



# Tools and Development Phases:

## A- Development Phases :

1. **Requirement Analysis & Design:** Document all functional and non-functional requirements. Design system architecture and user interface mockups.
2. **Back-end Development:** Use Python and Flask to develop the core application logic, password validation routines, API endpoints, and integrations with external services (dictionary databases).
3. **Database Development:** Design and implement a secure database schema (e.g., MySQL) to store user information (excluding passwords) and potentially hashed common weak passwords.
4. **API Development:** Develop a RESTful API using Flask to facilitate communication between the user interface and the back-end.
5. **Front-end Development:** Utilize Bootstrap to build a user-friendly web interface for user registration, password creation, and feedback on password strength. Integrate password strength meters and optional detailed reports.
6. **Testing and Deployment:** Conduct thorough unit testing, integration testing, and security testing before deployment. Deploy the application to a secure web server.

## B-Tools:

- **Programming Language:** Python (back-end development)
  - **Web Framework:** Flask (back-end development)
  - **Database:** MySQL (secure storage of common weak passwords)
  - **API Framework:** Flask (API development)
  - **Front-end Framework:** Bootstrap (user interface development)
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