Database & Client Server

Name: Mohit **Intern ID: 190002**
B-TECH CS-SD **Batch 2019-23**

Project Activity– 1

Milestone – 2

1. **Design the architecture of the project.**

Ans.) Architecture of the project:

- When I start the project with run as the java application it will open the UI of the project.
- In the UI first I must enter the life cycle name and its description which specify about the life cycle.
- In the next tab that name is step I must mention the steps of the life cycle with the name and description.
- In the next tab I must mention the condition that name is the conditions tab that is specific to mention the condition of the life cycle.
- Next tab is for tasks that is assigned to the member of the team the task tab depend upon the roles and artifacts do it slow is different from other tabs first I must mention the roles and artifacts in their tab and then I can mention the task to the teammates.
- Next tab is of roles that is already mentioned in the flow of the task tab and next is the effort categories tab that is specific for plans, artifacts, defects, and interruptions this tab is also flow in the different manner first I must mention all the tabs that is plans, artifacts, interruption and defects than I can add the

effort categories by choosing one of the values from all of the tabs.

- Now all the tabs left plan, defects, interruptions, and artifacts will mention before adding the effort in the UI.

2. Create a database and provide the snapshot for the same.

```
mysql> tee D:\SQL Files\Database & client server\Week-13\Project-1.txt
Logging to file 'D:\SQL Files\Database & client server\Week-13\Project-1.txt'
mysql>  create database PETS_Roles;
Query OK, 1 row affected (0.08 sec)
```

3. Create all necessary tables with appropriate mapping constraints(i.e., Primary Key, Foreign Key, Unique key, etc.) for the project and provide the snapshot for each.

- **Creating tables:**

```
mysql> CREATE TABLE LIFE_CYCLE (NAME VARCHAR(255), DESCRIPTION VARCHAR(500));
Query OK, 0 rows affected (0.13 sec)

mysql> CREATE TABLE STEP (NAME VARCHAR(255), DESCRIPTION VARCHAR(500));
Query OK, 0 rows affected (0.10 sec)
```

```
mysql> CREATE TABLE CONDITIONS (NAME VARCHAR(255), DESCRIPTION VARCHAR(500));
Query OK, 0 rows affected (0.10 sec)

mysql> CREATE TABLE TASK (NAME VARCHAR(255), DESCRIPTION VARCHAR(500));
Query OK, 0 rows affected (0.11 sec)

mysql> CREATE TABLE ROLES (NAME VARCHAR(255), DESCRIPTION VARCHAR(500));
Query OK, 0 rows affected (0.11 sec)

mysql> CREATE TABLE EFFORT_CATEGORIES (NAME VARCHAR(255), DESCRIPTION VARCHAR(500));
Query OK, 0 rows affected (0.04 sec)

mysql> CREATE TABLE ARTIFACTS (NAME VARCHAR(255), DESCRIPTION VARCHAR(500));
Query OK, 0 rows affected (0.03 sec)

mysql> CREATE TABLE PLANS (NAME VARCHAR(255), DESCRIPTION VARCHAR(500));
Query OK, 0 rows affected (0.10 sec)

mysql> CREATE TABLE INTERRUPTIONS (NAME VARCHAR(255), DESCRIPTION VARCHAR(500));
Query OK, 0 rows affected (0.10 sec)

mysql> CREATE TABLE DEFECTS (NAME VARCHAR(255), DESCRIPTION VARCHAR(500));
Query OK, 0 rows affected (0.11 sec)
```

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➢ Defining the keys:

MySQL 8.0 Command Line Client

```
mysql> ALTER TABLE LIFE_CYCLE
    -> ADD UNIQUE(NAME,DESCRIPTION);
Query OK, 0 rows affected (0.13 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE STEP
    -> ADD UNIQUE(NAME,DESCRIPTION);
Query OK, 0 rows affected (0.11 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE CONDITIONS
    -> ADD UNIQUE(NAME,DESCRIPTION);
Query OK, 0 rows affected (0.10 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE TASK
    -> ADD UNIQUE(NAME,DESCRIPTION);
Query OK, 0 rows affected (0.10 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE ROLES
    -> ADD UNIQUE(NAME,DESCRIPTION);
Query OK, 0 rows affected (0.10 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE EFFORT_CATEGORIES
    -> ADD UNIQUE(NAME,DESCRIPTION);
Query OK, 0 rows affected (0.10 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE ARTIFACTS
    -> ADD UNIQUE(NAME,DESCRIPTION);
Query OK, 0 rows affected (0.09 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE PLANS
    -> ADD UNIQUE(NAME,DESCRIPTION);
Query OK, 0 rows affected (0.10 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE INTERRUPTIONS
    -> ADD UNIQUE(NAME,DESCRIPTION);
Query OK, 0 rows affected (0.05 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE DEFECTS
    -> ADD UNIQUE(NAME,DESCRIPTION);
Query OK, 0 rows affected (0.13 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

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```
mysql> ALTER TABLE TASK
    -> ADD CONSTRAINT TASK_ROLE
    -> FOREIGN KEY (NAME) REFERENCES ROLES(NAME);
Query OK, 0 rows affected (0.17 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE TASK
    -> ADD CONSTRAINT ARTIFACT_TASK
    -> FOREIGN KEY (NAME) REFERENCES ARTIFACTS(NAME);
Query OK, 0 rows affected (0.18 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> ALTER TABLE TASK
    -> ADD CONSTRAINT TASK_EFFORT_CATEGORIES
    -> FOREIGN KEY (NAME) REFERENCES EFFORT_CATEGORIES(NAME);
Query OK, 0 rows affected (0.17 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> ALTER TABLE EFFORT_CATEGORIES
    -> ADD CONSTRAINT EFFORT_CATEGORIE_ARTIFACT
    -> FOREIGN KEY (NAME) REFERENCES ARTIFACTS(NAME);
Query OK, 0 rows affected (0.08 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE EFFORT_CATEGORIES
    -> ADD CONSTRAINT EFFORT_CATEGORIE_PLANS
    -> FOREIGN KEY (NAME) REFERENCES PLANS(NAME);
Query OK, 0 rows affected (0.14 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE EFFORT_CATEGORIES
    -> ADD CONSTRAINT EFFORT_CATEGORIE_INTERRUPTIONS
    -> FOREIGN KEY (NAME) REFERENCES INTERRUPTIONS(NAME);
Query OK, 0 rows affected (0.17 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE EFFORT_CATEGORIES
    -> ADD CONSTRAINT EFFORT_CATEGORIE_DEFECTS
    -> FOREIGN KEY (NAME) REFERENCES DEFECTS(NAME);
Query OK, 0 rows affected (0.20 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Project Activity– 1

4. **Describe the structure for each table and provide the snapshot and txt file for the same.**

```
mysql> SHOW CREATE TABLE TASK;
| Table | Create Table |
| TASK  | CREATE TABLE `task` (
  `NAME` varchar(255) NOT NULL,
  `DESCRIPTION` varchar(500) DEFAULT NULL,
  PRIMARY KEY (`NAME`),
  UNIQUE KEY `NAME` (`NAME`,`DESCRIPTION`),
  CONSTRAINT `ARTIFACT_TASK` FOREIGN KEY (`NAME`) REFERENCES `artifacts` (`NAME`),
  CONSTRAINT `TASK_EFFORT_CATEGORIES` FOREIGN KEY (`NAME`) REFERENCES `effort_categories` (`NAME`),
  CONSTRAINT `TASK_ROLE` FOREIGN KEY (`NAME`) REFERENCES `roles` (`NAME`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
1 row in set (0.07 sec)
```

```
MySQL 8.0 Command Line Client

mysql> SHOW CREATE TABLE ROLES;
| Table | Create Table |
| ROLES | CREATE TABLE `roles` (
  `NAME` varchar(255) NOT NULL,
  `DESCRIPTION` varchar(500) DEFAULT NULL,
  PRIMARY KEY (`NAME`),
  UNIQUE KEY `NAME` (`NAME`,`DESCRIPTION`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
1 row in set (0.00 sec)
```

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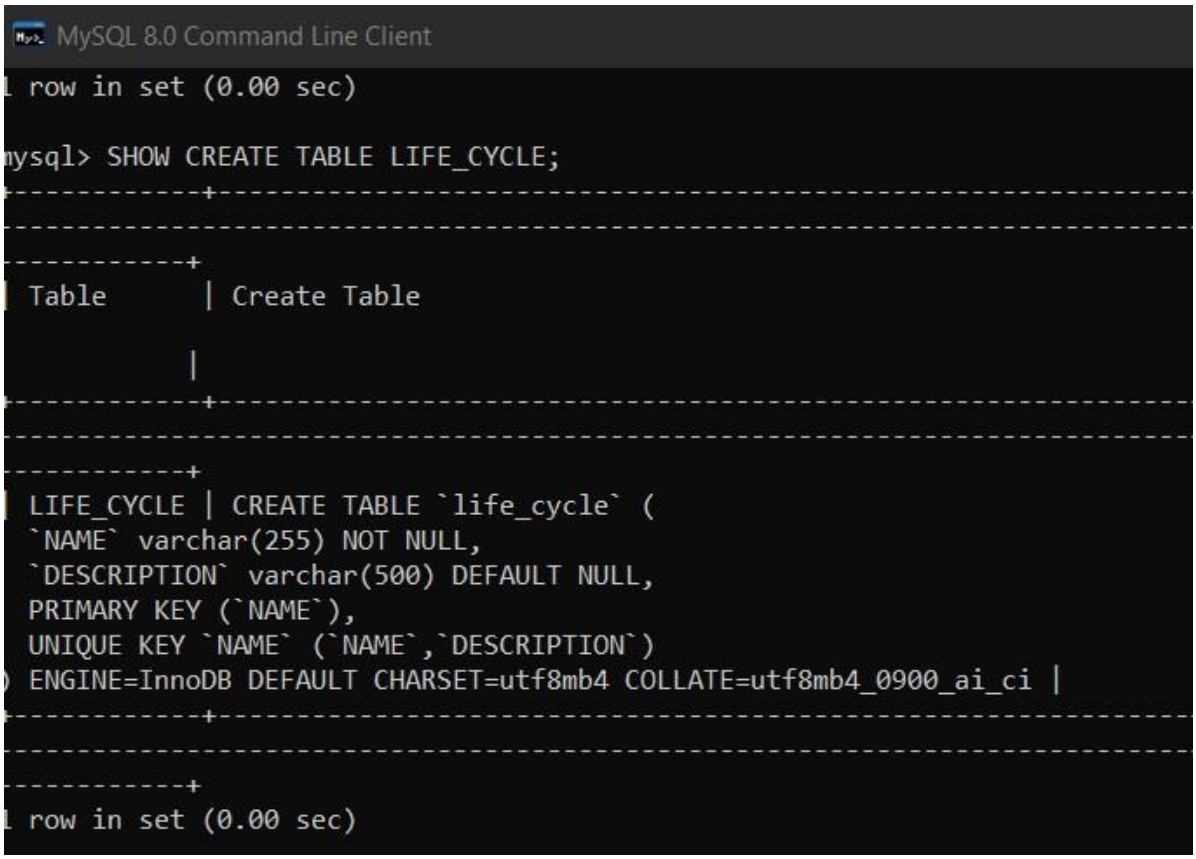

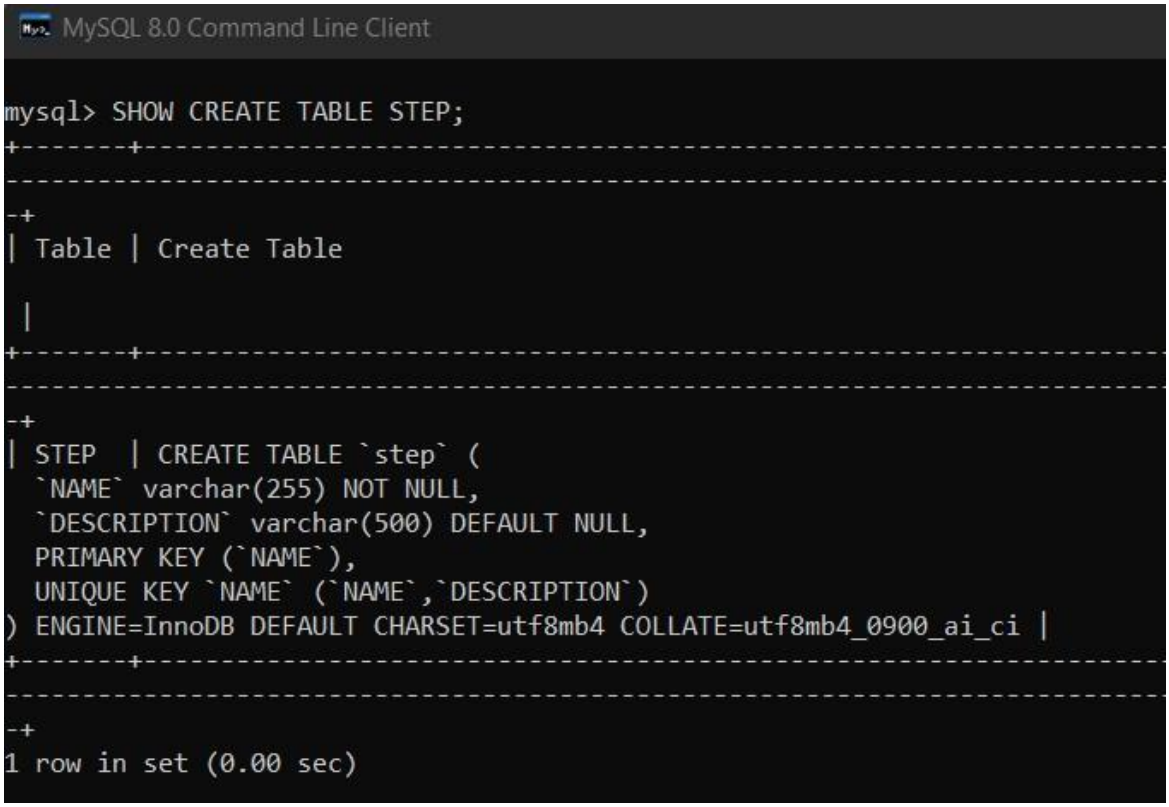

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```
mysql> SHOW CREATE TABLE CONDITIONS;
+------------+--------------------------------------------------
| Table      | Create Table
                                                    |
+------------+--------------------------------------------------
| CONDITIONS | CREATE TABLE `conditions` (
  `NAME` varchar(255) NOT NULL,
  `DESCRIPTION` varchar(500) DEFAULT NULL,
  PRIMARY KEY (`NAME`),
  UNIQUE KEY `NAME` (`NAME`,`DESCRIPTION`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
+------------+--------------------------------------------------
1 row in set (0.00 sec)
```

```
MySQL 8.0 Command Line Client
1 row in set (0.00 sec)

mysql> SHOW CREATE TABLE EFFORT_CATEGORIES;
+-------------------+--------------------------------------------
| Table             | Create Table
                                                    |
+-------------------+--------------------------------------------
| EFFORT_CATEGORIES | CREATE TABLE `effort_categories` (
  `NAME` varchar(255) NOT NULL,
  `DESCRIPTION` varchar(500) DEFAULT NULL,
  PRIMARY KEY (`NAME`),
  UNIQUE KEY `NAME` (`NAME`,`DESCRIPTION`),
  CONSTRAINT `EFFORT_CATEGORIE_ARTIFACT` FOREIGN KEY (`NAME`) REFERENCES `artifacts` (`NAME`),
  CONSTRAINT `EFFORT_CATEGORIE_DEFECTS` FOREIGN KEY (`NAME`) REFERENCES `defects` (`NAME`),
  CONSTRAINT `EFFORT_CATEGORIE_INTERRUPTIONS` FOREIGN KEY (`NAME`) REFERENCES `interruptions` (`NAME`),
  CONSTRAINT `EFFORT_CATEGORIE_PLANS` FOREIGN KEY (`NAME`) REFERENCES `plans` (`NAME`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
+-------------------+--------------------------------------------
1 row in set (0.00 sec)
```

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```
mysql> SHOW CREATE TABLE ARTIFACTS;
+-----------+----------------------------------------------------------------------------------------------------------------------------------------------------------+
| Table     | Create Table
          |
+-----------+----------------------------------------------------------------------------------------------------------------------------------------------------------+
| ARTIFACTS | CREATE TABLE `artifacts` (
  `NAME` varchar(255) NOT NULL,
  `DESCRIPTION` varchar(500) DEFAULT NULL,
  PRIMARY KEY (`NAME`),
  UNIQUE KEY `NAME` (`NAME`,`DESCRIPTION`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
+-----------+----------------------------------------------------------------------------------------------------------------------------------------------------------+
1 row in set (0.00 sec)
```

```
mysql> SHOW CREATE TABLE PLANS;
+-------+----------------------------------------------------------------------------------------------------------------------------------------------+
| Table | Create Table
  |
+-------+----------------------------------------------------------------------------------------------------------------------------------------------+
| PLANS | CREATE TABLE `plans` (
  `NAME` varchar(255) NOT NULL,
  `DESCRIPTION` varchar(500) DEFAULT NULL,
  PRIMARY KEY (`NAME`),
  UNIQUE KEY `NAME` (`NAME`,`DESCRIPTION`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
+-------+----------------------------------------------------------------------------------------------------------------------------------------------+
1 row in set (0.00 sec)
```

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```
mysql> SHOW CREATE TABLE INTERRUPTIONS;
+---------------+------------------------------------------------------------
-----------------------------------------------------------------------------
-----------------+
| Table         | Create Table

                 |
+---------------+------------------------------------------------------------
-----------------------------------------------------------------------------
-----------------+
| INTERRUPTIONS | CREATE TABLE `interruptions` (
  `NAME` varchar(255) NOT NULL,
  `DESCRIPTION` varchar(500) DEFAULT NULL,
  PRIMARY KEY (`NAME`),
  UNIQUE KEY `NAME` (`NAME`,`DESCRIPTION`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
+---------------+------------------------------------------------------------
-----------------------------------------------------------------------------
-----------------+
1 row in set (0.00 sec)
```

```
mysql> SHOW CREATE TABLE DEFECTS;
+---------+------------------------------------------------------------------
-----------------------------------------------------------------------------
-----+
| Table   | Create Table

      |
+---------+------------------------------------------------------------------
-----------------------------------------------------------------------------
-----+
| DEFECTS | CREATE TABLE `defects` (
  `NAME` varchar(255) NOT NULL,
  `DESCRIPTION` varchar(500) DEFAULT NULL,
  PRIMARY KEY (`NAME`),
  UNIQUE KEY `NAME` (`NAME`,`DESCRIPTION`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
+---------+------------------------------------------------------------------
-----------------------------------------------------------------------------
-----+
1 row in set (0.00 sec)
```

5. Provide a brief description of each module in the project.

- **LifeCycles:** It has LifeCycleSpecific class which establishes the user interface for

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- Life Cycles Tab objects inheriting the ListItem and building upon it
- **Steps:** It has Steppecific class which establishes the user interface for Steps Tab objects by inheriting the ListItem and building upon it
- **Conditions:** It has ConditionSpecific Class which establishes the user interface for Conditions Tab objects by inheriting the ListItem and building upon it with a tab specific entity list that parallels the ListItem list
- **Tasks:** It has TaskSpecific Class which establishes the user interface for Tasks Tab objects by inheriting the ListItem and building upon it.
- **Roles:** It has RoleSpecific Class which establishes the user interface for Roles Tab objects by inheriting the ListItem and building upon it
- **Artifacts:** It has ListItem Class which establishes the user interface for list item objects. This Tab provides the user with the capability of establish a list of named item kinds in a specified order with a description for each. When an effort logger needs to log effort against a new item, this list is used to help classify the new item into one of the kinds of items in this list. By providing a list of kinds, we make it possible to

distinguish between different kinds of items and thereby provide a way of grouping similar items together so effort estimation can be more accurate.

- **Plans:** It has ListItem Class which establishes the user interface for list item objects. This Tab provides the user with the capability of establish a list of named item kinds in a specified order with a description for each. When an effort logger needs to log effort against a new item, this list is used to help classify the new item into one of the kinds of items in this list. By providing a list of kinds, we make it possible to distinguish between different kinds of items and thereby provide a way of grouping similar items together so effort estimation can be more accurate.
- **Interruptions:** It has ListItem Class which establishes the user interface for list item objects. This Tab provides the user with the capability of establish a list of named item kinds in a specified order with a description for each. When an effort logger needs to log effort against a new item, this list is used to help classify the new item into one of the kinds of items in this list. By providing a list of kinds, we make it possible to distinguish between different kinds of items and thereby provide a way of grouping similar items together so effort estimation can be more accurate.

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- **Defects:** It has ListItem Class which establishes the user interface for list item objects. This Tab provides the user with the capability of establish a list of named item kinds in a specified order with a description for each. When an effort logger needs to log effort against a new item, this list is used to help classify the new item into one of the kinds of items in this list. By providing a list of kinds, we make it possible to distinguish between different kinds of items and thereby provide a way of grouping similar items together so effort estimation can be more accurate.
- **Effort Categories:** EffortCategorySpecific Class which establishes the user interface for EffortCategories Tab objects by inheriting the ListItem and building upon it.