**“Progressive Analysis Assessment: Based on Raven’s Progressive Matrices”**

Outline of Dissertation submitted in partial fulfilment of the requirements of

1. Tech

By

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First Semester 2020 - 21

SEWP ZG628T /CSIW ZG628T DISSERTATION



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Dissertation Outline

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EXCELLENT / GOOD / FAIR/ POOR (Please specify):

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**DISSERTATION TITLE**

Progressive analysis assessment based on Raven’s Progressive Matrices.

**PURPOSE AND EXPECTED OUTCOME**

The proposed application is to reform the assessment system in the current educational system. Since the education system in India is evolving into a culture where candidates now should have more exposure to practical scenarios and there is a higher emphasis on vocational studies, the proposed system based on Raven’s Progressive Matrices for assessing thus will be enhanced and efficient in tracking the progress of the user in various domains. The application will allow goals to be set for the user and track at which stage the user is facing difficulty, and can proceed accordingly.

**BACKGROUND**

The Education system in the country is going through an extensive transformation with the proposal of the new education policy. With the onset of the several major reforms going on, the said application is proposed to cope up with assessment and evaluation system. The new education system allows for the students for a 5+3+3+4 structure for grade progression. The lines between science,arts and commerce are blurred by the new policy, thus students can have a wider approach for their areas of development and interest. This would provide them with a higher ability to be more satisfied and happy individual with a profession of their passion.

The application is based on Raven’s Progressive Matrices, which is a test used in educational settings. It is made of a set of questions, listed in order of difficulty This test can measure abstract reasoning, and estimate fluid and crystallized intelligence.

High IQ societies such as Mensa and Triple Nine Society also use tests based on Raven’s Advanced Progressive Matrices to determine the candidate’s abilities.

**OBJECTIVES OF PROPOSED SYSTEM**

The application shall have 3 types of user, an administrator, a mentor, and a end-user. The administrator is responsible for verifying the mentor and the users, their details. The mentor is responsible for setting up the assessment and the goals. The end-user is the one who is taking up the assessment.

Based on the assessment, the application provides for the area of strength, and weakness of the end-user, which would cater in all round and focused development.

The assessment should allow for the end-user to be able to pick up their own fields of subject and alert the mentor of it.

The application would allow the mentor to set goals for the end-user to achieve through the assessments taken up.

**Justification for selecting a particular methodology for completing the tasks**

The methodology followed through the course of this project would be agile.

The unstructured agile model would allow for the development process to be iterative. The modules can be created, tested and then developed again iteratively.

Errors could be fixed in much earlier stages of the application development. It would provide a better insight to the application to prepare a solution design.

**DETAILED PLAN OF WORK (For 16 weeks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Serial number of task** | **Tasks or subtasks to be done** | **Planned duration in weeks** | **Specific deliverable in terms of the project** |
| 1 | Analysis and Research | 2 | Prepare a document with relevant research findings, algorithms to be used for designing the progressive test case scenarios |
| 2 | Requirement specification and high level analysis | 2 | Requirement specification document and Designing the architecture, class diagram, context diagram, and use cases. |
| 3 | Technology to involve, and their relevance to the requirements | 1 | Solution design using modern techniques using NoSQL DB engine and Javascript framework |
| 4 | Designing the UI and UX | 1 | Analysis of an easy user experience and acceptable UI design with respect to the Javascript framework to be used. |
| 5 | Designing the database | 1 | Analysis of the required tables, constraints, schema. |
| 6 | Designing the middleware | 1 | Analysis of the business logic and data flow |
| 7 | Coding the UI | 1 | Implementation of the UI design created using HTML,CSS and Angular |
| 8 | Coding the database | 1 | Implementation of the database tables, schema,constraints using MongoDB. |
| 9 | Coding for middleware | 1 | Implementation of service calls, REST API modules and data flow. |
| 10 | Unit testing | 1 | All scenarios for the user navigation through the application |
| 11 | System integration testing | 1 | Test scenarios for different modules |
| 12 | User acceptance testing | 1 | UAT bug testing (asking colleagues to use the system for reviews) |
| 13 | Completion of dissertation report | 2 | Final dissertation report with Supervisor’s approval, with remarks for upgrades and changes if any, and integrate them in final report. |

**Technologies used for development**

Front end : HTML , CSS

Front end framework : Angular 9

Middleware :MVC framework, ASP.net

Backend : MongoDB