COVID-19 TEST APP

18/ENG04/070   ELECT-ELECT

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DEVELOPMENT OF AN APP TO TEST FOR INFECTION BY CORONA VIRUS AND TO RATE THE SEVERITY OF INFECTION USING THE SOFTWARE LIFECYCLE AS A GUIDE.

SOFTWARE DEVELOPMENT LIFE CYCLE

- Planning
- Requirement analysis
- Design
- Implementation and coding
- Testing
- Deployment
- Maintenance

PLANING PHASE

Defining the application; Application requirements

- User registration
- Login
- Logout
- Dashboard landing page. Which would include these buttons;
    1. Detect infection
    2. Display infection status & Rate degree of infection
- Database (where all user info would be stored)

REQUIREMENT ANALYSIS PHASE

Defining the requirements;

- USER REGISTRATION
    1. User's name input field
    2. Password field
    3. Address field
    4. Medical history field
    5. Gender field
    6. Submit button
    7. Save user in Database
- LOGIN
    1. User's name input field
    2. Password field
    3. Submit button
    4. Read user from database
    5. Log user into the system
- LOGOUT
    1. Logout button

2. Clear user session out of browser to prevent account theft
- DASHBOARD
  1. Main homepage;
     - ➢ "Check Status" button which would lead to a screen with a series of yes/no questions (to be answered by clicking a check box) based on the symptoms of the corona virus to determine if the user is infected or not.
     - ➢ "Show result" button which would display the status of the user (INFECTED/NOT INFECTED) based on the answers (s)he provided to the questions. It would also display the severity of the infection determined by the same process.
     - ➢ "Seek help" button which would display the hotlines of the health company (this would appear only if the result is positive i.e. infected).
     - ➢ "Exit" button which would clear the user's session from the browser.
  2. Email addresses would be displayed for feedback from users.
  3. New users should be redirected here.
  4. Existing users should be redirected here after login.
- DATABASE
  All users' info would be stored here; Login info, address medical history, and test result.

DESIGN PHASE

This includes:

1. User Interface Layout: A responsive web design, Mobile support.
2. Color Schemes
3. Programming language; Visual Basic is used
4. Framework; .NET Framework
5. System server design
6. Database base relationships i.e. Link user Table to the Result Table
7. Architecture of the application
8. Mobile Aspects; i.e. Android, IPhone, Windows Phones
9. Supported browsers etc.

IMPLEMENTATION AND CODIND PHASE

Physical hardware for the servers would be setup; coding would begin, the user interface design planning would continue and at the same time, the application requirements would be analyzed and test cases would be built for test plans. Even at this stage testing begins but not intensively as testers would start to imagine the usability of the application and try to see how it all flows and in the process, they could discover things that don't make sense and help to redesign the fundamental flaws in the early stages of the application. (Design phase)

TESTING PHASE

This is one of the most important phases in the development of the app as it entails finding as many bugs as possible and fixing them. At this phase coding must have been completed and servers already setup.

Now the test cases that have been created can be executed, and we can now validate that all the app requirements have been met and that all functionality is working as expected.

The bugs found are reported into a bug tracking system which leads back to coding for correction of the bugs. This is called a BUG LIFECYCLE.

DEPLOYMENT PHASE

At this stage, new hardware would be installed to have everything ready for Mass Production. This includes creating the URL links, and setting up the databases for real users etc. When all of this is complete, the application would go live to real users.

MAINTENANCE (the final stage)

After the application is launched, (successful) with many users logging into the system there would be a need for more servers, more powerful computers etc. Also, there would be bugs found in production- users would email with their complaints which would be looked into and fixed and deployment is done again.

ALGORITHM

STEP1: Start

STEP2: Display "Input Name, Password, Home Address, Medical Info, Gender"

STEP3: Enter Name, Password, Home Address, Medical Info, Gender

STEP4: Read Name, Password, Home Address, Medical Info, Gender

STEP5: Store Name, Password, Home Address, Medical Info, Gender in Database

STEP6: Name == "You"

STEP6: Display "first question"

STEP7: Enter YES/NO

STEP8: Display "next question"

STEP9: Enter YES/NO

   "

   "

   "

STEP#: Display "last question"

STEP#+1: Enter YES/NO

STEP#+2: IF yes is entered to all the questions, Print ("you are not infected")

ELSE, Print ("you are infected. Please contact the nearest isolation center")

STEP#+3: Store results in database

STEP#+4: Stop

FLOWCHART

```
                          ( START )

           ┌──────────────────────────────────┐
          /  Enter Name, Password, Home        /
         /   Address, Medical Info, Gender    /
        └──────────────────────────────────┘

           ┌──────────────────────────────────┐
          /  Read Name, Password, Home         /
         /   Address, Medical Info, Gender    /
        └──────────────────────────────────┘

        ┌──────────────────────────────────────┐
        │  Store Name, Password, Home Address,  │
        │  Medical Info, Gender in Database     │
        └──────────────────────────────────────┘

           ┌──────────────────────────────────┐
          /       Name == "You"               /
         /                                   /
        └──────────────────────────────────┘
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Display "first question"

Enter YES/NO

IF all answers are YES

Print "you are not infected"

Print ""you are infected.

Please contact the nearest Isolation center"

STOP