4. Functional Requirements Specification

Stakeholders:

This system is created for anyone seeking programming challenges online. This system will also be of interest to hiring managers and recruiters seeking to test incoming interviewees. Some examples of those interested are:

* Computer Science undergraduate and graduate students
* Programming teachers or professors
* People seeking employment in software development
* Hiring managers and recruiters at software firms
* Hobbyist programmers

Additionally, the sites originating the challenges are also stakeholders. Our program relies on them for content, but it will expose users to challenge websites that they may never have heard of otherwise.

Actors:

We have identified three main actors in this system

* User- a user that has registered in the system
* Administrator- an administrator of the system responsible for updating/maintain database
* Database- Stores programming challenges to present to user

Use Case Casual Description:

We have separated the use case in to two categories one set for the front-end or a user searching the database, and one set for the backend for updating and maintaining.

Front-end Use Cases:

UC1: Search: allows a user to search the database and be presented with a list of appropriate challenges filtered too their desire.

UC2: View: allows user to view selected challenge and get the details

UC3: Register: a user registers an account in the system and store challenge specific information.

UC4: login: allows a user to login a view saved challenges.

UC5: Mark: allows a user to mark a viewed challenge as a favorite or completed.

UC6: View Saved: allows a user to view there favorited, or completed challenges

Front-end Traceability Matrix

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **REQ** | **PW** | **UC1** | **UC2** | **UC3** | **UC4** | **UC5** | **UC6** |
| **REQ1** | 1 | X |  |  |  |  |  |
| **REQ2** | 3 | X |  |  |  |  |  |
| **REQ3** | 5 |  |  |  |  | X |  |
| **REQ4** | 4 |  |  | X |  |  |  |
| **REQ5** | 4 |  |  |  | X |  |  |
| **REQ6** | 5 |  |  |  |  | X | X |
| **REQ7** | 2 |  | X |  |  |  | X |
| **Max PW** | | 3 | 2 | 4 | 4 | 5 | 5 |
| **Total PW** | | 4 | 2 | 4 | 4 | 10 | 7 |

Back—end Use case:

UC7: Auto-Update: allows the system to update the database by querying the listed sties at set intervals

UC8: Manual-Update: allows an administrator to update the database by issuing queries or by adding or removing challenges selected by the administrator.

Back-end Traceability Matrix

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ** | **PW** | **UC7** | **UC8** |
| **REQ1** | 1 | X |  |
| **REQ2** | 1 | X |  |
| **REQ3** | 1 |  | X |
| **REQ4** | 1 |  | X |
| **Max PW** | | 1 | 1 |
| **Total PW** | | 2 | 2 |