PROJECT REPORT

Advance Software Engineering (DSM: 2021-2022)

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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