**CRITERIA B DESIGN**

Table of Contents

[INTERNAL STRUCTURE: 2](#_Toc65602498)

[Proposed Tables 2](#_Toc65602499)

[Proposed Scripts 3](#_Toc65602500)

[Functionality Diagram 5](#_Toc65602501)

[OVERALL STRUCTURE: 8](#_Toc65602502)

[Structural Overview: 8](#_Toc65602503)

[System Flow and Data Flow Diagrams: 9](#_Toc65602504)

[DESIGN OF WEBSITE: 15](#_Toc65602505)

[TEST PLAN: 23](#_Toc65602506)

\*The evidences for this documntation can be found in appendix 2

# **INTERNAL STRUCTURE:**

## **Proposed Tables**

***TABLE:* urine\_test\_register**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field No | Field Name | Field Type | Specifications | Description |
|  | slno | int(10) | not null,  primary key,  auto\_increment | Unique serial number of entries |
|  | name | varchar(30) | not null | Stores the name of patient |
|  | grade | varchar(2) | not null | Varchar because staff have a grade of ‘NA’ |
|  | age | int(2) | not null | Age of patient |
|  | gender | char(1) | not null | Gender |
|  | testresult | char(1) | not null | Sickness |
|  | entryDate | date | not null | Stores date when the entry was made |
|  | entryTime | time | not null | Stores the time the entry was made |

***TABLE:* opd\_register**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field No | Field Name | Field Type | Specifications | Description |
|  | slno | int(10) | not null,  primary key, auto\_increment | Unique serial number of entries |
|  | name | varchar(30) | not null | Stores the name of patient |
|  | grade | varchar(2) | not null | varchar because staff have a grade of ‘NA’ |
|  | age | int(2) | not null | Age of patient |
|  | gender | char(1) | not null | Gender |
|  | sickness | varchar(40) | not null | Sickness |
|  | medicine | varchar(20) | not null | Medicine given to patient |
|  | medq | int(5) | not null | Quantity of medicine |
|  | entryDate | date | not null | stores date when the entry was made |
|  | entryTime | time | not null | Stores the time the entry was made |

***TABLE:* user**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field No | Field Name | Field Type |  | Description |
|  | username | varchar(30) | not null,  primary key, auto\_increment | Unique serial number of entries |
|  | password | varchar(100) | not null | stores the encrypted password |

## **Proposed Scripts**

NOTE: To make the diagrams, and tables cleaner I am using the following abbreviations:

UT= Urine test, TB = table, RES= Result.

|  |  |  |
| --- | --- | --- |
| Script No | Purpose of script | Called by |
|  | Form for getting username and password input from user. Post the username and password to login Validation script. Upon redirection from LOGIN VALIDATION displays relevant error message. | LOGIN page |
|  | Validated user then if successful runs autodelete query and takes to home page otherwise redirects to log in page. | LOGIN VALIDATION script |
|  | Change username and password form. Display error messages when redirected to this page due to error. | CHANGE page |
|  | Validate user. If user is valid update database with new username and password. Redirect to change if error occurred otherwise send to login page. | CHANGE VALIDATION script |
|  | Displaying medicine reports and number of patients visited in each category (urine test and OPD) of that date. Displays message when autodelete is successful after log in is successful. | HOME page |
|  | Displaying Home page of any date | HOME DATE page |
|  | Generate PDF of Home page and Home date page | REPORT PDF page |
|  | Fill and submit form with details of urine test | UT FORM page |
|  | Display urine test table | UT TB page |
|  | Form to edit a urine test table entry | UT TB EDIT FORM page |
|  | Querying and updating urine test table | UT TB EDIT QUERY script |
|  | Run delete query for a urine test entry | UT TB DELETE script |
|  | Generate PDF of urine test table | UT TB PDF page |
|  | Prepare search query for searching urine test table | SEARCH UT page |
|  | Display the urine test search results | SEARCH UT RES page |
|  | Generate PDF of urine test search results | SEARCH UT RES PDF page |
|  | Fill and submit form with details of OPD | OPD FORM page |
|  | Display OPD table | OPD TB page |
|  | Form to edit an OPD table entry | OPD TB EDIT FORM page |
|  | Querying and updating OPD table | OPD TB EDIT QUERY script |
|  | Run delete query for an OPD entry | OPD TB DELETE page |
|  | Generate PDF of OPD table | OPD TB PDF page |
|  | Prepare search query for searching OPD table | SEARCH OPD page |
|  | Display the OPD search results | SEARCH OPD RES page |
|  | Generate PDF of OPD search results | SEARCH OPD RES PDF page |
|  | Logs the user out | LOG OUT script |

## **Functionality Diagram**

The diagrams below show the basic functions of each page

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Note that the OPD FORM, OPD TB, SEARCH OPD TB, and the OPD SEARCH RES, OPD TB EDIT have the same functionality as UT FORM, UT TB, SEARCH URINE TEST TABLE, UT SEARCH RES, UT TB EDIT respectively.

## **Proposed Libraries**

In order to achieve some of the functionality and also make the website look aesthetic, I will be making use of libraries.

|  |  |
| --- | --- |
| Library Name | Description |
| TCPDF | This library is used to generate PDF documents |
| Font Awesome | This library is used for rendering icons onto the screen |

# **OVERALL STRUCTURE:**

## **Structural Overview:**

|  |
| --- |
|  |
|  |

## 

## **System Flow and Data Flow Diagrams:**

|  |
| --- |
| LOG IN |
|  |

|  |
| --- |
| LOG IN VALIDATION |
|  |

|  |
| --- |
| LOG OUT |
|  |

|  |
| --- |
| CHANGE VALIDATION |
|  |

|  |
| --- |
| CHANGE |
|  |

|  |
| --- |
| HOME |
|  |

|  |
| --- |
| HOME DATE |
|  |

|  |
| --- |
| REPORT PDF |
|  |
| UT FORM |
|  |
| UT TB |
|  |

|  |
| --- |
| UT TB EDIT FORM |
|  |
| UT TB EDIT QUERY |
|  |
| UT TB DELETE |
|  |

|  |
| --- |
| SEARCH UT |
|  |
| SEARCH UT RES |
|  |

|  |
| --- |
| SEARCH UT RES PDF |
|  |

The OPD part of the solutions also follow the same system flow and data flow diagrams. Exceptions being that the database is now opd\_register instead of urine\_test\_register

# **DESIGN OF WEBSITE:**

|  |
| --- |
| LOG IN Page |
|  |

|  |
| --- |
| CHANGE Page |
|  |

|  |
| --- |
| HOME Page |
|  |

|  |
| --- |
| HOME DATE Page |
|  |

|  |
| --- |
| UT Form Page |
|  |

|  |
| --- |
| UT TB Page |
|  |

|  |
| --- |
| UT TB EDIT Page |
|  |

|  |
| --- |
| SEARCH UT TB Page |
|  |

|  |
| --- |
| UT SEARCH RES Page |
|  |

|  |
| --- |
| OPD Form Page |
|  |

|  |
| --- |
| OPD TB Page |
|  |

|  |
| --- |
| OPD TB EDIT Page |
|  |

|  |
| --- |
| SEARCH OPD TB Page |
|  |

|  |
| --- |
| OPD SEARCH RES Page |
|  |

# **TEST PLAN:**

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Test Type | Nature of Test | Example |
|  | Log in and Log out | Valid username and/or password | when an invalid username and/or password is entered the user is taken to the login page and a popup saying invalid username and password |
|  | Change Password and Username | Database operations  (updating) | if the username was changed from “abcd” to “Doctor”. Then using “abcd” and valid password would not log the user in |
|  | Generate PDF | Database operations and TCPDF library | Upon clicking the pdf button in OPD table, a PDF of the OPD table with all its entries is generated. |
|  | Search | Database query and retrieval | A search query of “FeyNMan” would return “Richard Feynman” |
|  | Automatic Deletion | Conditional statements and database operations (deletion) | The database will not contain records older than two years. |
|  | Edit and Delete | Database operations  (updating and deleting) | If the name “Rajneesh Mishra” is changed to “Rajneesh” in OPD table. Then the OPD table updates and now shows “Rajneesh” instead of “Rajneesh Mishra”  If now entry corresponding to “Rajneesh” is deleted, then the OPD table updates and no longer shows the entry |
|  | View Tables | Database retrieval and display | The urine test tables and OPD tables display the |
|  | Medicine Reports | Database operations | The total number of medicines used is shown. When new entries are made for OPD table the number of medicine updates. |
|  | Fill Forms | Database operations (inserting) | When a new entry is made by submitting the form. The entry is register in the database. |
|  | Dropbox | Functionality test | In the OPD form, when the user clicks on the textbox for sickness and medicine a drop box containing common sickness and medicine shows up. |
|  | Popup messages | Functionality test | When the user submits forms, a popup shows up saying “SUCCESSFUL”  When user wants to delete an entry, a popup shows up saying, “Are you sure you want to delete?” |
|  | Easy to use | Accessibility and Usability | This is subjective and can only be decided by client hence no examples are provided. |

In order to rigorously test the website and see how it performs for large datasets, I have made use of random number generator and coded a random dataset generator (Appendix 2, Section B6). This helps in testing and debugging while also revealing potential flaws in the solution.