Criterion A: Planning

Defining the problem:

The **client Mr. V** (identity hidden due to privacy concerns) is the **CEO/ Manager of a Healthcare Tech Company**. As it is a start-up that is slowly increasing the number of employees, it wants a systematic manner of managing its human resources more productively rather than manual bookkeeping. Mr. V and his team are currently focusing on improving the healthcare system and hence, are outsourcing the **Human Resource Management Solution.** He approached me to develop a solution that meets his HR requirements.

During our interaction (Appendix: Consultation), Mr. V expressed the need for a locally-hosted solution that can store employee details which he would be able to view at any time. I also understood that he wants the program to store salaries and benefits provided to the employees. The program should be able to calculate company expenditures on travels or technological materials that require reimbursement. He also expressed that the employees should be able to login to the application using their unique IDs to apply for leave, enabling him to track their attendance. Finally, he wants to maintain employee satisfaction and is requesting a provision for employees to send him feedback. Once provided to the client, he will load it onto employee devices (Appendix: Feedback).

Rationale for Proposed Solution:

I will be designing a new solution for the company, under the guidance of my **Computer Science teacher (advisor)**. I think a database with an effective connection to a user-interface will help me meet Mr. V's requirements. The database can be used to store demographic details of employees, their leaves, and budgeting expenses. I decided to use MySQL to maintain the database because it works more efficiently across all platforms and operating systems. Furthermore, it has better security options that can be configured with SSL support, which is important to the client since the stored data is highly confidential. However, not every employee is comfortable using MySQL directly and hence, the system will require an easily accessible user-interface. I decided to create a program using Python that will connect with the MySQL database. I chose Python over other languages primarily because it is the

easiest language to understand and edit in case Mr. V wants to incorporate different features as the company grows. The easy readability will enhance the extensibility of the solution for my client. The availability of libraries like Tkinter allows the creation of a GUI with labels and buttons that can be assigned different methods.

Stating Success Criteria:

1. Login feature for the manager and each employee
2. Separate interface for the manager and the employees
3. Provision for manager to add, modify, or delete an employee and their personal details
4. Feature to view and search for all the employees in a tabular format
5. Provision for manager to enter and edit total salary, and view various automatic budget calculations for the given year
6. Calendar feature for the employee to enter the leaves going to be taken and manager to view it
7. Feature that allows each employee to change password
8. Provision to enter anonymous feedback and suggestions to the managers using the employee account
9. Data entry error handling and validation through warning messages throughout

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