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CS 5800.01 - Advanced Software Engineering
Homework – 2

Part 1 – Use Case(OOA)

1) Navigation

Description: Facilitating seamless route guidance from a starting location to a desired destination within the CPP Maps application.
Heading: Get Directions
Main Actor: User
Success Scenario:

1. **User Input**: The user chooses a starting point and a destination from the applications UI when they open CPP Maps.
2. **Route Calculation**: Based on a number of variables, including distance, traffic, and user preferences (such as the quickest, shortest, or least amount of toll roads), the application examines the users input and applies its algorithms to determine the best feasible route.
3. **Route Display**: Detailed step-by-step instructions are superimposed on top of the computed route, which is graphically displayed on the map interface by CPP Maps. This contains directions, street names, landmarks, and any noteworthy stops along the route.
4. **Navigation**: Using either visual cues on the map interface or, if enabled, aural cues, the user follows the given directions offered by CPP Maps. The software constantly updates the users location and offers on-the-spot direction to guarantee they stick to the selected path.
5. **Arrival**: The user completes the navigating procedure by following CPP Maps instructions and arriving at their location.

2) Search:

Description: Efficiently find specific places of interest by name within CPP Maps extensive database.
Heading: Place Search
Main Actor: User
Success Scenario:

1. **User Input:** Users enter the name of a location, such as "Zoo" or "Nordstrom", into the search bar provided by CPP Maps.
2. **Database Search:** CPP Maps searches its extensive database for matching locations based on the users input and retrieves relevant results.

3. **Results Display:** The application displays a list of matching locations to the user, presenting essential details such as the name, address, and possibly ratings or reviews for each result.
4. **Selection:** The user selects the desired place from the displayed list to access further information, including its precise location on the map, operating hours, contact information, and any available reviews or ratings.
5. **Additional Actions:** Users are given options to further interact with the selected place, such as navigating to it directly using CPP Maps navigation feature or saving the location for future reference within the application.

3) Explore:

Description: Discover nearby places categorized by type, enhancing user discovery and experience within CPP Maps.

Heading: Place Search by Category

Main Actor: User

Success Scenario:

1. **Category Selection:** The user accesses the "Explore" feature within CPP Maps and selects a specific category of interest, such as "Gym", "Restaurants", or "University", from the provided options.
2. **Results Display:** CPP Maps generates a list of places within the chosen category, presenting them to the user based on criteria such as proximity to the users current location, ratings, or personalized preferences.
3. **Place Selection:** The user selects a particular place from the displayed list to explore further, accessing detailed information including address, contact details, operating hours, and reviews from other users.
4. **Decision to Visit:** After reviewing the information provided, the user decides whether to visit the selected place. They may opt to utilize CPP Maps navigation feature to obtain step-by-step directions and navigate to the chosen destination efficiently.

4) Share Location:

Description: Seamlessly send ones current location to contacts via messaging apps for easy coordination and meetups.

Heading: Place Search

Main Actor: User

Success Scenario:

1. **Location Selection:** The user pinpoints their current location within CPP Maps and opts for the "Share Location" feature to proceed.

2. **Messaging App Selection:** CPP Maps prompts the user to select a messaging app installed on their device, offering options like WhatsApp, Messenger, or SMS.
3. **Recipient Selection:** The user selects a specific contact from their messaging apps contact list to whom they want to share their location.
4. **Location Sharing:** The selected contact receives the shared location through the chosen messaging app, enabling them to view the users current whereabouts on their own device screen, facilitating meet-ups or providing assistance as needed.

5) Share Rideshare:

Description: Effortlessly transmit ones location to rideshare apps like Uber or Lyft to request transportation services.

Heading: Rideshare Location Sharing

Main Actor: User

Success Scenario:

1. **Option Selection:** The user opts for the "Share Rideshare" functionality within CPP Maps after finalizing a destination.
2. **App Display:** CPP Maps presents a list of rideshare applications installed on the users device, such as Uber or Lyft, for the user to choose from.
3. **App Integration:** The user selects their preferred rideshare app, and CPP Maps seamlessly transfers the destination information to the chosen app, simplifying the booking process.
4. **Reservation Completion:** Following the transfer, the user completes the reservation process within the ridesharing app, confirming the ride request and awaiting the arrival of their chosen transportation to the desired location.

Part 2 – (OOA)

a) Highlight all the nouns to determine possible potential classes.
b) Highlight all the verbs and verb phrases to determine possible methods and relationships.

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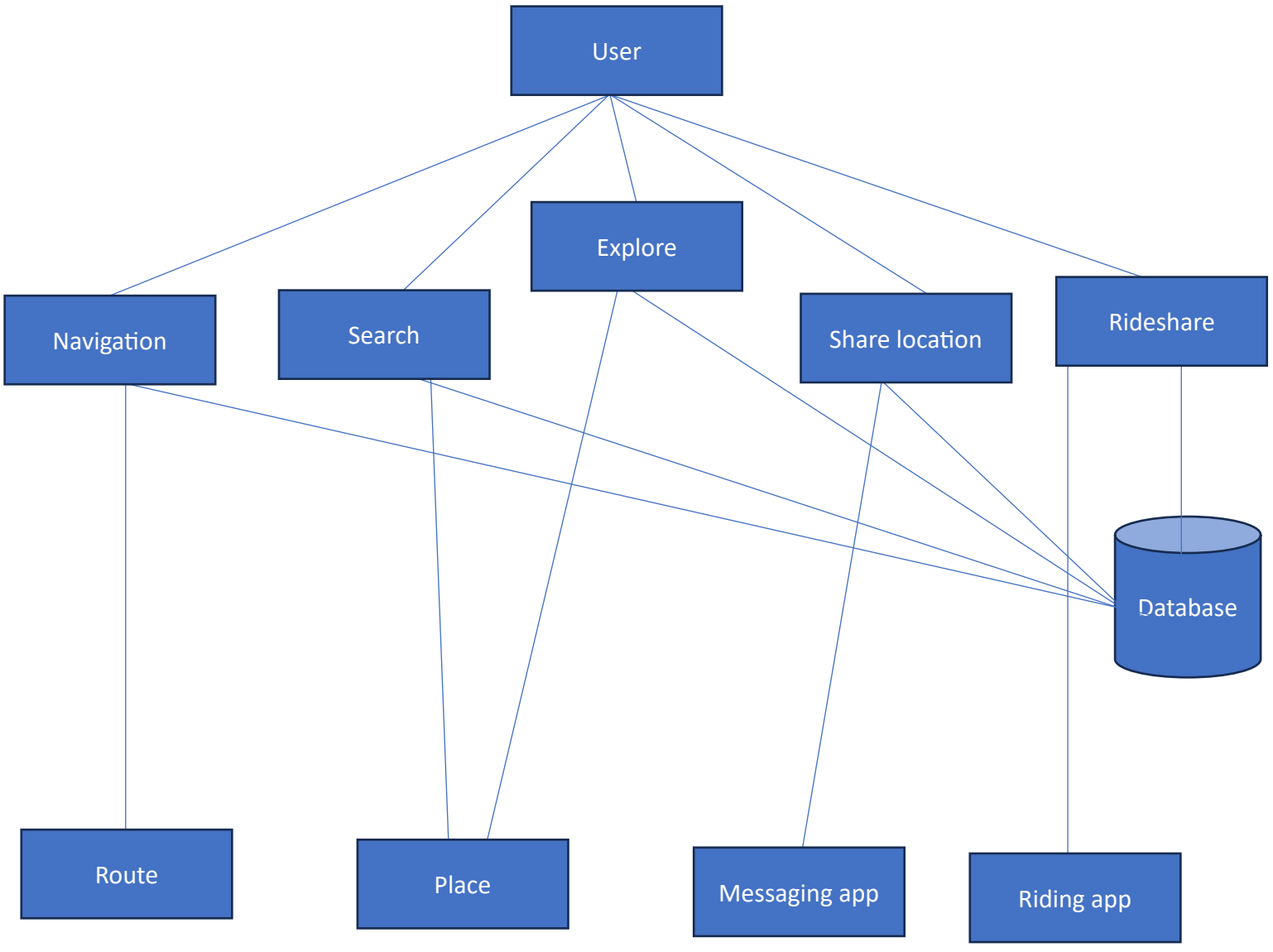
c) Create a rough graph showing how all the classes are connected.



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Part 3 – (OOD)

a) Create CRC cards of the classes you have selected from the potential list above.

User	
Chooses the places to start and finish the navigation.	Navigation
Uses name-based location searches.	Search
Investigates neighboring locations of a particular kind.	Explore
Choose which messaging applications and contacts to share your location with.	ShareLocation
Chooses the pickup places and rideshare services.	RideShare

Navigation	
Determines the paths between the starting and finishing places.	Routes
Obtains route instructions.	Routes
Routes are shown on a map.	Map
Gives route-specific traffic updates.	Traffic
Provides turn-by-turn guidance.	Routes

Search	
Uses the users query to find locations by name.	Map
Brings up particular location details.	Place
According to user criteria, filters search results.	Place
Shows the user the results of their search.	Place

Place	
Retains details about a location, such as its name, address, and category. When asked, gives information about a certain location.	Map Search, Explore, ShareLocation, RideShare

Explore	
Locates nearby locations in the user-selected category. Sorts locations according to categories. Shows locations to the user. Retrieves information on particular locations.	Map Place Place Place

ShareLocation	
Gives a selected contact access to the users location. Opens the selected messaging app containing the embedded location.	User MessagingApp

MessagingApp	
Shows and makes it easier for users to message one another. Opens a chat app and integrates shared locations.	ShareLocation MessagingApp

RideShare	
Calculates how much a ridesharing journey will cost. loads the selected ridesharing app with the pickup and destination addresses already entered. shows details about the available ridesharing choices.	User RideShare RideShare

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CPP Map	
Retains details on several locations	Places
Shows a picture of the region in visual form.	Navigation
Locates nearby locations in the user-selected category.	Explore
Locates locations by name using a users query.	Search
Displays the users location.	User

b) Create a final graph connecting all the Class names with their Collaborators.