PROJECT

Module

Website Development

Module Code

IT3040FP

Duration

45 hours

Title:

Create a web application

Tools, Equipment and Materials:

1 Development computer
2 Application requirements specification

Instructions:

1 You are tasked to create a web application to implement a project specified in the application requirements specification in Annex A.

2 This web application consists of web components and a database that work together to fulfil all the functional requirements specified in the application requirements specification. You tasks include:

2.1 Create appropriate UI components for users to input information.

2.2 Create client-side scripts to perform client-side validations.

2.3 Create server-side scripts to perform server-side validations.

2.4 Create a database to store the data required and data generated by the web components.

2.5 Create SQL queries to implement database operations.

2.6 Deploy the web components to a web server and the database to a database server.

2.7 Configure the web application so that the web components can connect to the database server.

2.8 Implement an appropriate version control to keep track of the changes and maintain versions.

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Annex A

Application Requirements Specification

1 Introduction

Police Radio Division is responsible for the handling of all emergence call for police service and dispatching of police patrol to scenes of incident. They intend to automate the operation through a web-based system coded name Police Emergency Service System or PESS in short.

This requirements specification document describes the functions and requirements specified for the PESS. This system is needed to ensure that the speedy handling of emergency calls and dispatching of patrol car to scenes of incident. In order to make this possible, this system aims to reduce the amount of paperwork that must be filed and keep track of the status of patrol cars

2 System Description

The PESS shall assist the operators in quickly and efficiently dispatching patrol cars to in respond to an emergency call. The system must allow operators to input the emergency call information. The system must assist the operator in determining the uniqueness of calls. The system must allow the operator to view and update the status of each patrol car. All emergency call information, patrol cars dispatches, and patrol car status shall be logged and stored in a central computer database.

The PESS will not replace the way in which operators contact patrol cars and patrol cars contact operators, through hand-held communication devices. The system will not take into account congested roads and areas of heavy traffic. The system will not determine if an emergency call is a duplicate of a currently pending one; however, the system must provide the information to assist the operator in making this decision. The system will not decide what patrol car to dispatch, this remains the operators' discretion.

3 User Characteristics

There are three groups of user which will use the system. The first group of user is the System Administrator. The System Administrators are concerned with data integrity and system stability and reliability. This group has the highest computer skill set and is capable of supporting a computer network. Their interaction with the system is very limited and is

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only necessary for backing up and archiving data from the database or to provide basic computer support to the other users of the system.

The management team makes up the second group. They interact with the system to view reports and statistics about the quality of service their employees are providing. They have basic computer experience and are familiar with work processors, e-mail clients and other management reporting systems. They spend most of the time ensuring that incoming calls are answered quickly and that patrol cars are allocated efficiently.

The third group is the operators. They are proficient in typing and have intermediate computer knowledge. They are used to working quickly and efficiently and are capable of working under highly stressful situations. They are the only group which deals directly with the public over the phone on a daily basis. This group communicates with the public to determine the type of assistance they require, and then they deploy a patrol car if this service is necessary.

4 General Constraints

Software:

- System will be built as a database-driven web application programmed in PHP.
- Internet browser is needed to access the system.

Hardware:

- Each operator shall need a computer installed with a web browser.
- The web application shall be deployed on Apache 2 server.
- The database must be stored on MySQL.
- All computers must be networked together so that all will have access to the web application and database.

5 Assumptions and Dependencies

- It is assumed that the users have adequate skills in using computers and computer software.
- It is also assumed that the division have a sufficient number of computers, at least one per operator.
- The system is dependent on Apache, PHP, and MySQL to operate.

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6 Requirements Master Task List

This section contains the listing of the master tasks identified for the PESS.

Task No	Task Name	Task Description
1	Input Call by Operator	The system shall allow the operator to input information pertaining to an emergency call.
2	Dispatch Patrol Cars	The system shall display a list of available patrol cars for the operator to select and dispatch.
3	Update Patrol Car Status	The system shall allow the operator to update the status of each patrol car in the database.

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7 Functional Requirements

7.1 Task No 1: Input Call by Operator

7.1.1 Description

This function allows the operator who receives an incoming emergency call to input information about the call, which is the beginning process of dispatching a patrol car.

7.1.2 Input

The operator must enter the following information in this page:

- Caller Name
- Contact Number
- Location of Incident
- Type of Incident
- Description of Incident

7.1.3 Display

- The first field is “Caller Name”. The data type is string of characters. This is not a required field.

- The “Contact Number” of the caller is the next field. This phone number should consist of 8 numeric numbers. This is a required field.

- The “Location of Incident” is a required field that must be input by the operator. In this text field, the operator will input the address of the incident. If the exact address is not known, the operator will input an approximate address of where the incident is located. (In the “Description of Incident” text field, the operator may input a more descriptive explanation of where the incident has occurred.)

- The “Type of Incident” is the fourth field in which the operator shall input information. This is a drop down box where the operator shall select one from a list of predefined incident types. This is a required field.

- The “Description of Incident” is a text field where the operator shall input a more descriptive explanation of the specific event. This is a required field.

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- A button called “Process Call” for passing the information to “Dispatch Patrol Cars” function for further processing must be included in this page.

7.1.4 System Processing

Once the operator has input information about each incident in the system’s user interface, and click the process button, the system will validate that all required fields are entered, and the format of phone number is correct. It will prompt the operator to complete or correct any incorrect entries. Otherwise, the information input in this page will be transfer to “Determine Uniqueness of Call” page for further processing.

7.2 Task No 2: Dispatch Patrol Cars

7.2.1 Description

This function retrieves and displays all available patrol cars for the operator to choose to dispatch. The operator will be at her discretion to select the appropriate number of patrol cars to dispatch to the accident.

7.2.2 Input

A list of patrol cars available for dispatch.

7.2.3 Display

A list of patrol cars available for dispatch are displayed along with a checkbox for each patrol car so the operator can select the patrol cars for dispatch. A “Dispatch” button is provided to complete the dispatching task.

7.2.4 System Processing

Upon the click of the “Dispatch” button, the system will update the status of those patrol cars that are dispatched for the current incident, and the status of the current incident in the database.

7.2.5 Data Handling

The statuses of those patrol cars selected for dispatched for the current incident, and the status of the current incident are updated in the database.

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7.3 Task No 3: Update Patrol Car Status

7.3.1 Description

The operator to update the status of each patrol car.

7.3.2 Input

The operator will retrieve a patrol car information by entering that patrol car number into a search box.

7.3.3 Display

A search box for the operator to enter a patrol car number and a search button called “Search” for the operator to start the search.

If found, the located patrol car will be displayed with a status drop down box where the operator can select a status to update. An “Update” button is provided to complete the update.

7.3.4 System Processing

Upon the click of the “Search” button, the system will retrieve from the database and display the patrol car that matches the car number.

Upon the click of the “Update” button, the system will update the status of the patrol car in the database.

7.3.5 Data Handling

1. The patrol car that matches the search is retrieved from the database and the updated status of the patrol car is updated in the database.

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8 Interface Requirements

This section shall describe the interface requirements for the patrol car dispatch system. They specify the way the user shall interact with the system as well as define the hardware interfaces and communication interfaces required by the software to store and retrieve data.

8.1 User Interfaces

There are a total of three user interfaces. They are accessed through a browser

The first interface named “Log Calls” shall have all the fields necessary for an operator to input information about a new incidents or call and a submit button for sending the information for further processing. Once the information is logged and the submit button is pressed, the screen will advance to the “Dispatch Patrol Cars” interface.

In the “Dispatch Patrol Cars” interface, the system shall display a list of available patrol cars for the operator to choose to dispatch. There shall be a check box for each patrol car listed so the operator will select the patrol car to associate with this incident. The operator will press a button to complete the dispatching task. The system will record the time of dispatch in the database.

Once a patrol car has reached scene of incident, the operator will be informed though hand held radio. She will then go into the “Update Patrol Car Status” screen to update the status of the patrol car. The system will then calculate and log the actual time taken in the database.

When a patrol car has completed its mission, the operator will be informed though hand held radio. The operator will then go into the “Update Patrol Car Status” screen to update the status of the patrol car to available.

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8.2 Hardware Interfaces

The system is developed as three-tier architecture as follows:

- Web Client: Displaying user interfaces, sending user request and displaying responses from web server.
- Web Server: Accepting requests from web clients, interfacing with database, processing business logics, formulating web pages, and returning the results to web clients.
- Database Server: Storing data, interfacing with web server, and performing SQL operations.

8.3 Software Interfaces

Any browsers will be used as the web client, PHP as the server-side scripting, Apache 2 as the web server, and MySQL as the database server.

8.4 Communication Interfaces

All data transferred between the servers and the individual computers shall use the TCP/IP networking protocol over an Ethernet connection. This network is closed and is not accessible from the Internet. This ensures unauthorized access is prohibited.

THE END