BSCS-15068 Ahmed Shahzad
BSCS-15028 Fozan Gardezi
BSCS-15027 Shahzaib Malik

Requirements:

We aim to create a web service that will provide our users with the latest information regarding Universities and Colleges in Pakistan. Our main focus will be to assist students around Pakistan achieve their goals and get admission in the university of their dreams.

Our app will help students shortlist universities and choose the one that meets their requirements. We'll mainly rank and filter universities based on their:

- Departments
- Fee structure
- Region
- HEC/PEC etc. recognition
- Merit
- Previous closing merit
- Admission Date
- Scholarship criteria

We'll also add additional non-rankable information such as, a brief description, faculty, number of campuses etc. Additionally, we also plan to add an automatic merit calculation system for a student to determine their chances of getting an admission.

Q 01: Do you think you need mathematical verification of correctness of your system or a part of your system? Why?

Answer:

Yes since we'll be using mathematical formulas to calculate a student's merit and sort universities accordingly.

Q 02: Can you separate various concerns of your project from functional and quality perspectives? Highlight the concerns and describe how can you handle concerns separately?

Answer:

- Database designing
    - ERD
    - ERD-to-SQL
- Application interface design
    - For users / Front-end
        - Design mockup
        - Implementation in code
        - Design QA
    - For management / Control Panel
        - Design mockup
        - Implementation in code
        - Design QA
- Data uploading
    - Via direct Database access
    - Via Control Panel
- Final QA

Q 03: Identify some functional modules in your system. Discuss coupling and cohesion aspects.

Answer:

Some of the modules in our system include:

- Database design
- Routines for database access
    - Input
    - Retrieval
- Input interface for universities
- Interface for end-users

Coupling:

Interface for universities and end-users has relationship with the “database access routines”, which has relationship with database design.

Cohesion:

Database access creates a relationship within the data input and retrieval, change in one changes/edits the other. It particularly focuses on altering data

Similarly the interface for end-users and for universities will alter for all users/universities if changed in the actual application.

Q 04: Identify the potential future changes in your system. Pick one potential change and discuss how would you address it in your system?

Answer:

We could publish past papers of different entry tests for universities. We would need to create a separate entity for them which will have a many to many relation with the university entities.

Q 05: Which increments would you suggest if you are asked to build your system incrementally?

Answer:

1. We will start by publishing all the universities and their detailed information.
2. We will create a filtering algorithm to shortlist universities based on his/her requirements.
3. We will improve our filtering algorithm by introducing multi variable filtering
4. We will introduce a merit calculating system
5. We will add a history of all the closing merits of a university