CIS096-1 - Principal of Programming and Data Structure

< Your Project Title >

Assigment-2 Stage-3

Architecture Documentation and Codebase

< Group No >

< Your Name (Student ID) >

< Your Name (Student ID) >

Submitted to

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Table of Contents

Introduction

- Introduction to project and how OOP paradigm support to solve the problems of your project.
- Architectures
    - Justification of Architecture used
    - Key Components Architecture used
    - Architectural Layers used in your project
        - Presentation Layer
        - Business Layer
        - Data Access Layer
        - Model Layer
    - Design Patterns Used in your project
        - Singleton
        - Factory
        - Observer
        - MVC
        - Others

Architecture Diagram

- Architecture Diagram of your project
    - Explain the diagram in context of your project

- Architecture Diagram (for your reference)
    - https://vfunction.com/blog/architecture-diagram-guide/
    - https://www.youtube.com/watch?v=FWWFCsZNmDw

Class Definition

- Class Defnition (Skeleton Class with all contents)
- Person (Properties – pid, fullname, address, Methods – setpid, getpid)

Project Folder Structure/Codebase Organization

- Folder Structure of Project (Text format)

```
OOP-Architecture-Java
├ src
│ ├ com.example
│ │ ├ models        # Encapsulation - Data models (POJOs)
│ │ ├ services      # Business logic (Service Layer)
│ │ ├ controllers   # Handles user requests (Controller Layer)
│ │ ├ repositories  # Data access layer (DAO Layer)
│ │ ├ utils         # Utility/helper classes
│ │ └ interfaces    # Abstraction (Interfaces & Contracts)
│ ├ Main.java       # Entry point (Application Runner)
│ └ config.properties # Configuration file
├ lib               # External libraries (if any)
├ test              # Unit tests and integration tests
├ README.md         # Project documentation
├ .gitignore        # Files to ignore in Git
└ pom.xml / build.gradle # Maven/Gradle dependency management
```

Implementation

a. Display all Users

// Declare

```
Label lblTitle;
Button btnDisplay, btnClear, btnClose;
TableView tblUsers;

// Initialize
lblTitle = new Label("All Users");
lblTitle.relocate(50, 0);
Font font = new Font("Arial", 20);
lblTitle.setFont(font);

btnClear = new Button("Clear All");
btnClear.relocate(50, 300);

btnDisplay = new Button("Display All");
btnDisplay.relocate(150, 300);

btnClose = new Button("Close");
btnClose.relocate(250, 300);

//TableView
tblUsers = new TableView();
tblUsers.setPrefHeight(250);
tblUsers.setPrefWidth(500);
tblUsers.relocate(50, 30);

//Columns
TableColumn<User, Integer> colUid = new TableColumn<>("UID");
TableColumn<User, String> colFullName= new TableColumn<>("NAME");
TableColumn<User, String> colAddress = new TableColumn<>("ADDRESS");

TableColumn<User, String> colEmail = new TableColumn<>("EMAIL");
TableColumn<User, String> colUser = new TableColumn<>("USER");
TableColumn<User, String> colPass = new TableColumn<>("PASSWORD");

//Add on Table
tblUsers.getColumns().add(colUid);
tblUsers.getColumns().add(colFullName);
tblUsers.getColumns().add(colAddress);
tblUsers.getColumns().add(colEmail);
tblUsers.getColumns().add(colUser);
tblUsers.getColumns().add(colPass);

//Binding column with instance variable of class
colUid.setCellValueFactory(new PropertyValueFactory<>("uid"));
colFullName.setCellValueFactory(new PropertyValueFactory<>("fullName"));
colAddress.setCellValueFactory(new PropertyValueFactory<>("address"));
colEmail.setCellValueFactory(new PropertyValueFactory<>("email"));
colUser.setCellValueFactory(new PropertyValueFactory<>("loginID"));
colPass.setCellValueFactory(new PropertyValueFactory<>("loginPassword"));
```

```
btnDisplay.setOnAction(new EventHandler<ActionEvent>() {
    @Override
    public void handle(ActionEvent actionEvent) {
        //Add Row on Table
        //tblUsers.getItems().add(new User(1,"Raj Rai","Balkhu","raj@gmail.com", "raj","raj"));
        List<User> users = new UserCRUD().all();
        //Clear All
        tblUsers.getItems().clear();
        //Add Rows
        for(User user: users) {
            tblUsers.getItems().add(user);
        }
    }
});
```

- Major Code Snippet of Task-2
- ….
- Major Code Snippet of Task-N

Testing

- **Test Cases**

Case	Inputs	Expected Output	Actual Output	Result
1	Click on display all button	Display all the records of database table (users)	Display all the records of database table (users)	PASS
2				
N				

Github Repository Link

- https://github.com/karyal/PoPDS-Spring-2025

Refelection

Reflection of your whole work

References

List of references

Referencing Techniques - Harvard Style

- https://www.citethemrightonline.com/article?docid=b-9781350928060&tocid=b-9781350928060-sample-text-and-reference-list-using-the-harvard-style

- https://uws-uk.libguides.com/referencing/examples

- https://www.youtube.com/watch?v=2EdMTV_a6OI

Appendix

Test Case-1