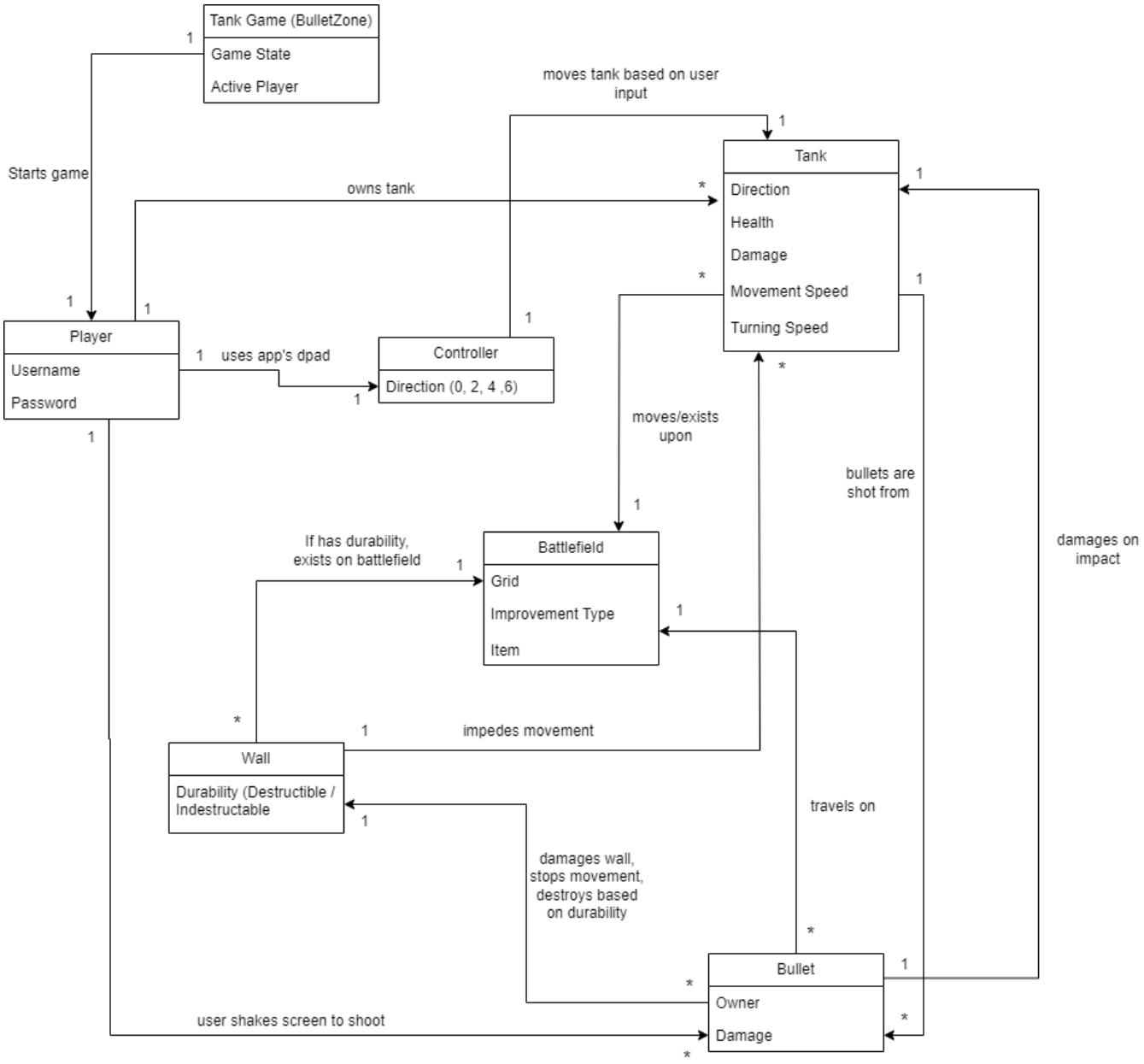
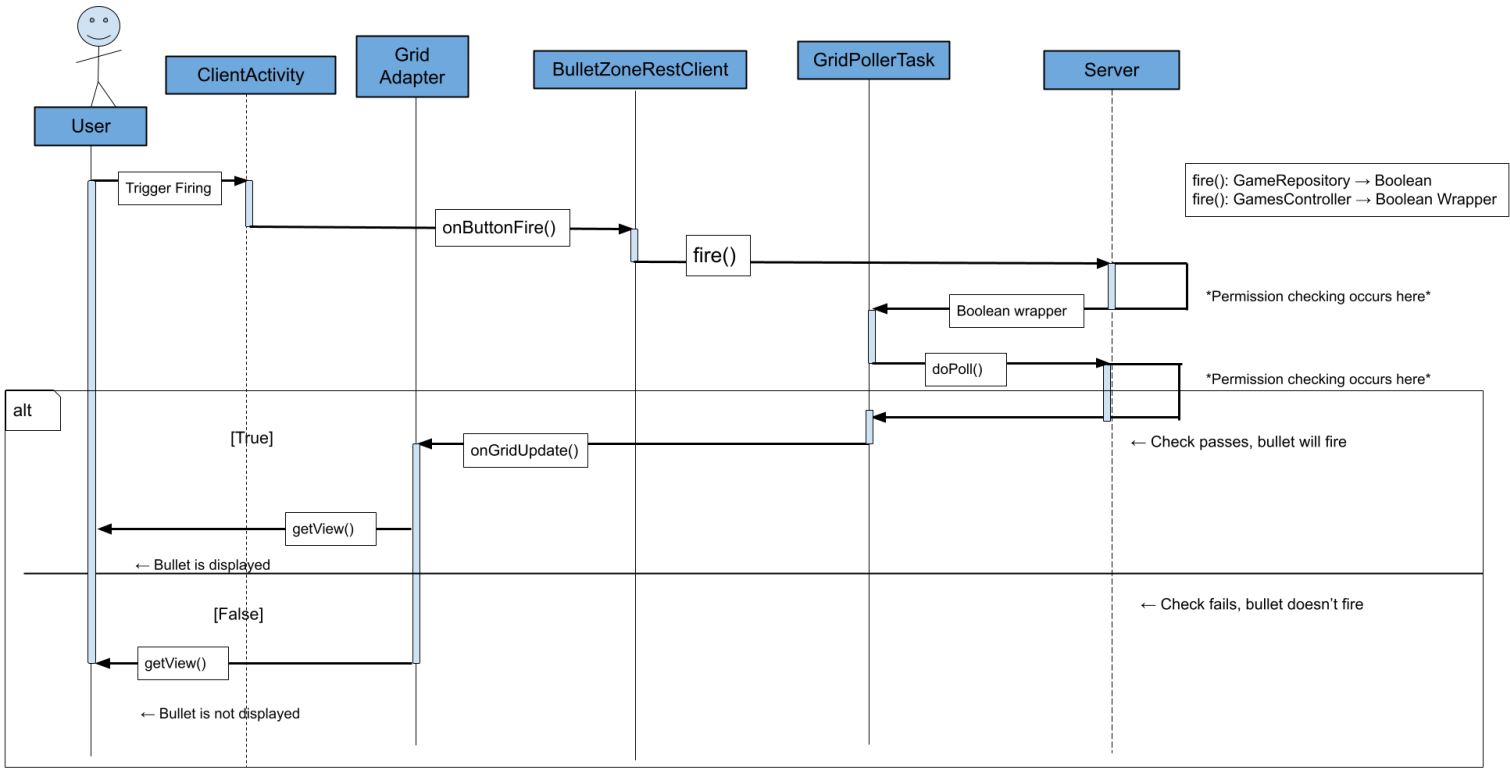
Team Rhea: Seth, Jilly, Jack, Emily, Dart

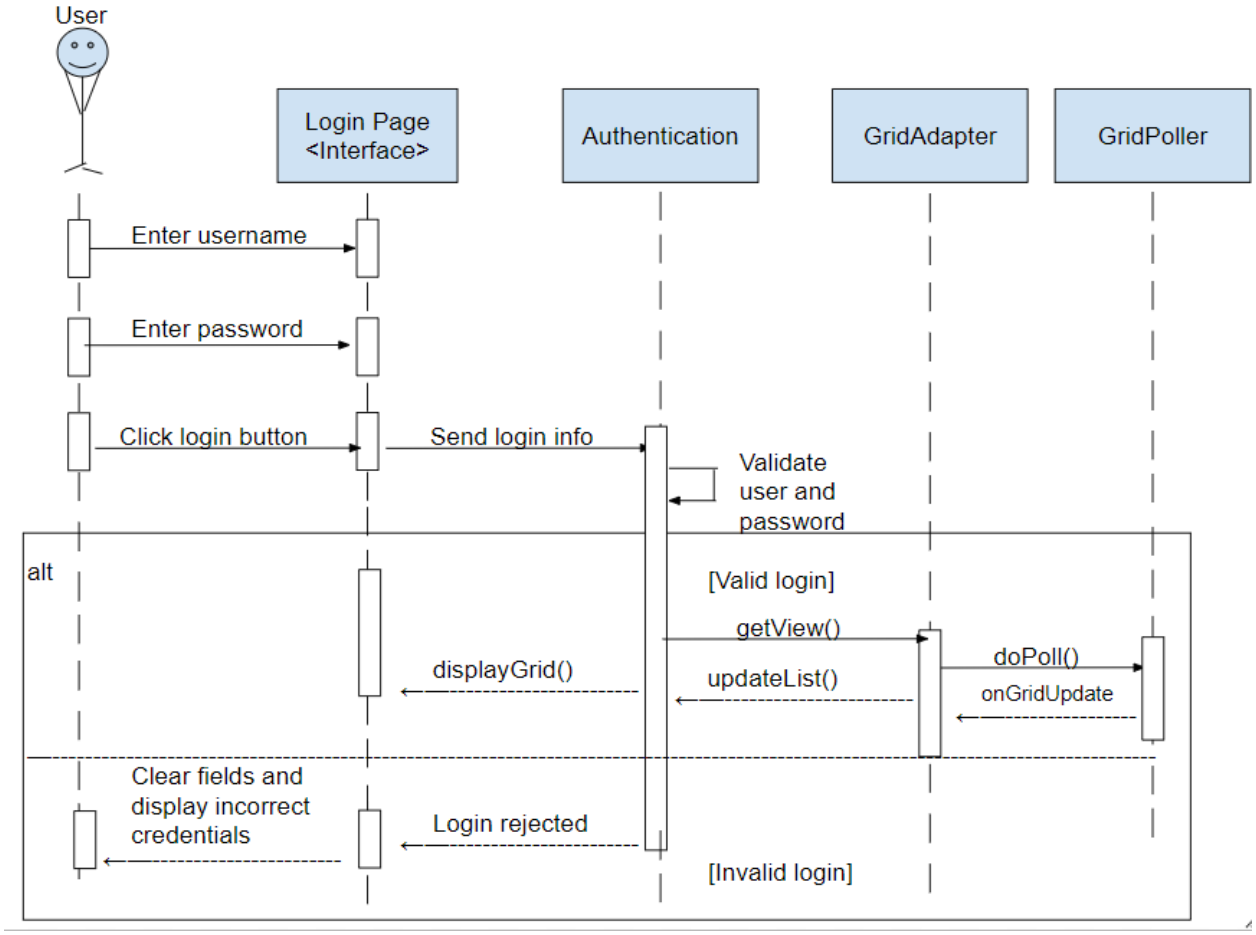
Milestone 0

1. **[4 pts]** Domain model (diagram of domain concepts you have identified so far, and their relationships).



2. **[4 pts]** (At least) two UML sequence diagrams starting with a user action in the client, improved or different from what's in the assignment description. One sequence diagram should correspond to the "main success scenario" you gave for part 3 listed above. One of the diagrams should involve game-play (controlling the tank) and the other should not. Both diagrams should focus primarily on interactions between software objects within the client.





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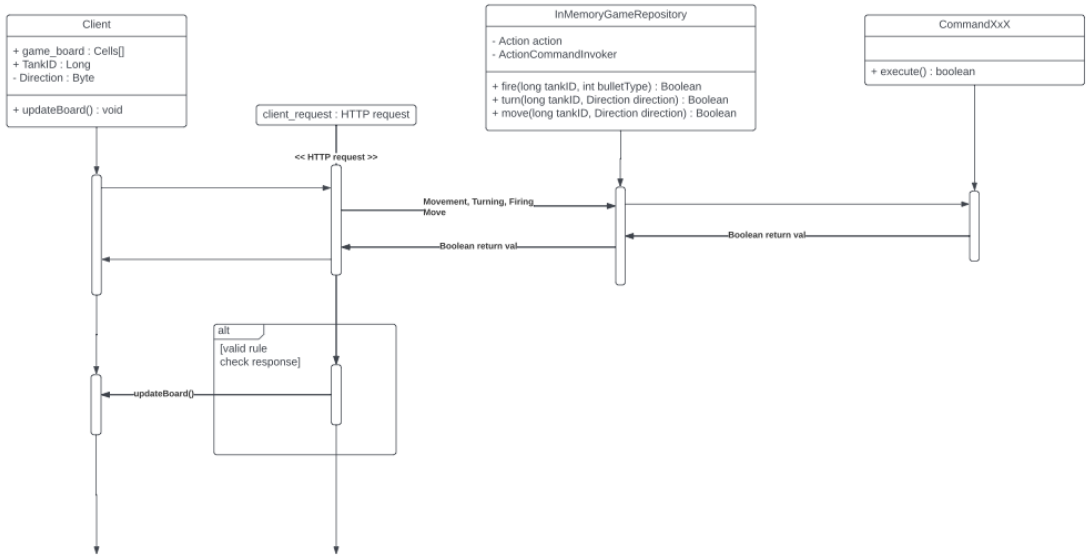
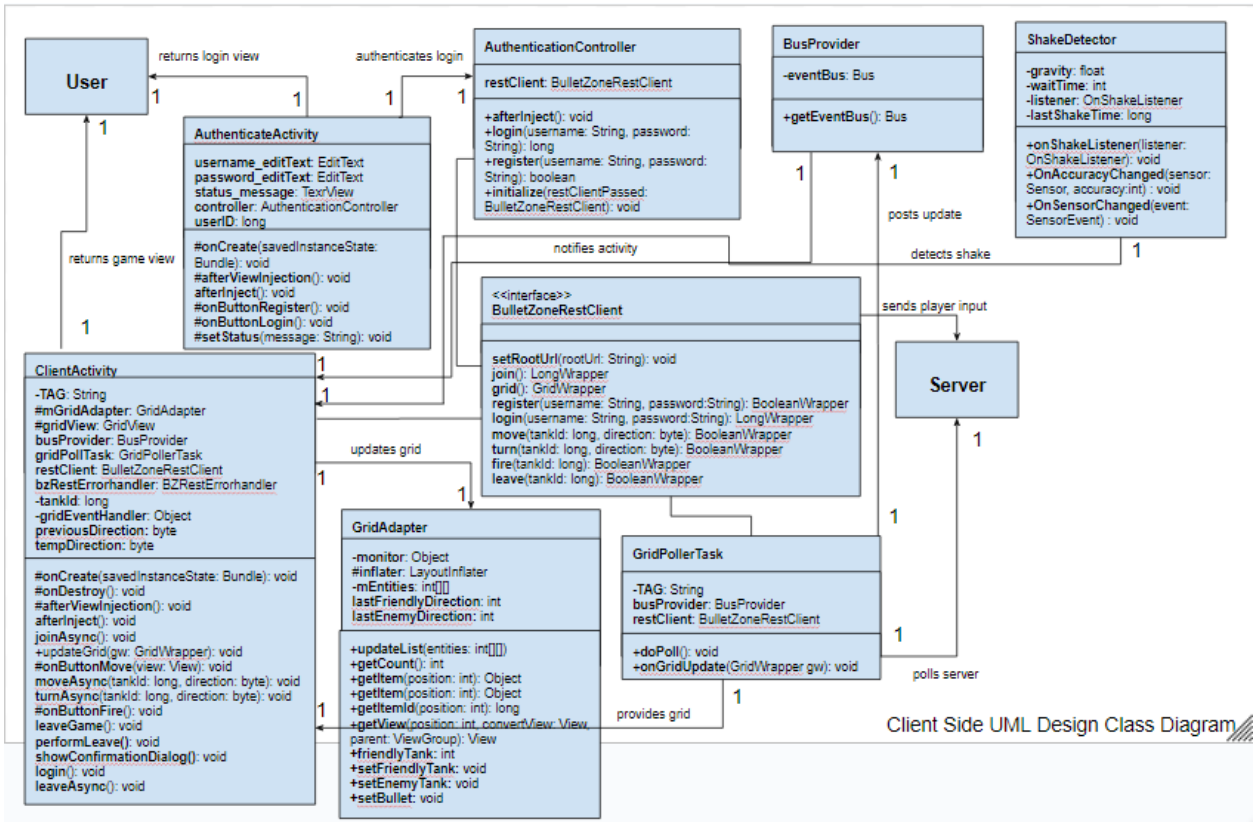
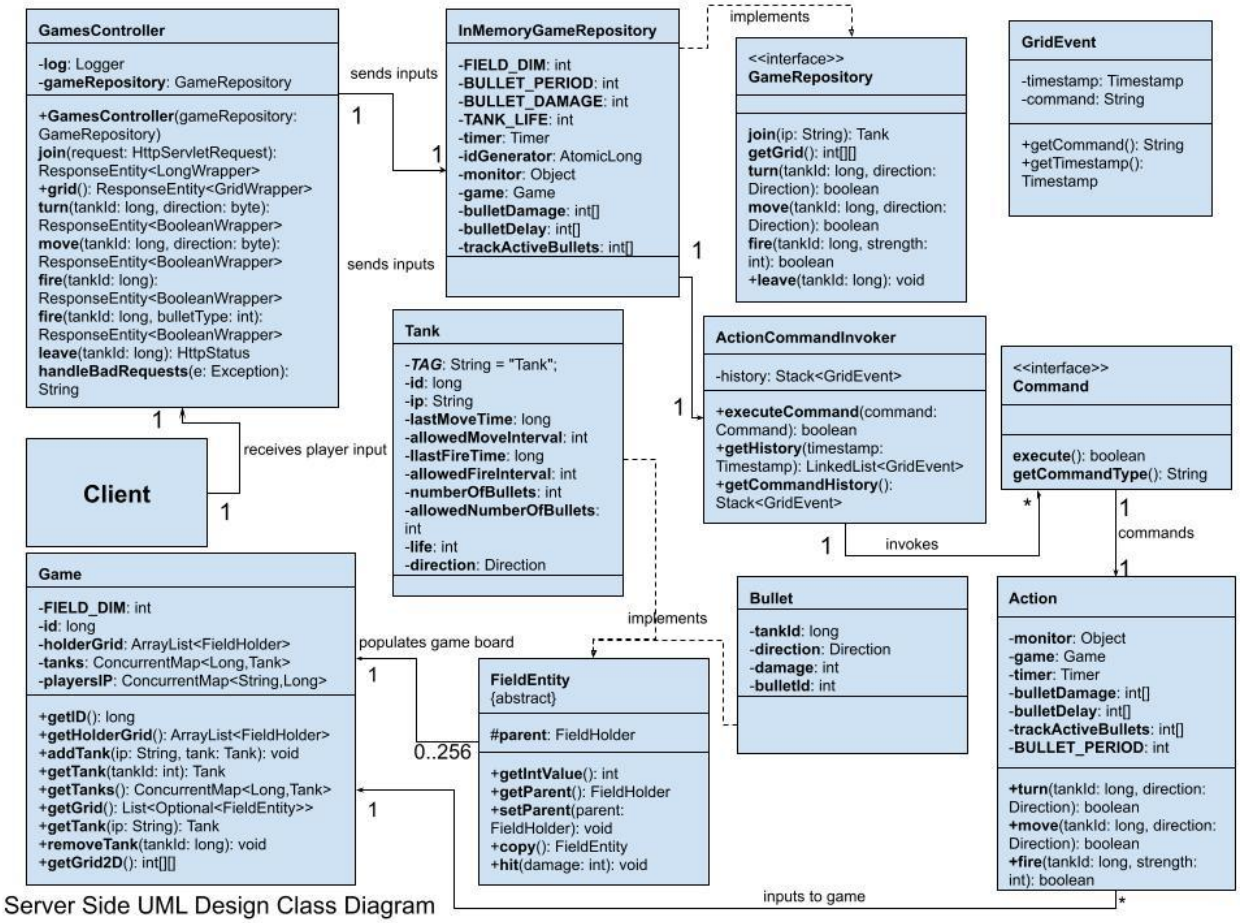
3. **[2 pts]** (At least) one UML sequence diagram illustrating how constraints on turning or movement will be enforced on the server, resulting in a different return value in server responses to turning or movement requests from a client.



4. **[8 pts]** UML design class diagram(s) that supports joining a game, plus the gameplay use-cases... preferably should address the needs of the entire system as you know them so far. It usually works best to have one diagram for the client and one for the server.


User
returns login view
authenticates login
AuthenticationController
restClient: BulletZoneRestClient
+afterInject(): void
+login(username: String, password: String): long
+register(username: String, password: String): boolean
+initialize(restClientPassed: BulletZoneRestClient): void
BusProvider
-eventBus: Bus
+getEventBus(): Bus
ShakeDetector
-gravity: float
-waitTime: int
-listener: OnShakeListener
-lastShakeTime: long
+onShakeListener(listener: OnShakeListener): void
+OnAccuracyChanged(sensor: Sensor, accuracy:int) : void
+OnSensorChanged(event: SensorEvent) : void
AuthenticateActivity
username_editText: EditText
password_editText: EditText
status_message: TextView
controller: AuthenticationController
userID: long
#onCreate(savedInstanceState: Bundle): void
#afterViewInjection(): void
afterInject(): void
#onButtonRegister(): void
#onButtonLogin(): void
#setStatus(message: String): void
returns game view
posts update
notifies activity
detects shake
<<interface>>
BulletZoneRestClient
setRootUrl(rootUrl: String): void
join(): LongWrapper
grid(): GridWrapper
register(username: String, password:String): BooleanWrapper
login(username: String, password:String): LongWrapper
move(tankId: long, direction: byte): BooleanWrapper
turn(tankId: long, direction: byte): BooleanWrapper
fire(tankId: long): BooleanWrapper
leave(tankId: long): BooleanWrapper
sends player input
Server
ClientActivity
-TAG: String
#mGridAdapter: GridAdapter
#gridView: GridView
busProvider: BusProvider
gridPollTask: GridPollerTask
restClient: BulletZoneRestClient
bzRestErrorhandler: BZRestErrorhandler
-tankId: long
-gridEventHandler: Object
previousDirection: byte
tempDirection: byte
#onCreate(savedInstanceState: Bundle): void
#onDestroy(): void
#afterViewInjection(): void
afterInject(): void
joinAsync(): void
+updateGrid(gw: GridWrapper): void
#onButtonMove(view: View): void
moveAsync(tankId: long, direction: byte): void
turnAsync(tankId: long, direction: byte): void
#onButtonFire(): void
leaveGame(): void
performLeave(): void
showConfirmationDialog(): void
login(): void
leaveAsync(): void
updates grid
GridAdapter
-monitor: Object
#inflater: LayoutInflater
-mEntities: int[][]
lastFriendlyDirection: int
lastEnemyDirection: int
+updateList(entities: int[][])
+getCount(): int
+getItem(position: int): Object
+getItem(position: int): Object
+getItemId(position: int): long
+getView(position: int, convertView: View, parent: ViewGroup): View
+friendlyTank: int
+setFriendlyTank: void
+setEnemyTank: void
+setBullet: void
GridPollerTask
-TAG: String
busProvider: BusProvider
restClient: BulletZoneRestClient
+doPoll(): void
+onGridUpdate(GridWrapper gw): void
polls server
provides grid
Client Side UML Design Class Diagram



Server Side UML Design Class Diagram

5. **[3 pts]** A brief description of what patterns you have identified so far as being useful for your project--indicate which classes will participate in each pattern, and what roles they will play in each pattern.

In the class ClientActivity, multiple patterns can be found. The singleton pattern is found in the usage of BusProvider, where it will provide a single instance of an event bus to its client, GridPoller, which uses. Its class operation is the ClientActivity. Another pattern involving ClientActivity is the facade pattern. The clients of this pattern would be the ClientActivity, and BusProvider.The facade would be the Poller class, and the subsystem classes would be the classes contained in the server.

Then there is usage of a MVC (model-view-controller) pattern through classes BulletZoneRestClient, GridView and ClientActivity. BulletZoneRestClient is going to serve as our Model, doing all processes surrounding data logic (login(), turn(),

fire()) and is also frequently called upon by ClientActivity, or the brain/controller of the program. GridView is the view UI component (View) responsible for displaying the grid to the user. ClientActivity will handle as our controller, tackling human interactions within the app and updating the view based on those actions.