

DATABASE SYSTEMS

ASSIGNMENT REPORT

AI-BASH

PREPARED FOR :
Assignment

DONE BY:
i22-0474
Urwah Ejaz

ROADMAP TO SOLUTION

Entities :

- Project
- Developer
- User
- Subscribers
- Bugs
- Updates
- Downloads

Relationships

Project:

- Project is Developed by a Developer
- Project has Updates
- Project can have Bugs
- Project is downloaded by Users

Developer:

- is a subscriber as well
- is a user as well
- can make updates to Project
- can file bug reports

User:

- can download Projects
- are Subscribers

Subscribers:

- can be Paid/Free depending on graduation year
- can be a developer as well
- can file bug reports

Bug:

- can be issued by Developers
- Has unique bug id for all the projects with same project id.
- Project can have multiple bugs

Updates

- can be made by Developers
- One Project has many updates
- One Update is linked with only one project

Downloads

- user can download multiple projects
- that user can be subscriber as well

Transactions

- one transaction is one update for one project
- connected this table to both Project & Updates

Explanation

- I made a separate entity named 'Users' to deal both with 'Subscribers' and 'Developers'. So that both could be handled easily
- Subscriber's table include the user id so that subscriber's bio data is retrievable
- Project's table include developer id because a project is developed/owned by some developer
- Developer has a another table which has developer id and corresponding subscriber id
- From this subscriber id, I can retrieve developer's name, contact and other details in the 'Users' table using joins
- One Project can be downloaded by multiple users and multiple users can download multiple projects.
- That is why I made another table to keep record of one project's download count per user
- Project Id is also included in Updates and Bug table in order to identify which update or bug is referencing which project id.
- Update's table include developer id as well to keep note that for which project id which developer id was used
- same case for bugs as well
- Bug's table also include the Project id, developer id and subscriber id to note the record of bugs made by one developer to one project
- Each transaction is linked with one update made to each Project

Problems

- To identify relationship between Developer, Bugs , Updates and Projects

Optimal Solution

- Separate tables for Subscriber and Developer
- Addition of Project id and Developer ID in Bugs and Updates table to keep track of these for each project and developer