Place Class

```
String name
double location
String address
String description
String[] tags
Road road
double estTimeCommitment
Place(String name, double location, String address, String description, String[] tags, Road road, double estTimeCommitment)
    this.name = name
    this.location = location
    this.description = description
    this.tags = tags
    this.road = road
    estTimeCommitment = null
setName(String name)
    this.name = name
getName()
    return name
setLocation(double location)
    this.location = location
getLocation()
    return location
setDescription(String description)
    this.description = description
getDescription()
    return description
```

```
getTags():
    return tags
setTags(String[] tags)
    this.tags = tags
getAddress()
    return address
setAddress(String address)
    this.address = address
getEstTimeCommitment()
    return estTimeCommitment
setEstTimeCommitment(double timeCommitment)
    estTimeCommitment = timeCommitment
associateAddressCoordinate(address, Place)
    Map.get(address) //hashmap, address maps to a Place
setRoad(Road road)
    this.road = road
getRoad()
    return road
public void destroy()
    destroy object
```

Road Class

```
String name
double distanceOnRoad
int trafficEstimate
int speedLimit
Road connectsTo
Road(String name, double distanceOnRoad, int trafficEstimate, int speedLimit, Road connectsTo)
    this.name = name
    this.distanceOnRoad = distanceOnRoad
    this.trafficEstimate = trafficEstimate
    this.speedLimit = speedlimit
    this.connectsTo = connectsTo
    timeLeft = distanceOnRoad / speedLimit + trafficEstimate
setTime()
    timeLeft = distanceOnRoad / speedLimit + trafficEstimate
getTime()
    return time
setName(String name)
    this.name = name
getName()
    return name
setDistanceOnRoad(int distanceOnRoad)
    this.distanceOnRoad = distanceOnRoad
getDistanceOnRoad()
    return distanceOnRoad
setTrafficEstimate(int trafficEstimate)
    this.trafficEstimate = trafficEstimate
getTrafficEstimate()
    return trafficEstimate
setSpeedLimit(int speedLimit)
    this.speedLimit = speedLimit
getSpeedLimit()
    return speedLimit
getConnectsTo()
    return connectsTo
setConnectsTo(Road connectsTo)
    this.connectsTo = connectsTo
```

```
destroy()
    destroy object
```

Navigation Class //client class, doesn’t need to be instantiated

```
Place destination
int timeEstimate
double distance
Road[] route
setRoute(Road[] newRoute)
    route = newRoute
    timeEstimate = 0
    distance = 0
    for each road in route
        timeEstimate += road.getTime()
        distance += road.getDistanceOnRoad()
getRoute()
    return route
setTimeEstimate(int timeEstimate)
    this.timeEstimate = timeEstimate
getTimeEstimate()
    return timeEstimate
getDistance()
    return distance
setDistance(double distance)
    this.distance = distance
setDestination(Place newDestination)
    destination = newDestination
```

```
getDestination()
    return destination
destroy()
    destroy object
```

Map Class

```
Place[] places
int clientRenderDistance
String  region
double[] regionalCoordinates
double coordinateGranularity
\\Determines effectively the distance between points on the grid of the map,
Scaled up or down dependent on urban density.
double endpointCoordinate
getEndpointCoordinate()
    return endpointCoordinate
setEndpointCoordinate(double coord)
    endpointCoordinate = coord
populateMap(Place[] places, locationTags[] tags)
    for each Place in places
        if places distance from client < clientRenderDistance
            render place
searchPlaces(String searchedFor)
    for each place in places
        if place == searchedFor
            return place
displayUserLocation()
    render client.getProfilePicture() at client.getLocation()
displayRoads()
```

```
    for each road in navigation.getRoute()
        render road
destroy()
    destroy object
```

Class Client Abstract

```
//not to be confused with Navigation class that acts as a client for the user to interact with, this is a class to store user information
String firstName
String lastName
String dateOfBirth
String username
String password
double contactPhone
String emailAddress
int renderDistancePreference
file profilePicture
double location
locationPermissions: Boolean
verifyLogin(String username, String password, String emailAddress)
    return this.username == username and this.password == password and this.emailAddress = emailAddress
getFirstName()
    return firstName
setFirstName(String newName)
    this.firstName = newName;
getLastName()
    return lastName
setLastName(String newName)
    this.lastName = newName
```

```
getDateOfBirth()
    return dateOfBirth
setDateOfBirth(String newDate)
    dateOfBirth = newDate
getUsername()
    return username
setUsername(String newUsername)
    username = newUsername
//No get password, shouldn't be accessed outside this class
setPassword(String oldPassword, String newPassword):
    if oldPassword == password
        password = newPassword
getContactPhone()
    return contactPhone
setContactPhone(double newPhone)
    contactPhone = newPhone
getEmailAddress()
    return emailAddress
setEmailAddress(String newAddress)
    emailAddres = newAddress
getProfilePicture()
    return profilePicture
setProfilePicture(file newPicture)
    profilePicture = newPicture
getLocation()
    return location
setLocation(double newLocation)
    location = newLocation
getRenderDistancePreference()
```

```
    return renderDistancePreference
setRenderDistancePreference(int distance)
    renderDistancePreference = distance
getLocationPermissions(): Boolean
    return locationPermissions
setLocationPermissions(boolean permission)
    locationPermissions = permission
destroy()
    destroy object
```

Class ClientBusiness extends Client

```
int operationHours
String businessName
String businessType
String address
double businessPhone
clientBusiness(int operationHours, String bussinessName, String type, String address, double phone)
    this.operationHours = operationHours
    this.bussinessName = bussinessName
    businessType = type
    this.address = address
    businessPhone = phone
setBusinessName(String name)
    businessName = name
getBusinessName()
    return businessName
getBusinessType()
```

```
    return businessType
setBusinessType(String type)
    businessType = type
getOperationHours()
    return operationHours
setOperationHours(int hours)
    operationHours = hours
getBusinessAddress(): String
    return businessAddress
setBusinessAddress(String address)
    businessAddress = address
getBusinessPhone(): double
    return businessPhone
setBusinessPhone(double phone)
    businessPhone = phone
destroy()
    destroy object
```

Class ClientUser extends Client

```
Boolean visibility
ClientUser(Boolean visibility)
    this.visibility = visibility
getVisibility(): Boolean
    return visbility
setVisbility(Boolean visbility)
    this.visibility = visibility
destroy()
    destroy object
```

Class Event extends Place

```
String eventName
```

```
String[]eventTags
Boolean inviteOnly
ClientUser[] guestList
Boolean ageRestricted
event(String name, String[] tags, Boolean inviteOnly, ClientUser[] guests, Boolean restricted)
    eventName = name
    eventsTags = tags
    this.inviteOnly = inviteOnly
    guestlist = guests
    ageRestricted = restricted
getEventName()
    return eventName
setEventName(String name)
    eventName = name
getEventTags()
    return eventTags
setEventTags(String[] tags)
    eventTags = tags
getGuestList()
    return guestList
setGuestList(ClientUser[] guests)
    guestlist = guests
getAgeRestricted()
    return ageRestricted
setAgeRestricted(Boolean restricted)
    ageRestricted = restricted
```