*EDUTATIVE*

FUNCTIONAL REQUIREMENTS DEFINITION

Version <*1.0>*

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# INTRODUCTION

## PURPOSE OF THE FUNCTIONAL REQUIREMENTS DEFINITION

The purpose of this Functional Requirements Definition documents and tracks the necessary information required to effectively define business and functional requirements for Edutative.

# BUSINESS REQUIREMENTS OVERVIEW

## BUSINESS PROBLEM STATEMENT

According to a study[1] conducted by NEMIS (National Education Management Information System), the total enrolment of students at higher secondary schools is 1.246 million. That means about a million confused students unsure about the major they want to pursue and the appropriate university for that. The confusion leads to frustration, disorder, and rushed decisions about one’s future sometimes transforming into four years of regret.

## SCOPE STATEMENT

The website named Edutative currently presents information about 40 universities to students. Students can find out a university’s information according to their interests and look at campus’s life.

The platform is currently lacking the feature of maintaining online practice of entry tests. The front end of the website needs to be redesigned. Users registering feature and maintaining their profiles is another requirement that the platform currently does not have. We will be catering these issues intending to provide a better platform than the existing one.

## RISKS AND LIMITATIONS

The complete front-end of the website might not be developed as the time span is less than two months.

## FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS

Following are the functional requirements for Edutative:

* Login
* Register
* View and Maintain Profile
* Log out
* Search a university
* See ranking of university
* Take test
* Become a premium member
* Add University (for admin)
* Set Practice Questions (for admin)
* Update University Ranking (for admin)

Following are non-functional requirements for Edutative:

* Performance (response time, throughput)
* Availability
* Usability
* Scalability
* Reliability
* Maintainability
* Supportability

## QUALITY REQUIREMENTS

### Usability

The following features must be incorporated in the website:

1. User-friendly
2. Simplicity
3. Easy navigation
4. Platform independent
5. Consistent and clear

### Style

For the website’s styling, the following will be used:

1. W3C coding standards along with valid CSS/Html.
2. High contrast color choice (keeping in mind color blind students)

Style will be consistent throughout whole website.

### Content

The content of the website will be:

1. Authentic
2. Readable (by using highlighted headings and subheadings)
3. Explanations of jargons if any

### Search Optimization

All pages will have relevant keywords in title tags, meta descriptions and heading tags.

### Security

The back-end will be secured to prevent hackers from entering malicious code in the database.

## STAKEHOLDER LIST

1. **Project** **Manager**: Ensures that project goals are achieved on schedule. The team leader will be the project manager.
2. **Developers**: Identify ways to solve the business problem in order to manage, store and process data. The team members Waqar Ali and Rida Bari will be responsible for front end. Qandeel Mushtaq will be managing back end.
3. **Testing** **team**: Helps developers to validate the user requirements throughout project development. The testing team will consist of Qandeel Mushtaq and Zainab Iftikhar.
4. **Client**: A person who encounters problem and is willing to spend money in order to solve it. Hassan Shahid is our client for developing Edutative.
5. **End Users**: Provide with opinions & preferences in order to improve their experience. Students enrolled in high school are our end users.

# FUNCTIONAL REQUIREMENTS

Following are the functional requirements of the system. These requirements can be traced using a traceability matrix (Defined in Use-case Analysis Document).

**FR1. The system shall be able to register new users.**

FR1.1 The system must let user enter his name

FR1.2 The system must let user enter his email

FR1.2.1 If email already exists, system shall ask the user to enter another email.

FR1.3 The system must let user enter his password

FR1.3.S1 Password must be encrypted before entering into database.

FR1.3.S2 Password will be represented by asterisks.

FR1.4 The system must let user enter his username

FR1.4.1 If username already exists, system shall ask the user to enter another username

FR1.4.U1 Username must be at least 5 characters long.

FR1.5 The system must let user enter his current education

FR1.I1 A drop down list shall be displayed with the options primary education, secondary education, and higher-secondary

FR1.6 The system shall let user enter his contact

FR1.6.U1 Contact must be 11 characters long.

FR1.7 Once signed up, system must send a verification email to the user

FR1.7.1 After successful email verification, system shall redirect to login page.

FR1.7.P1 Page should respond in less than 3 seconds once sign up successful.

**FR2. The system shall let member/admin log in**

FR2.1 The system must let user enter his username.

FR2.2 The system must let user enter his password.

FR2.2.S1 Password will be represented by asterisks.

FR2.3 If the login is successful, system shall direct user to home page

FR2.3.P1 Home page must load in less than 3 seconds after redirection from login.

FR2.4 If the login is unsuccessful, user remains on login page.

FR2.4.U1 “Incorrect Credentials” must be displayed by the system.

**FR3. The system shall allow member/admin to search for a university**

FR3.I1 The search bar will be at top of the screen

FR3.P1 Search results should be displayed in less than 3 seconds.

FR3.2 User can search universities by its department or major or cities.

FR3.3 Upon search, system shall display list of universities that fulfill the criteria.

**FR4 The system shall allow members/admin to edit their profiles**

FR4.1 User can edit his name.

FR4.2 User can edit his username.

FR4.3 User can edit his email.

FR4.4 User can edit his contact number.

FR4.5 User can change his password.

FR4.5.1 System shall allow user to enter his current password.

FR4.5.2 System shall allow user to enter his new password.

FR4.5.3 System shall allow user to enter his new password again.

FR4.5.4 User must select “save” to change password.

FR4.5.5 If “cancel” is selected, all changes will be discarded.

FR4.5.S1 All password fields will be represented by asterisks.

FR4.6 User can change his profile picture.

FR4.6.1 User will select “change photo”.

FR4.6.2 The system must open a wizard for user.

FR4.6.3 User will double-click a photo to upload it.

FR4.7 All changes shall be incorporated only when user selects to save.

FR4.8 If “Cancel” is selected, all changes shall be discarded.

**FR5 The system shall allow members to take test**

FR5.1 The system shall member select a subject.  
FR5.2 The system shall allow user to choose how many questions are required between 0-50.

FR5.3 The system shall allow the user go to a previously answered question to change answer.

FR5.4 On completing test, system shall display the number of correct and incorrect answered questions.

FR5.5 On completing test, system shall display the correct answers of all questions.

FR5.6 The system shall allow user to email his scores by selecting “Email Scores” option.

**FR6 The system shall allow members to upgrade to premium members**

FR6.1 The system shall allow user to enter CNIC.

FR6.1.1 The system shall inform user if CNIC already exists in the database.

FR6.1.U1 CNIC must be 13 digit long.

FR6.2 The system shall allow user to enter CNIC registered name.

FR6.3 The system shall display premium user fee.

FR6.4 User selects “submit” to become a premium user.

FR6.5 User can cancel the process.

**FR7 The system shall let the users log out.**

FR7.1When logout is selected, user session should expire.

FR7.2 User must be redirected to “Activity page” when logged out.

FR7.2.P1 User must be redirected in less than 3 seconds.

FR7.3 The system must display user’s previous searches on “Activity Page”.

**FR8. The system shall let admin add university in the database**

FR8.1 The system must let admin enter university name.

FR8.2 The system must let admin enter university’s location.

FR8.3 The system must let admin enter university’s HEC Ranking.

FR8.4 The system must let admin enter degree programs offered by university.

FR8.5 The system must let admin enter university’s year of establishment.

FR8.6 The system must let admin upload university’s photos.

FR8.6.1 Admin will select “upload photo”.

FR8.6.2 The system must open a wizard for admin.

FR8.6.3 Admin will double-click a photo to upload it.

**FR9 The system shall let the admin log out.**

FR9.1 When logout is selected, admin’s session should expire.

FR9.2 Admin must be redirected to “Home page” when logged out.

FR9.2.P1 Admin must be redirected in less than 3 seconds.

**FR10. The system shall let admin update university ranking.**

FR10.1 The system must allow admin to update university ranking if modified by HEC.

**FR11. The system shall let admin add test questions in database.**FR11.1 The system shall allow admin to choose subject.FR 11.2 The system shall allow admin to enter questions along with their answer options.FR11.3 Admin must select “save” to add questions to database.

**FR12. The system shall let admin delete test questions from database.**FR12.1 The system shall allow admin to choose subject.

FR12.2 The system shall allow admin to choose question that is being deleted.

FR12.3 Admin must select “delete” to delete question permanently.

**FR13. The system shall let admin update test questions in database.** FR13.1 The system shall allow admin to choose subject.

FR13.2 The system shall allow admin to choose question that is being modified.

FR13.3 Admin must select “update” to change question and save in database.

**FR14 The system shall let admin verify premium membership**

FR14.1 The system shall allow admin to approve premium membership if all credentials are correct.

## ASSUMPTIONS/CONSTRAINTS

There are no limitations on the database memory.

The payment system for tests is not required currently. The main focus is on availability of online tests.

## USABILITY REQUIREMENTS

U1. Proper contact information should be provided at the bottom of every page.

U2. From every page, the user should have access to go back to previous page.

U3. User should be given option to redirect to respected university’s homepage.

U4. Home page option should be available on top of every page.

U5. Every page will have a descriptive title on top.

U6. The icons will follow the standard format (e.g. log out on the extreme right) so the users will feel familiar with the site.

## SUPPORTABILITY REQUIREMENTS

### Configuration Management Tool

S1. The source code developed for the system shall be maintained in configuration management tool.

### Maintainability

S2. The source code of the website will be maintainable by documenting the stages.

## RELIABILITY REQUIREMENTS

### Securing Database

R1. Website must be protected against SQL Injections.

R2. Website must be protected against Cross Site Scripting.

### Data Transfer

R3. The system shall automatically log out all customers after a period of inactivity.

## INTERFACE REQUIREMENTS

The types of interfaces by the software system are; User Interface, Software Interface, Hardware Interface, and Communication Interface.

The protocol used shall be HTTP.

The Port number used will be 80.

### I1. User Interface

I1.U1 The user interface for the software shall be compatible with Google Chrome, Mozilla Firefox, Microsoft Edge and Internet Explorer.

I1.U2 The user interface shall be implemented using the Java JDK (Java Development Kit) and the MySQL tools.

### I2. Hardware Interface

I2.H1 As the system is an online system, hence all the equipment required to connect to the internet (router, LAN/WAN, wires) are the hardware interface.

### I3. Communication Interface

I3.C1 The system shall use the HTTP protocol for communication over the internet.

I3.C2 The system shall use TCP/IP for the intranet communication.

### I4. Software Interface

I4.S1.The system shall communicate with the database to store user information.

## ASSUMPTIONS / CONSTRAINTS

There are no memory requirements.

# COMPLIANCE REQUIREMENTS

### Licensing Requirements

They are not applicable.

### Legal, Copyright, and Other Notices

CP1. Edutative should display the disclaimers, copyright, word mark, trademark of the universities.

### Applicable Standards

CP2. It shall be as per the university’s standard.

## ASSUMPTIONS / CONSTRAINTS

There are no assumptions on the compliance requirements.

# References

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| [1] |  |