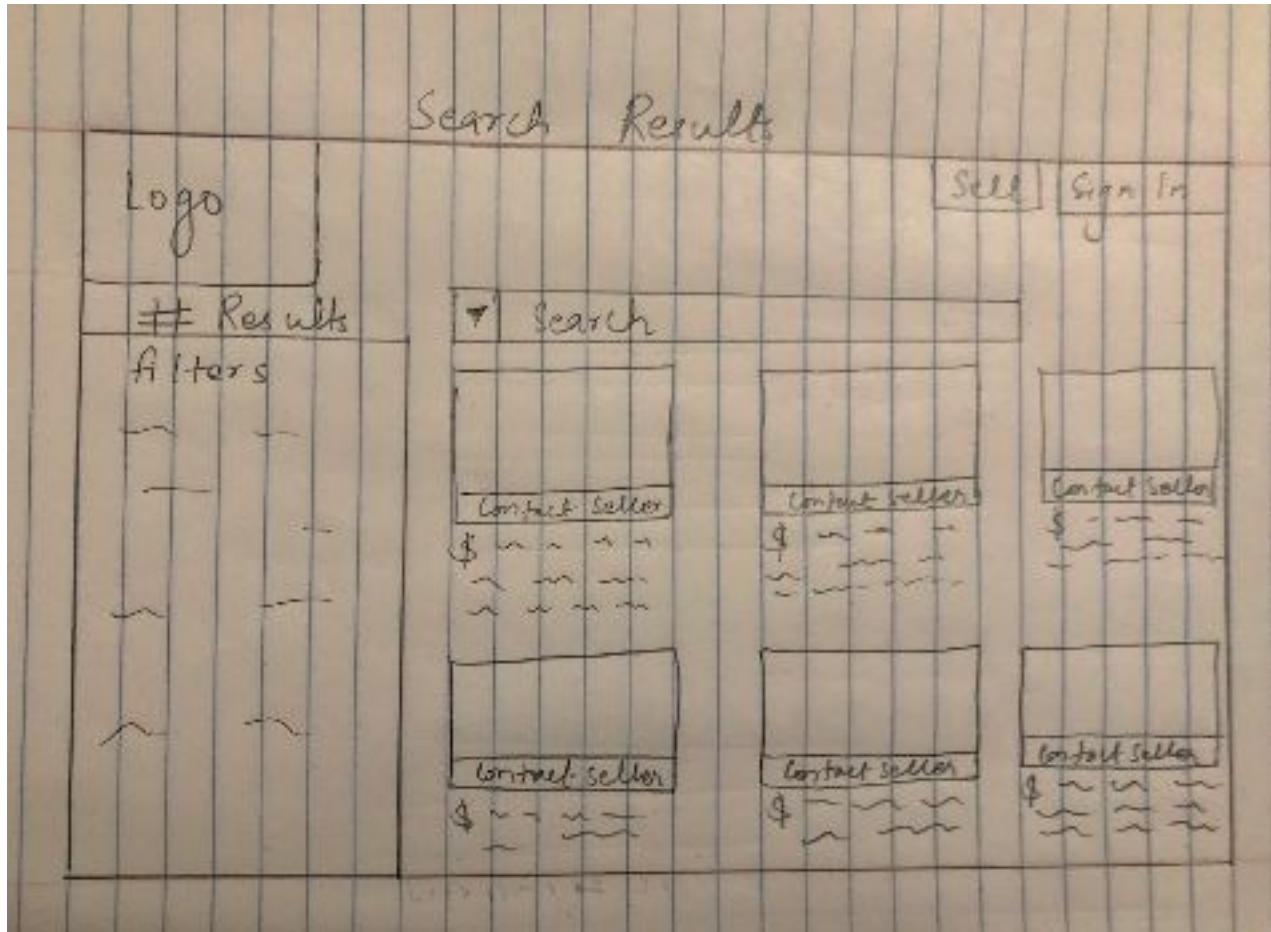
- After a User searches, the user is presented with a search results page.
- The search results page has a list of results of items
- These items include an image, a description, and a price.
- Items are clickable and a new window will show up accordingly.
- Items are displayed based on category specified.
- Items are displayed on the right portion of the page.
- The left portion of the page is going to be a list of filters.
- Filters allow the user to further narrow down their search.
- On top of the filters area, is a number indicating how many results have been found.
- Users have the option to return to the homepage through the navigation bar on the top of the page.

- Users have the option to search again

C. Posting
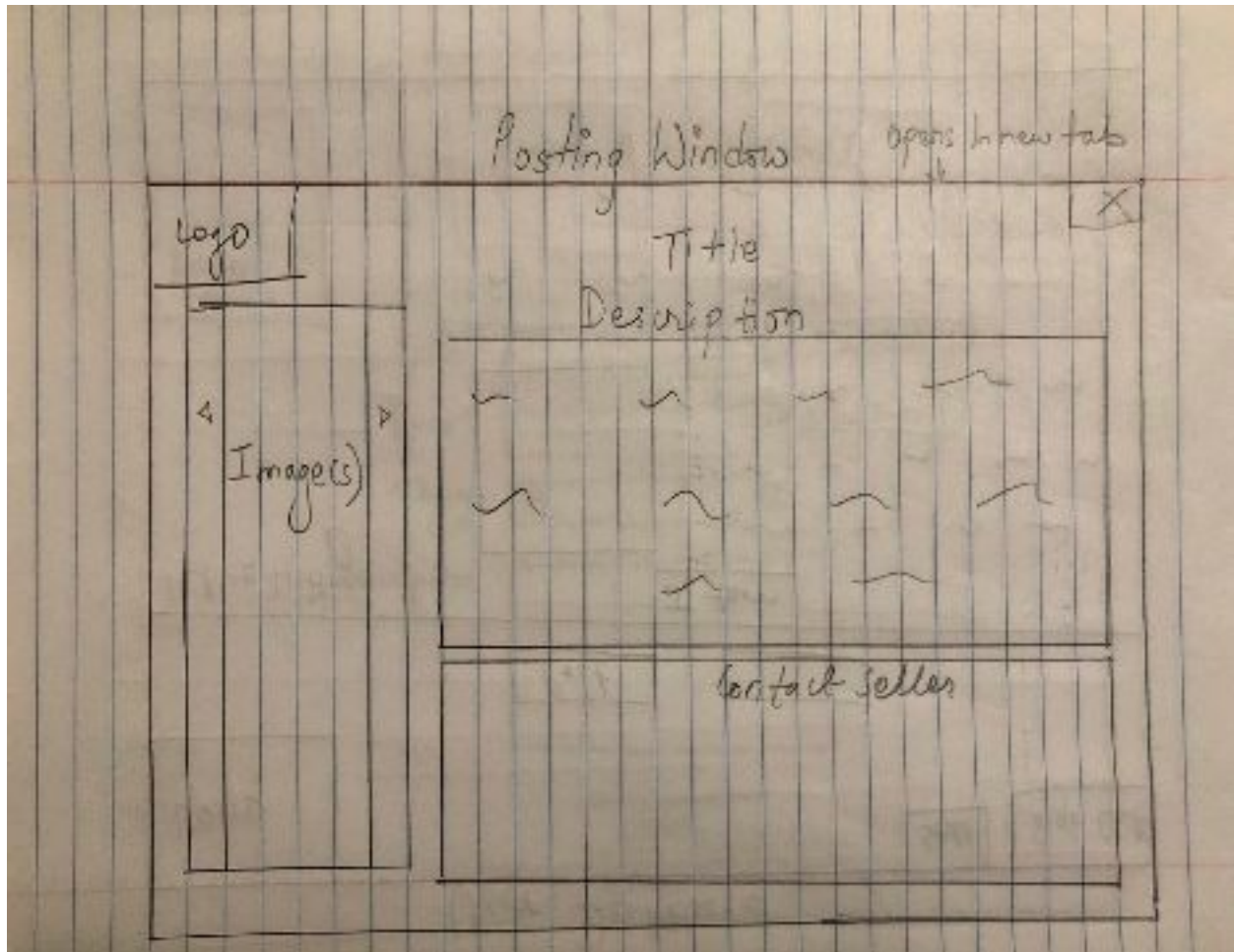
- This is the posting window that pops up for a user if they click on an item.
- The item's gallery will be shown on the left. It consists of user uploaded images of their item.
- There will be an area for a description of the item being sold.
- Following the description, there is an area for a registered user to contact the seller.
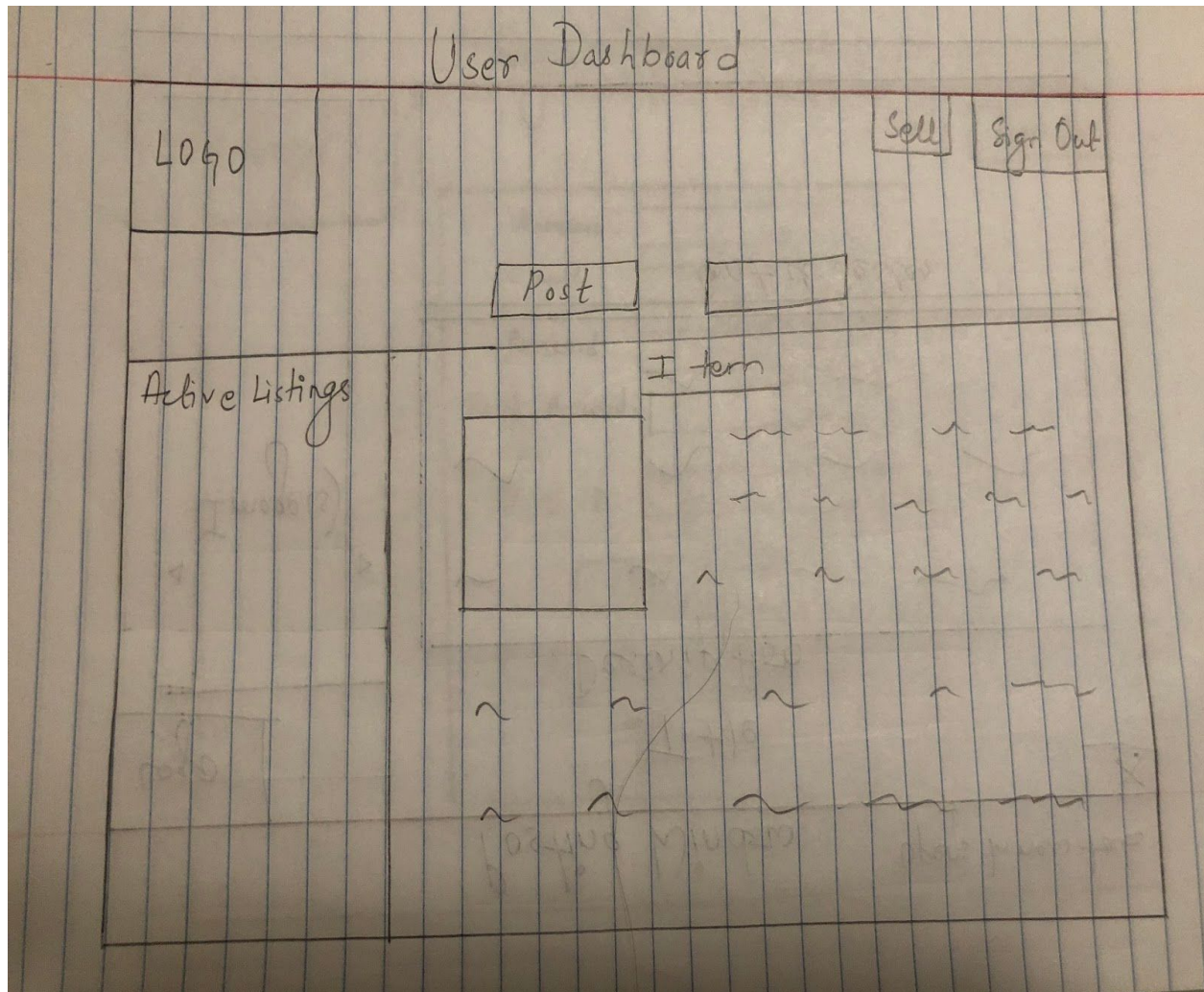- Users can contact the seller by providing a message and their email information.

D. Sign Up

- The register form is an overlay form that will pop up over the current page on the website.
- Users can use this form to register here.
- There will be mandatory forms, being username, email, and password.
- There is an option for existing users to sign in.

E. User Dashboard

- A registered users dashboard shows up to a user who signs in.
- The registered user has a large area on the right which displays their previously viewed items.
- There will be a section on the left for active listings that they have posted themselves.
- Registered users will have an option to post an item through their dashboard.
- Registered users can also search the website through their dashboard

F. Sell/ Create a Listing

- This is the page for a user to create a listing.
- This page is navigated to through the sell button on the navigation bar.
- Listings have mandatory fields title, price, and category.
- Category is a drop down menu which displays a list of categories a user can pick from
- A description form is also provided.
- The post button serves two purposes. A registered user can use this to make a new post. An unregistered user will be prompted to either sign in or register.

4. DB Organization

The main DB tables will include:

- Users - which will allow users to login and register
  - Username: String
  - Password: String
  - (PRIMARY) UserId: Integer
  - numOfPosts: Integer
  - pendingNumOfPosts: Integer
  - approvedNumOfPosts: Integer
- Admin - which is the same as a User but categorized differently as not to mix, will probably not allow them to buy or sell.
  - Username: String
  - Password: String
  - (PRIMARY) AdminId: Integer
  - numOfPostsWaiting: Integer
  - numOfPostsApproved: Integer
- Merchandise - this way the items that are posted will be logged and kept track
  - (FOREIGN) UserId: Integer
  - (PRIMARY) PostId: Integer
  - Title: String
  - Description: String
  - ImageAddress: String or Image:Blob
  - Amount: Float
  - Category: String
- Messages - log users that have attempted to reach each other and allows the messages to be saved for future use.
  - (FOREIGN) UserSellerID: Integer
  - (FOREIGN) UserBuyerID: Integer
  - (PRIMARY) MessageID: Integer
  - Log: String

Media Storage

Media will be kept in storage via MongoLab.

Search/filter architecture and implementation:

Items from the user will be split up into categories, and each item will be marked with a category as marked in the Merchandise DB Table. Users will be able to choose from a simple drop down category menu in order to narrow down their search.

A secondary search bar will also be provided which should allow the user to type in exactly what they are looking for possibly through the use of SQL's select command and %like. This way if the user doesn't fully type what they want into search %like will be able to pop with results that are similar. Possible implementation of allowing users to input tags for their merchandise that, despite not being in the title if the tag is searched for that item will show up as well.
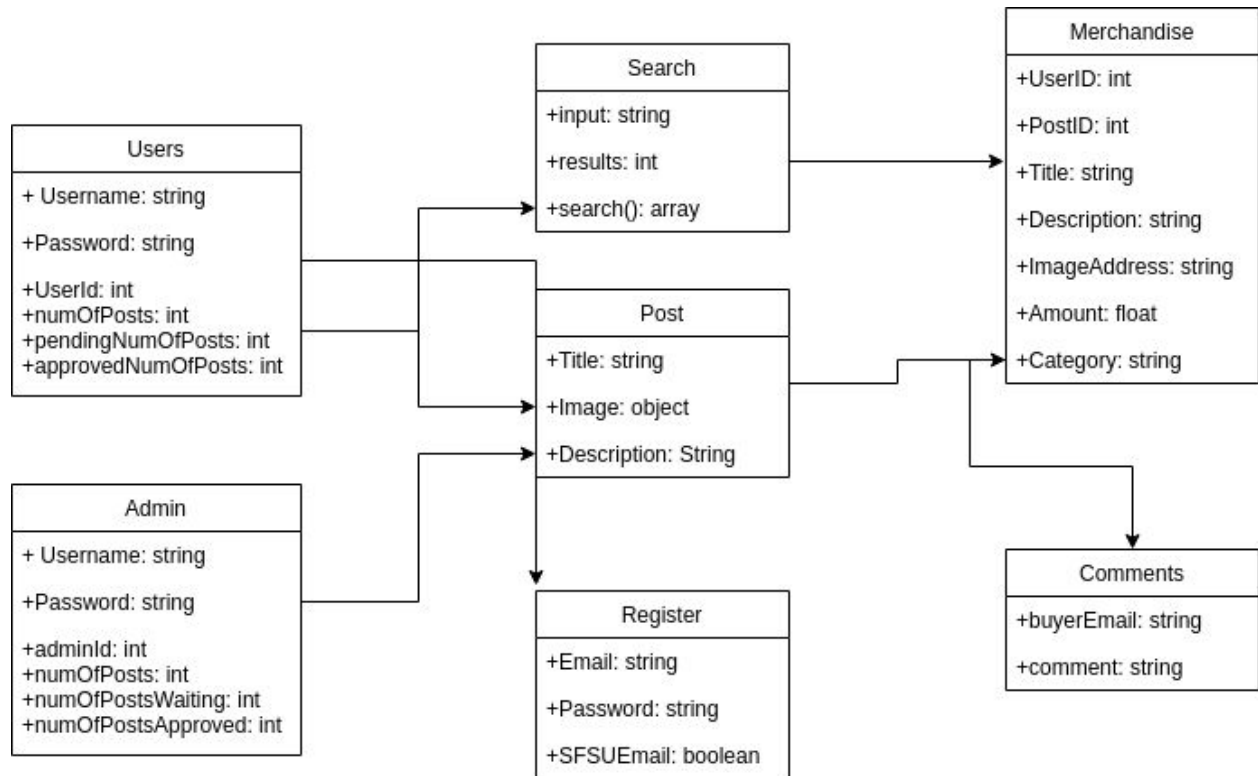
Both search features can also be used together for the user to minimize the range in order to find what they are looking for, but for early tests using both may be excessive.

Processing Algorithm

The posts that are acquired through search should start with relevance, because if a person looks up a red couch but there is a cheaper red shirt we want to be able to display the red couch first and not the red shirt. Although if there are 2 red couches the cheaper one should definitely be on top. Also, with the implementation of sellers being allowed to put in a few dollars to have their item advertised to always be featured and on top of the list in the category of which the product is put in. We wouldn't want textbooks to be featured if the buyer decides to look up computer keyboards.

5. UML Diagrams

High-level UML class diagrams

Search

+input: string

+results: int

+search(): array

Merchandise

+UserID: int

+PostID: int

+Title: string

+Description: string

+ImageAddress: string

+Amount: float

+Category: string

Users

+ Username: string

+Password: string

+UserId: int
+numOfPosts: int
+pendingNumOfPosts: int
+approvedNumOfPosts: int

Post

+Title: string

+Image: object

+Description: String

Admin

+ Username: string

+Password: string

+adminId: int
+numOfPosts: int
+numOfPostsWaiting: int
+numOfPostsApproved: int

Register

+Email: string

+Password: string

+SFSUEmail: boolean

Comments

+buyerEmail: string

+comment: string

UML Component and Deployment Diagram:
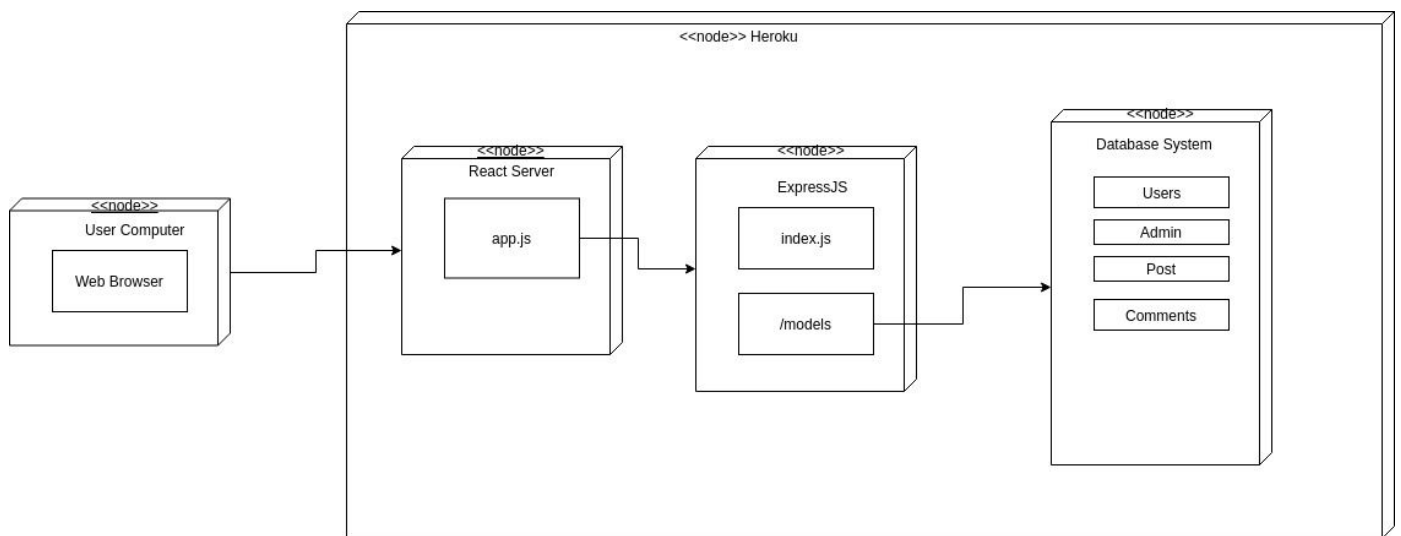
6. Key Risks:

- **Skill Risks:**

  React

  Most of the team members are not familiar with react and have not worked with it. Learning React is very important mostly to the front-end team as all our website design will be done through it. To learn React all the members were provided with full course on it. Also, other online resources like w3school.com were used to clarify any doubts.

  Mongo DB

  Most of the team members have never worked with MongoDB. Learning from the tutorial online members was able to understand it. Since, designing a schema is a vital task inexperienced members were guided by experienced members to build it.

  Node JS

  Some of the members of the team had worked with it before but rest who did not have familiarity with it was provided tutorials to learn. Also any doubt or difficulty understanding any topic were cleared by experienced members.

  Github:

  Most of the team members were familiar with GitHub. But in order to prevent crashing of whole site due to a small code error, particular person was given responsibility for pushing everything to the master.

- **Schedule Risks:**

  Work division and time are very important factors that help to create a good website. For the betterment of the team and keeping in consideration that members have work and other classes. So, we decided to meet every Wednesday afternoon for team meeting. This meeting is a scrum where we discuss work division, progress and future task to complete. If any member needed assistance than everyone would solve the issue together.

- **Technical Risks:**

  The technical risks involved are that the website needs to open on different browsers but due to different visual elements, resolution and graphics. To ensure GatorExchange works on every browser, our team is going to keep the code clean and

select styles that are cross platform compatible. Also outlining the workflow prior to starting work has been a key in ensuring we are all on the same page.

- **Team Risks:**
  The front-end and back-end should always be in an agreement to produce a good result. Our team works very well together as members are aware about their role for each milestone. Also streamlined communication between backend, frontend and leads has helped ensure everyone is on the same page.

- **Legal Risks:**
  When the GatorExchange website is deployed publically we could run into risk of users posting images that can violate the terms and conditions of the website. So, in order to prevent that we have Admin who will be able to monitor any posting, disable postings and ban users who violate our guidelines. Also we will be careful on ensuring we choose images that we are legally allowed to use.