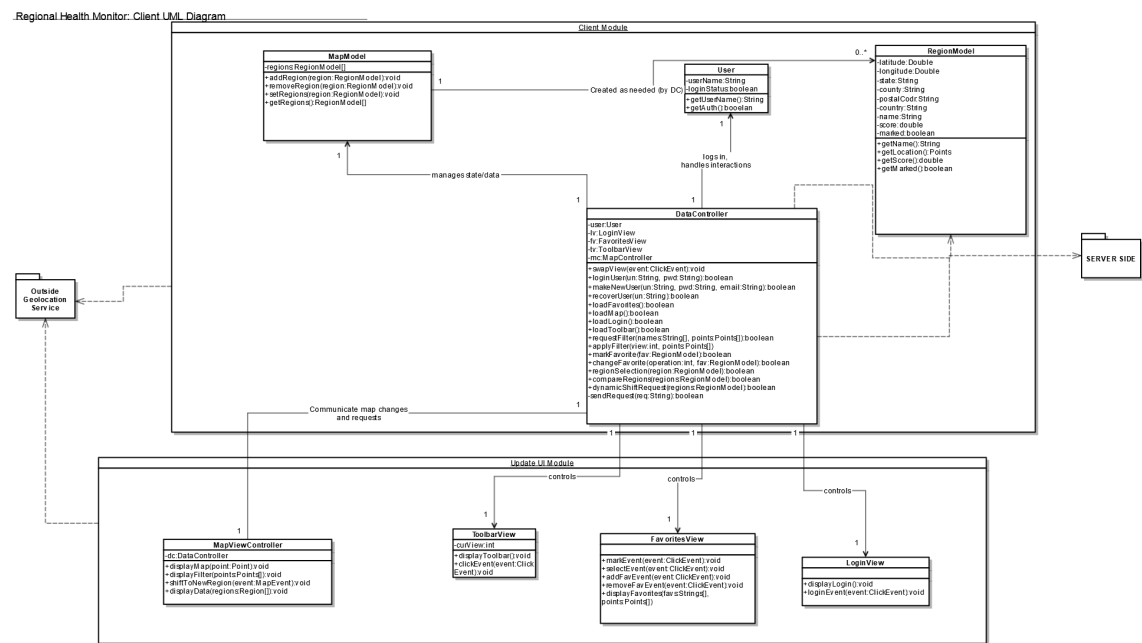Max Fowler, Tom Castonzo
ACS 560 HW 5

Regional Health Monitor
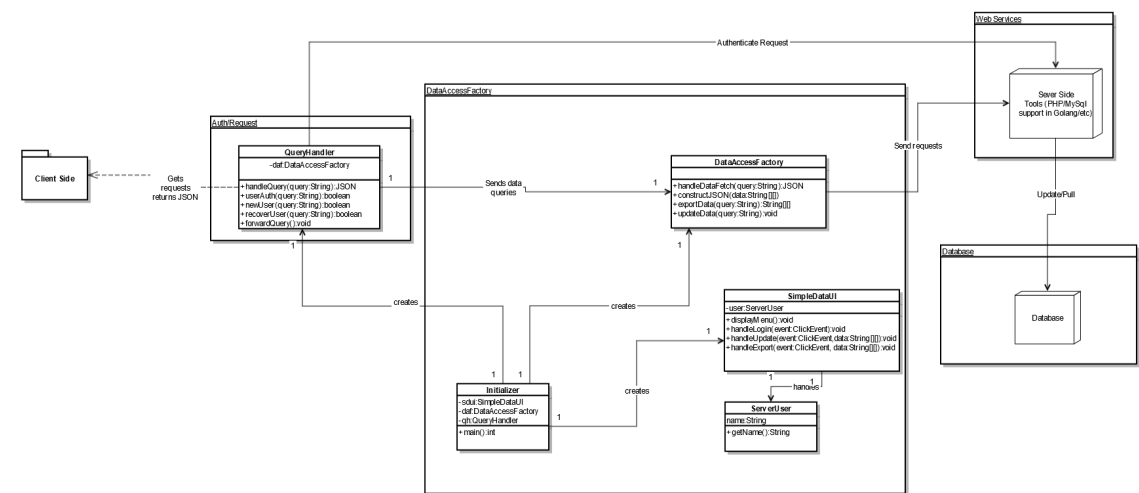
DESIGN DOCUMENTATION

Attached to this document are UML Class Diagrams for the client and server side, as well as Use Case diagrams detailing overall system usage and flow. Use Cases were chosen as opposed to UML Sequence Diagrams to dial down on the complexity of reading the design documents. Sequence Diagrams were determined to be more complex than illuminating in terms of system flow, especially due to some ignorance on Golang and Android programming at this stage.

Regional Health Monitor: Client UML Diagram

Client Module

MapModel
- regions:RegionModel[]

- +addRegion(region:RegionModel):void
- +removeRegion(region:RegionModel):void
- +setRegions(region:RegionModel):void
- +getRegions():RegionModel[]

Created as needed (by DC)

User
- -userName:String
- -loginStatus:boolean

- +getUserName():String
- +getAuth():boolean

0..*

RegionModel
- -latitude:Double
- -longitude:Double
- -state:String
- -county:String
- -postalCodr:String
- -country:String
- -name:String
- -score:double
- -marked:boolean

- +getName():String
- +getLocation():Points
- +getScore():double
- +getMarked():boolean

manages state/data

logs in,
handles interactions

DataController
- -user:User
- -lv:LoginView
- -fv:FavoritesView
- -tv:ToolbarView
- -mc:MapController

- +swapView(event:ClickEvent):void
- +loginUser(un:String, pwd:String):boolean
- +makeNewUser(un:String, pwd:String, email:String):boolean
- +recoverUser(un:String):boolean
- +loadFavorites():boolean
- +loadMap():boolean
- +loadLogin():boolean
- +loadToolbar():boolean
- +requestFilter(names:String[], points:Points[]):boolean
- +applyFilter(view:int, points:Points[])
- +markFavorite(fav:RegionModel):boolean
- +changeFavorite(operation:int, fav:RegionModel):boolean
- +regionSelection(region:RegionModel):boolean
- +compareRegions(regions:RegionModel):boolean
- +dynamicShiftRequest(regions:RegionModel):boolean
- -sendRequest(req:String):boolean

SERVER SIDE

Outside Geolocation Service

Communicate map changes
and requests

Update UI Module

controls

controls

controls

MapViewController
- -dc:DataController

- +displayMap(point:Point):void
- +displayFilter(points:Points[]):void
- +shiftToNewRegion(event:MapEvent):void
- +displayData(regions:Region[]):void

ToolbarView
- -curView:int

- +displayToolbar():void
- +clickEvent(event:ClickEvent):void

FavoritesView
- +markEvent(event:ClickEvent):void
- +selectEvent(event:ClickEvent):void
- +addFavEvent(event:ClickEvent):void
- +removeFavEvent(event:ClickEvent):void
- +displayFavorites(favs:String[], points:Points[])

LoginView
- +displayLogin():void
- +loginEvent(event:ClickEvent):void

Regional Health Monitor: Server Side UML Diagram

Web Services

Saver Side
Tools (PHP/MySql
support in Golang/etc)

Authenticate Request

Auth/Request

QueryHandler
-daf:DataAccessFactory
+handleQuery(query:String):JSON
+userAuth(query:String):boolean
+newUser(query:String):boolean
+recoverUser(query:String):boolean
+forwardQuery():void

Client Side

Gets
requests
returns JSON

DataAccessFactory

Sends data
queries

Send requests

DataAccessFactory
+handleDataFetch(query:String):JSON
+constructJSON(data:String[][])
+exportData(query:String):String[][]
+updateData(query:String):void

Update/Pull

Database

Database

SimpleDataUI
-user:ServerUser
+displayMenu():void
+handleLogin(event:ClickEvent):void
+handleUpdate(event:ClickEvent,data:String[][]):void
+handleExport(event:ClickEvent, data:String[][]):void

creates

creates

creates

Initializer
-sdui:SimpleDataUI
-daf:DataAccessFactory
-qh:QueryHandler
+main():int

handles

ServerUser
name:String
+getName():String

Regional Health Monitor: Use Case Diagrams

The use cases below are divided into multiple categories; User Login, Server Side, Map Interaction, Favorites List Interaction, and Toolbar Interaction.

This is to enable the system to be seen from multiple views, while keeping the diagrams from becoming too cluttered.
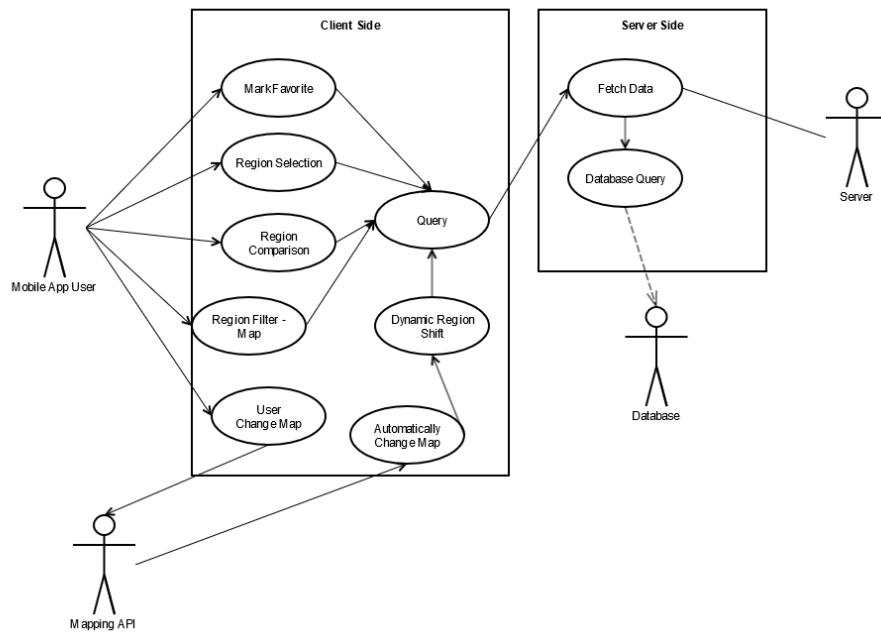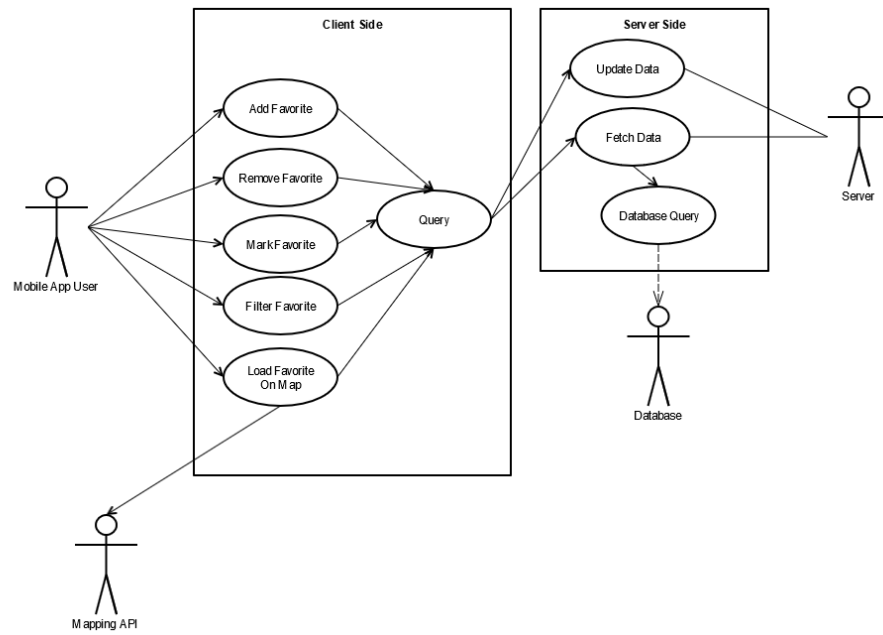
User Login Cases
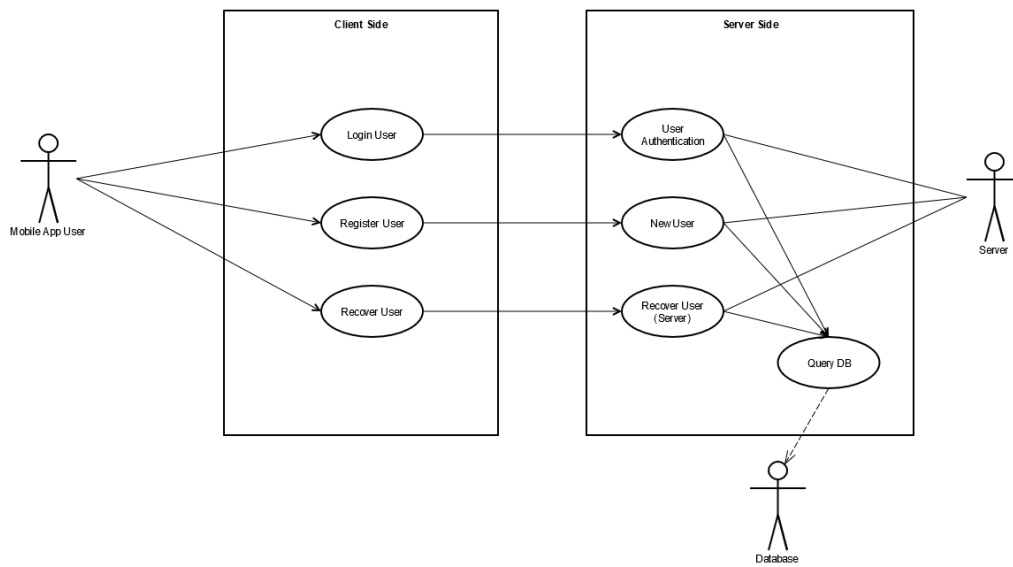
Server Side Data Update Cases
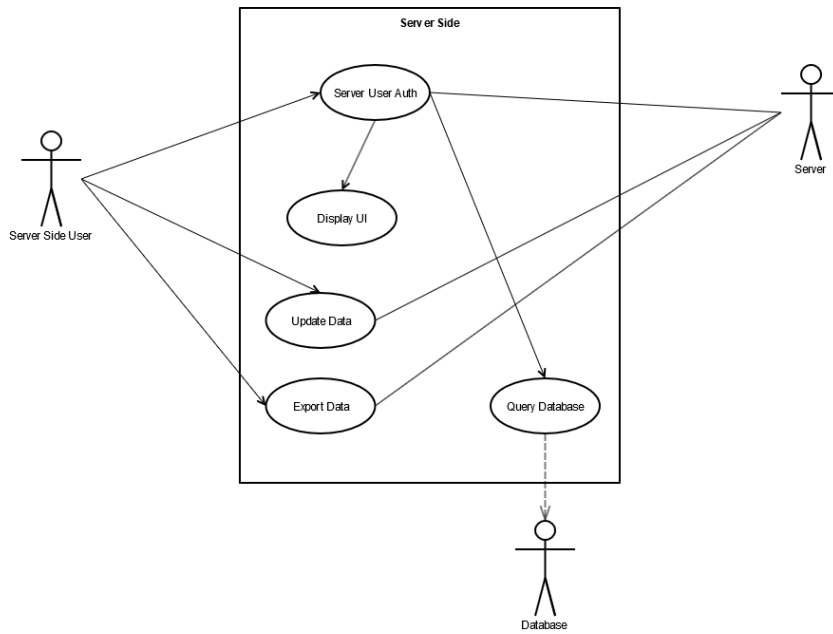
Map Interaction Cases

Favorites List Interaction Cases

Toolbar Interaction Cases

The server component here is simplified, due to it receiving attention above.