

ASSIGNMENT – 3

Original GitHub Repo: <https://github.com/toolbox4minecraft/amidst>

Forked GitHub Repo: https://github.com/sarthak3136/amidst_ (Not Accepted)

Pull Request Link: <https://github.com/toolbox4minecraft/amidst/pull/1123/files>

Note: I have made branch for every refactoring and created a pull request for the same. So, please look at all.

SET – I

1) Extract Method

- **Description**

The "isValidLocation ()" method was previously handling multiple functionalities, which goes against the principle of single responsibility. Therefore, it has undergone a refactoring process, wherein the relevant component of the method has been extracted and implemented in a new method. This results in a more streamlined and organized code structure.

- **Location (Before Refactoring)**

src/main/java/amidst/mojangapi/world/icon/locationchecker/SuppressAroundLocationChecker.java

- *Method:* boolean isValidLocation (int chunkX, int chunkZ), Line 25

- **Location (After Refactoring)**

src/main/java/amidst/mojangapi/world/icon/locationchecker/SuppressAroundLocationChecker.java

- *Method:* boolean isValidLocation (int chunkX, int chunkZ), Line (25)
- *Method Created:* boolean intersectsRegion (int chunkX, int chunkZ), Line (70).

- **Link (Before Refactoring)**

<https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amidst/mojangapi/world/icon/locationchecker/SuppressAroundLocationChecker.java>

- **Link (After Refactoring)**

[https://github.com/sarthak3136/amidst/blob/a04310c4420249891075fc73e46f2ee67c59d359/src/main/java/amidst/mojangapi/world/icon/locationchecker/Su
ppressAroundLocationChecker.java](https://github.com/sarthak3136/amidst/blob/a04310c4420249891075fc73e46f2ee67c59d359/src/main/java/amidst/mojangapi/world/icon/locationchecker/Su
ppressAroundLocationChecker.java)

2) Rename Method

- **Description**

The method name "find ()" changed to "findWorldIcon" because find name is too generic that's why decided to add what we are finding in the method name.

- **Location (Before Refactoring)**

src/main/java/amidst/fragment/ClosestWorldIconFinder.java

- *Method:* find (), Line (33)
- *Constructor:* ClosestWorldIconFinder (), Line (29)

- **Location (After Refactoring)**

src/main/java/amidst/fragment/ClosestWorldIconFinder.java

- *Method:* findWorldIcon (), Line (33)
- *Constructor:* ClosestWorldIconFinder (), Line (29)

- **Link (Before Refactoring)**

[https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amid
st/fragment/ClosestWorldIconFinder.java](https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amid
st/fragment/ClosestWorldIconFinder.java)

- **Link (After Refactoring)**

[https://github.com/toolbox4minecraft/amidst/blob/ca55af393d2253bc6f6c1f0e
649989e251bdfb43/src/main/java/amidst/fragment/ClosestWorldIconFinder.jav
a](https://github.com/toolbox4minecraft/amidst/blob/ca55af393d2253bc6f6c1f0e
649989e251bdfb43/src/main/java/amidst/fragment/ClosestWorldIconFinder.jav
a)

3) Decompose Conditional

- **Description**

CreateWorldAccessor Method has the code smell of type complex conditional. That smell has been removed and refactored by decomposing the complex conditional statement in the separate method worldMatches.

- **Location (Before Refactoring)**

src/test/java/amidst/mojangapi/mocking/FakeMinecraftInterface.java
○ *Method:* createWorldAccessor (), Line (32)

- **Location (After Refactoring)**

src/test/java/amidst/mojangapi/mocking/FakeMinecraftInterface.java
○ *Method:* createWorldAccessor (), Line (42)
○ *Method Created:* worldMatches (), Line (50)

- **Link (Before Refactoring)**

<https://github.com/toolbox4minecraft/amidst/blob/master/src/test/java/amidst/mojangapi/mocking/FakeMinecraftInterface.java>

- **Link (After Refactoring)**

<https://github.com/toolbox4minecraft/amidst/blob/0e9d5e9d927858b1107e1931819a0225dfdf64c1/src/test/java/amidst/mojangapi/mocking/FakeMinecraftInterface.java>

SET – II

1) Extract Class

- **Improvements Done**

The GridDrawer Class had multiple text related methods for Grids and those methods can be extracted to the separate class which will be responsible introducing text in the grid drawer. So, a new file has been created "TextDrawer.java" which will be responsible for that.

- **Location (Before Refactoring)**

src/main/java/amidst/fragment/drawer/GridDrawer.java

- Method: void draw (), Line (30), Line (89-118)

- **Location (After Refactoring)**

src/main/java/amidst/fragment/drawer/GridDrawer.java

- Method: void draw (), Line (30), Line (89-118)

src/main/java/amidst/fragment/drawer/TextDrawer.java

- Class Created: TextDrawer

- **Link (Before Refactoring)**

<https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amidst/fragment/drawer/GridDrawer.java>

- **Link (After Refactoring)**

<https://github.com/toolbox4minecraft/amidst/blob/0d9b71d6d8d90ca6029d797be81f4da9fe18d78d/src/main/java/amidst/fragment/drawer/GridDrawer.java>

<https://github.com/toolbox4minecraft/amidst/blob/0d9b71d6d8d90ca6029d797be81f4da9fe18d78d/src/main/java/amidst/fragment/drawer/TextDrawer.java>

2) Replace Conditional with Polymorphism

- **Improvements Done**

- Four new classes - BothWorldPlayerType, SingleplayerWorldPlayerType, MultiplayerWorldPlayerType, and NoneWorldPlayerType - have been created. The from () method in each of the new classes takes a SaveGame object as input and returns an instance of the corresponding WorldPlayerType.
- The from () method in the WorldPlayerType class has been modified to return an instance of one of the new classes instead of a WorldPlayerType object.
- The if-else statement in the from () method has been modified to create an instance of the appropriate new class instead of returning a WorldPlayerType object.
- Overall, the changes involve refactoring the WorldPlayerType class to use polymorphism instead of a conditional statement to determine the appropriate behaviour based on the state of the SaveGame object. The result is a more modular and extensible code structure.

- **Location (Before Refactoring)**

src/main/java/amidst/mojangapi/world/player/WorldPlayerType.java,
○ static List<WorldPlayerType> getSelectable (), Line (27)

- **Location (After Refactoring)**

src/main/java/amidst/mojangapi/world/WorldBuilder.java, Line (67)
○ *Method:* World fromSaveGame (), Line (67)

Classes Created:

- src/main/java/amidst/mojangapi/world/player/BothWorldPlayerType.java
- src/main/java/amidst/mojangapi/world/player/MultiplayerWorldPlayerType.java
- src/main/java/amidst/mojangapi/world/player/NoneWorldPlayerType.java
- src/main/java/amidst/mojangapi/world/player/SingleplayerWorldPlayerType.java

- **Link (Before Refactoring)**

<https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amidst/mojangapi/world/WorldBuilder.java>

<https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amidst/mojangapi/world/player/WorldPlayerType.java>

- **Link (After Refactoring)**

<https://github.com/toolbox4minecraft/amidst/blob/c5aa4c2d7bdf9c0ddbd754e261998d5f4823c50/src/main/java/amidst/mojangapi/world/player/WorldPlayerType.java>

<https://github.com/toolbox4minecraft/amidst/blob/c5aa4c2d7bdf9c0ddbd754e261998d5f4823c50/src/main/java/amidst/mojangapi/world/player/SingleplayerWorldPlayerType.java>

<https://github.com/toolbox4minecraft/amidst/blob/c5aa4c2d7bdf9c0ddbd754e261998d5f4823c50/src/main/java/amidst/mojangapi/world/player/NoneWorldPlayerType.java>

<https://github.com/toolbox4minecraft/amidst/blob/c5aa4c2d7bdf9c0ddbd754e261998d5f4823c50/src/main/java/amidst/mojangapi/world/player/MultiplayerWorldPlayerType.java>

<https://github.com/toolbox4minecraft/amidst/blob/c5aa4c2d7bdf9c0ddbd754e261998d5f4823c50/src/main/java/amidst/mojangapi/world/player/BothWorldPlayerType.java>

<https://github.com/toolbox4minecraft/amidst/blob/c5aa4c2d7bdf9c0ddbd754e261998d5f4823c50/src/main/java/amidst/mojangapi/world/WorldBuilder.java>

3) Move Method

- **Improvements Done**

```
private VersionFeatures initInterfaceAndGetFeatures(WorldOptions worldOptions, MinecraftInterface minecraftInterface)
    throws MinecraftInterfaceException {
    RecognisedVersion recognisedVersion = minecraftInterface.getRecognisedVersion();
    if(minecraftInterface instanceof LoggingMinecraftInterface) {
        ((LoggingMinecraftInterface) minecraftInterface).logNextAccessor();
    }
    MinecraftInterface.WorldAccessor worldAccessor = new ThreadedWorldAccessor(v -> minecraftInterface.createWorldAccessor(worldOptions));
    seedHistoryLogger.log(recognisedVersion, worldOptions.getWorldSeed());
    return DefaultVersionFeatures.builder(worldOptions, worldAccessor).create(recognisedVersion);
}
```

The function `initInterfaceAndGetFeatures` takes the object parameter of class `MinecraftInterface`. The function originally lied on `WorldBuilder.java` class from which the snapshot is taken. It can be clearly observed that the function uses method of `MineCraftInterface` more than the methods declared in the class where the function is declared. That's why I used Move Method.

- **Link (Before Refactoring)**

<https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amidst/mojangapi/minecraftinterface/LoggingMinecraftInterface.java>

<https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amidst/mojangapi/minecraftinterface/MinecraftInterface.java>

<https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amidst/mojangapi/minecraftinterface/legacy/BetaMinecraftInterface.java>

<https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amidst/mojangapi/minecraftinterface/legacy/LegacyMinecraftInterface.java>

https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amidst/mojangapi/minecraftinterface/legacy/1_13MinecraftInterface.java

https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amidst/mojangapi/minecraftinterface/legacy/1_15MinecraftInterface.java

<https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amidst/mojangapi/minecraftinterface/local/LocalMinecraftInterface.java>

<https://github.com/toolbox4minecraft/amidst/blob/master/src/main/java/amidst/mojangapi/world/WorldBuilder.java>

<https://github.com/toolbox4minecraft/amidst/blob/master/src/test/java/amidst/mojangapi/mocking/BenchmarkingMinecraftInterface.java>

<https://github.com/toolbox4minecraft/amidst/blob/master/src/test/java/amidst/mojangapi/mocking/FakeMinecraftInterface.java>

<https://github.com/toolbox4minecraft/amidst/blob/master/src/test/java/amidst/mojangapi/mocking/RequestStoringMinecraftInterface.java>

- **Link (After Refactoring)**

<https://github.com/toolbox4minecraft/amidst/blob/65c49190cb664f65fd2e3bd17a1bdc1917d9f4c8/src/main/java/amidst/mojangapi/minecraftinterface/LoggingMinecraftInterface.java>

<https://github.com/toolbox4minecraft/amidst/blob/65c49190cb664f65fd2e3bd17a1bdc1917d9f4c8/src/main/java/amidst/mojangapi/minecraftinterface/MinecraftInterface.java>

<https://github.com/toolbox4minecraft/amidst/blob/65c49190cb664f65fd2e3bd17a1bdc1917d9f4c8/src/main/java/amidst/mojangapi/minecraftinterface/legacy/BetaMinecraftInterface.java>

<https://github.com/toolbox4minecraft/amidst/blob/65c49190cb664f65fd2e3bd17a1bdc1917d9f4c8/src/main/java/amidst/mojangapi/minecraftinterface/legacy/LegacyMinecraftInterface.java>

https://github.com/toolbox4minecraft/amidst/blob/65c49190cb664f65fd2e3bd17a1bdc1917d9f4c8/src/main/java/amidst/mojangapi/minecraftinterface/legacy/1_13MinecraftInterface.java

https://github.com/toolbox4minecraft/amidst/blob/65c49190cb664f65fd2e3bd17a1bdc1917d9f4c8/src/main/java/amidst/mojangapi/minecraftinterface/legacy/1_15MinecraftInterface.java

<https://github.com/toolbox4minecraft/amidst/blob/65c49190cb664f65fd2e3bd17a1bdc1917d9f4c8/src/main/java/amidst/mojangapi/minecraftinterface/local/LocalMinecraftInterface.java>

<https://github.com/toolbox4minecraft/amidst/blob/65c49190cb664f65fd2e3bd17a1bdc1917d9f4c8/src/main/java/amidst/mojangapi/world/WorldBuilder.java>

<https://github.com/toolbox4minecraft/amidst/blob/65c49190cb664f65fd2e3bd17a1bdc1917d9f4c8/src/test/java/amidst/mojangapi/mocking/BenchmarkingMinecraftInterface.java>

<https://github.com/toolbox4minecraft/amidst/blob/65c49190cb664f65fd2e3bd17a1bdc1917d9f4c8/src/test/java/amidst/mojangapi/mocking/FakeMinecraftInterface.java>

<https://github.com/toolbox4minecraft/amidst/blob/65c49190cb664f65fd2e3bd17a1bdc1917d9f4c8/src/test/java/amidst/mojangapi/mocking/RequestStoringMinecraftInterface.java>