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| **Submitted By: Ahmed Dider Rahat**  Matriculation Number: 916146 |

PROJECT REPORT

Advance Software Engineering (DSM: 2021-2022)

**Answer to the question no. 1**

**Assignment Code:** After implementing each of the module I pushed my code on my <https://github.com/AhmedDiderRahat/fs-wise2122> link.

**Answer to the question no. 2**

UML Diagram: UML stands for Unified Modeling Language. Its help to specify, visualize, and document models of software systems, including their structure and design.

These portion I will expalin 3 standard UML diagrams:

1. Use case diagram
2. Activity diagram
3. State diagram

* **Use Case Diagram:** In my use case diagram there are 2 actors and 7 use case.
* **Activity diagram:** In activity diagram we can see the interaction between each activity to others.
* **State diagram:** Hold the state of the system.

**All the figure is stored into following directory:** <https://github.com/AhmedDiderRahat/fs-wise2122/tree/main/report/2%20-%20Three%20Diagram>

**Answer to the question no. 3**

**Domain Driven Design (DDD):** There are 3 domain in my system user management, app data management, and app data use (from other application).

**The screen shrot is given as follow:**

<https://github.com/AhmedDiderRahat/fs-wise2122/tree/main/report/3%20-%20DDD>

**Answer to the question no. 4**

**SonarCloud Metrics:** I have done the metics work by using sonarCloud.

**SS link:** <https://github.com/AhmedDiderRahat/fs-wise2122/tree/main/report/4%20-%20sonarCloud>

**Cloud link is:** <https://sonarcloud.io/summary/overall?id=AhmedDiderRahat_fs-wise2122>

**Answer to the question no. 5**

**Clean Code Development:** In my coding implementation, I try to do clean coding.

* **5 points for clean code:** 
  1. **Naming Convension:** Throughout the project I tried to give all the variable a meaningfull name.
  2. **Write meaningfull comment:** I write comment whenever it needed.
  3. **Do not use long parameter:** I didn’t use any mehod with a long paremeter list instead of making a data class object to passed it. Screnshort can be found:
  4. **Error handing:** I handle all the possible errors. For that I used null checking as well as try…catch methods.
  5. **Remove unused code:** After completing each module, I removed the unused code/import.

**All of Screnshort can be found:** <https://github.com/AhmedDiderRahat/fs-wise2122/tree/main/report/5A%20-%20Clean%20Code>

* **10 points for cheat sheet:** As I used kotlin as my development languagae. So, I used cheat sheet for kotlin and core software development concept.

**The screenshort link is:**

<https://github.com/AhmedDiderRahat/fs-wise2122/tree/main/report/5B%20-%20Cheat%20Sheet>

**Answer to the question no. 6**

* **Build Management:** As I developed an adroid appliation, I use kotlin as programming language and android studio as my IDE. So I build my apk using android studio manager.

**APK link:** <https://github.com/AhmedDiderRahat/fs-wise2122/tree/main/report/6%20-%20Build%20management>

**Answer to the question no. 7**

* **Unit test implemenetation:** I implement unit test to check wheter the app name is correct or not. All the unit test codes are implemented to unittest pacakage. I used one dependency named “com.google.truth:truth:1.0.1” for implement unit test.

**Screen Short Link:**

<https://github.com/AhmedDiderRahat/fs-wise2122/tree/main/report/7%20-%20Unit%20test>

**Answer to the question no. 8**

* **Continuous Delivery:** I used circleci as the countinous integration platfor. I make a branch for circleci in git and connect that branch with circleci.

**The cofigaration file and and ss are given in the link:**

<https://github.com/AhmedDiderRahat/fs-wise2122/tree/main/report/8%20-%20Continuous%20delivery>

**Answer to the question no. 9**

* **IDE and key-shortcut:** I used android studio as my IDE. In android studio I have some favourite key shortcuts. Some of them are:
  + **CTRL+ALT+L** for format the code of a page. Its very useful to format the code by just using this cimmand. As formting increse the code readabily, so often I used this command.
  + **CTRL+space** for getting the suggestion for any library function or already declare varible.
  + **ALT+enter** for import any library if its not imported automatically.

**Answer to the question no. 10**

* **DES:** I assume one portion of my domain is to rate the name of an user. Here, rating means the occurance of the name. I also assume that, the calculation could be happened into another remote site.

The code segment is written into dsl package and the link is:

<https://github.com/AhmedDiderRahat/fs-wise2122/tree/main/report/10%20-%20DSL>

**Answer to the question no. 11**

* **Functional Programming:** 
  + **Only final data structures:** In kotlin the final variable is expresse as val. I have used in my code.
  + **Side Effect free function:** A function that doesn’t effect the state of the external object is side-efffect free function.
  + **Higher-order functions:** A higher-order function is a function that takes functions as parameters, or returns a function. In the screen short [3-5] map is a higher order function.
  + **Functions as parameters and return values:** In the screen short [3-5] random() is pass to other function.
  + **Anonymous functions:** In the screen short [3-5] key\_generator is anonymus function.

**All the screen short links are:** <https://github.com/AhmedDiderRahat/fs-wise2122/tree/main/report/11%20-%20Functional%20Programming>