C Sc 335 Analysis and Design Artifacts for Final Project

1. **Team Name:** RAICHU GO

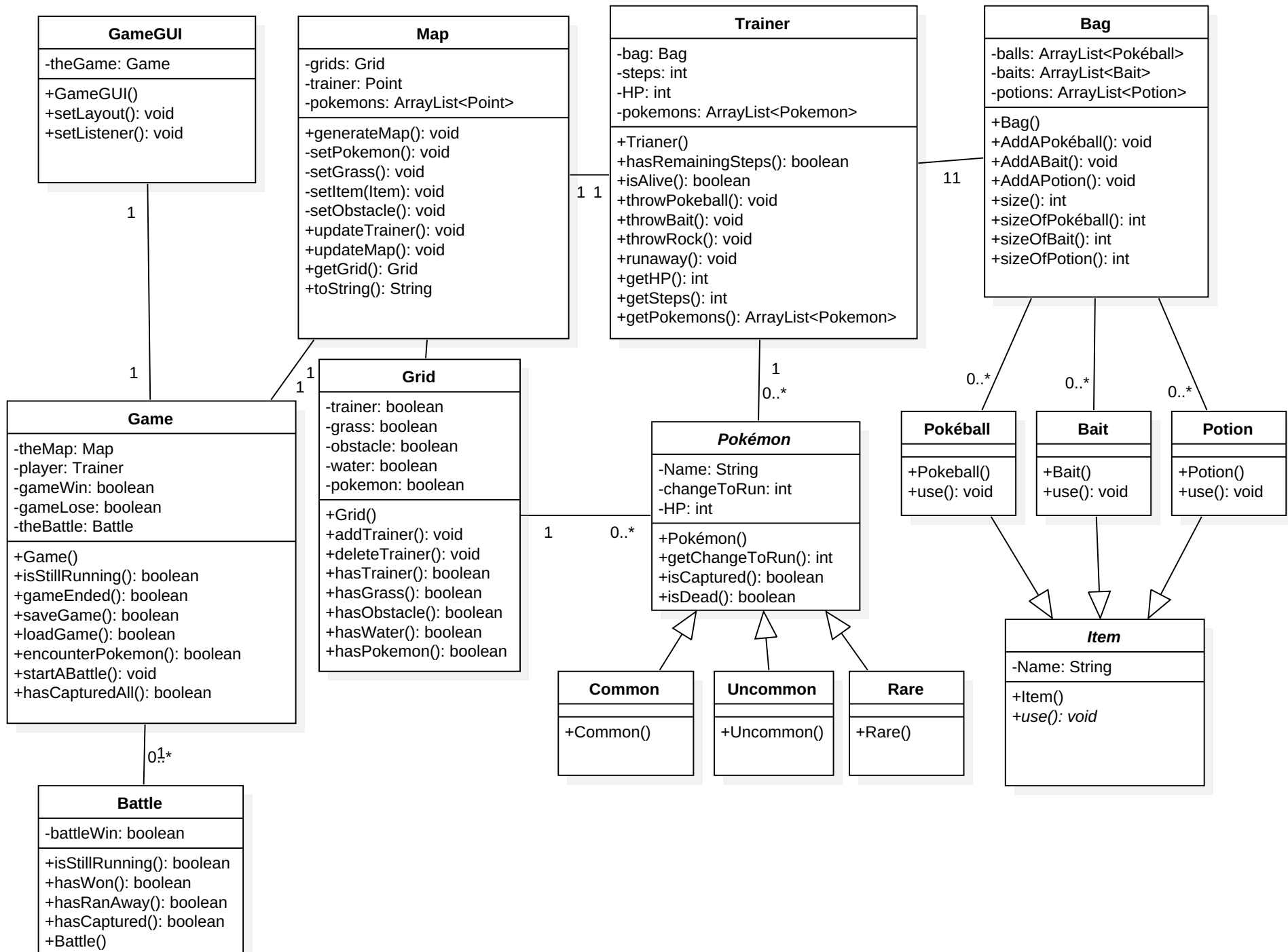2. **Team Members:** Wenkang Zhou   Haozhe Xu
   Benlong Huang   Yang hong

3. **Candidate Objects or Class Hierarchies**

List the most important objects, or the name of an inheritance hierarchy, and the main responsibility.

Candidate Object	Single Responsibility in 1 or 2 sentences
Pokémon	Containing a Pokémon's properties like name, ability. (abstract)
Trainer	Containing items, is able to move on map
Item	Abstract class.
– Pokéball	implements Item, catch Pokémon
– Potion	implements Item, all HP for a trainer
– Bait	implements Item, increase possibility of catching a Pokémon
Game	Determining Win conditions
GameGUI	Graphic User Interface
Sound	Containing filenames of sound files and can be called up on
Map	Containing a list of points and Item, Pokémon, Trainer on game map

GameGUI

-theGame: Game

+GameGUI()
+setLayout(): void
+setListener(): void

Map

-grids: Grid
-trainer: Point
-pokemons: ArrayList<Point>

+generateMap(): void
-setPokemon(): void
-setGrass(): void
-setItem(Item): void
-setObstacle(): void
+updateTrainer(): void
+updateMap(): void
+getGrid(): Grid
+toString(): String

Trainer

-bag: Bag
-steps: int
-HP: int
-pokemons: ArrayList<Pokemon>

+Trianer()
+hasRemainingSteps(): boolean
+isAlive(): boolean
+throwPokeball(): void
+throwBait(): void
+throwRock(): void
+runaway(): void
+getHP(): int
+getSteps(): int
+getPokemons(): ArrayList<Pokemon>

Bag

-balls: ArrayList<Pokéball>
-baits: ArrayList<Bait>
-potions: ArrayList<Potion>

+Bag()
+AddAPokéball(): void
+AddABait(): void
+AddAPotion(): void
+size(): int
+sizeOfPokéball(): int
+sizeOfBait(): int
+sizeOfPotion(): int

Game

-theMap: Map
-player: Trainer
-gameWin: boolean
-gameLose: boolean
-theBattle: Battle

+Game()
+isStillRunning(): boolean
+gameEnded(): boolean
+saveGame(): boolean
+loadGame(): boolean
+encounterPokemon(): boolean
+startABattle(): void
+hasCapturedAll(): boolean

Grid

-trainer: boolean
-grass: boolean
-obstacle: boolean
-water: boolean
-pokemon: boolean

+Grid()
+addTrainer(): void
+deleteTrainer(): void
+hasTrainer(): boolean
+hasGrass(): boolean
+hasObstacle(): boolean
+hasWater(): boolean
+hasPokemon(): boolean

Pokémon

-Name: String
-changeToRun: int
-HP: int

+Pokémon()
+getChangeToRun(): int
+isCaptured(): boolean
+isDead(): boolean

Pokéball

+Pokeball()
+use(): void

Bait

+Bait()
+use(): void

Potion

+Potion()
+use(): void

Item

-Name: String

+Item()
+*use(): void*

Battle

-battleWin: boolean

+isStillRunning(): boolean
+hasWon(): boolean
+hasRanAway(): boolean
+hasCaptured(): boolean
+Battle()

Common

+Common()

Uncommon

+Uncommon()

Rare

+Rare()

Relationship multiplicities: 1, 1, 1, 1, 11, 1, 0..*, 1, 0..*, 0..*, 0..*, 0..*, 1, 0..*, 1, 0..*

interaction SequenceDiagram1

Trainer: Trainer	Game	Pokémon

1 : Start a battle

2 : Choose a Pokémon

3 : Pokémon chosen

4 : Throw a PokéBall

5 : Check if the Pokémon was caught

6 : Not caught

7 : Pokémon not caught

8 : Throw a rock

9 : cause reduction of HP

10 : Give Bait

11 : Bait the Pokémon and see if it accepts

12 : Accept the bait

13 : Throw a PokéBall

14 : Check if the Pokémon was caught

15 : Get result(success)

16 : Pokémon caught

17 : Add the Pokémon to the bag