Task 8:- Normalizing databases using functional dependencies upto BCNF.

Upon relational tables created in task-2 Perform normalization upto BCNF based of given opened erries as following to the assumed relations specified below

Employee Databases:-

1.) Identify employee attributes - Employee-ID. Name, Department, Job-Title- manager-ID mire- Date- salary.

2.) Determine functional dependences (FDs) between attributes:-

* Employee-ID → Name, Department, Job-Title, Manager-ID, Hire-Data, salary-Department → Manager-ID-manager-ID → Name

step 2:- Convert to 1 NF

1- Eliminate repeating group or array (more in this example):

2- create separate tables for each repeating group (none in this examples):

step 3:- Convert to 3NF

1.) Ensure there are no transitive dependents

* create manager table :- Manger (Manages-ID. Name).

-update Deparatment table: Department C Department-ID, Manger-ID)Y.

step 4:- Conver to 3NF

1.) Ensure there are no transitive depedencies.

2.) More non-key attributes to separate, tables if they depend or another non-key attribute.

step 5:- Convert to BCNF

1.) Ensure every determinat is a conditable key.

2.) check for over lapping conditate keys - No further decomposition needed using Graffite Tool

* Input relational setema and function dependencies.
* Grith. tool generates a dependening grat.
* Analyse the graph to identify rortalization issues.

OUTPUT :-

Tablename	Attributes
Employee	Employee_ID (PK), Name, Department_ID (FK), Job_Title, Hire_Date, Salary.
Department	Department_ID (PK), Manager_ID (FK)
Manager	Manager_ID (PK), Name

Griffith Tool steps:-

1.) create a new project in Griffith.
2.) Define the relational schema and FDs.
3.) Run the "Dependency Graph" tool.
4.) Analyse the graph for normalization issues.

Normalized schema

1.) Employee (Employee_ID, Name, Department_ID, Job_Title, Hire_Date, salary).
2.) Department (Department_ID, manager_ID).
3.) Manger (manager_ID, Name).

VEL TECH - CSE	
EX NO.	8
PERFORMANCE (5)	5
RESULT AND ANALYSIS	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (30)	20
SIGNATURE DATE	6/9/25

Result:- Thus, the normalizing database wins functional dependencies upto BCNF is executed successfully.