CEP Description for Job Circular Website (Hirely)

Problem Statement:

The project aims to develop a responsive web platform that allows employers to post job circulars and jobseekers to search and apply for jobs. It involves designing efficient databases, implementing secure user roles, managing dynamic data, and ensuring performance under real-time usage—making it complex in both design and execution.

Knowledge Profile (K):

- **K3 – Design of databases:** Requires relational schema design, normalization, and ER modeling for structuring job circulars, users, and applications.
- **K4 – Use of tools:** Involves applying MySQL and PHP for backend management, and HTML/CSS for frontend design, reflecting tool proficiency.
- **K5 – Integration:** Frontend and backend integration is necessary to create a working system that handles user interactions and real-time updates smoothly.

Complex Engineering Problem Range (P):

- **P1 – In-depth engineering knowledge:** Understanding of DBMS concepts, normalization, indexing, and transactions is essential.
- **P2 – Conflicting requirements:** The system must balance data accuracy and validation with fast response times and ease of use.
- **P3 – Depth of analysis:** Requires designing efficient queries, relationships between entities, and handling large datasets.
- **P6 – Diverse constraints:** Considers data privacy, user authentication, storage limits, and performance optimization.

Complex Engineering Activities (A):

- **A1 – Problem identification:** Recognizing challenges in job posting, data handling, and user experience based on current market needs.
- **A2 – Design & development of solutions:** Involves architecting the system, developing database models, and coding the platform.
- **A4 – Use of engineering tools:** Uses development tools like MySQL Workbench, code editors, and version control (e.g., Git).

Justification:

The project satisfies the criteria for a Complex Engineering Problem as it integrates multiple technical skills, demands real-world considerations, involves analysis and system design, and uses professional tools to deliver a functioning solution with user and data security in mind.