AuCEM

Unit 4 Outcome 1 and SRS

AuCEM is an organisation which provides emergency communications in times of disaster. The Victorian branch has its HQ in Milawa. The have a small P2P network consisting of 3 PCs, one of which is linked to the Internet.

During times of Victorian civil emergency, the Red Cross and the CFA often call on AuCEM for help with communications. They have all the records of operators and their equipment listed in paper files. This has resulted in a waste of time to search through all the files to find specific information. The Coordinator has little idea of who is available, what equipment they have and who has had training recently.

AuCEM requests an application which can run on a small smart device. It must, among other things, allow the Data Operator to collect information about individual ham radio operators; to find someone, say in the Mallee, who can operate a VHF radio; and to search through lists of missing people.

The Red Cross will compile a list of people who are staying in emergency shelters. They request a search facility for family members.

**Scope for AMRAD Version 1.0**

AMRAD performs the following operations:

Gathers details of radio operators and adds the details to a file.

Locates operators with specialist skills from areas of Victoria.

Searches for operators

Searches for names of missing persons.

It is intended to be used on a website or as an iPad app.

AMRAD will use only 3 areas of Victoria for this version of the software.

AMRAD will define only 3 types of specialist skills.

AMRAD will allow radio operators to enter their contact details which will be saved as an external file. A search for the callsign can be performed.

A missing persons list, which is already validated, will be supplied and the software will allow a search to be performed. If the name is on the list, a message saying that will be displayed to the screen. This search should cater for hundreds of names.

The missing persons list will allow a search only for the surname of the missing person. Further functionality will be added at a later date when the Red Cross has its database running.

**Operating Environment**

The device will have a browser and a PHP engine to perform the calculation. The mobile device will need small storage capability at the moment.

**Functional Requirements**

|  |  |
| --- | --- |
| FR01 | A 2D array must be designed so the data can be loaded into RAM and used. |
| FR02 | Location of radio operator and the specialist skills can be entered and the surname of the operator is output. |
| FR03 | A ‘back’ button will allow the user to return to the main menu. |
| FR04 | The output must clearly state: Search results for <area> of Victoria the specialist with knowledge of <specialty>: contact operator <operator> |
| FR05 | If there is missing input in either textbox, then a message will inform the user of this. |
| FR06 | After validation for existence, the user will be returned to the main form. |
| FR07 | A linear search for operator details will be performed when the callsign is the search string. It will output the surname, given name, location, and specialty. |
| FR08 | If the callsign is found in the list, the output will state: <callsign> belongs to <given name> <surname> who is from the <region of Victoria> and whose specialty is <specialty>. |
| FR09 | If the callsign is not in the list, this message will be displayed: “This callsign is not in the list.” |
| FR10 | The user can search for missing persons. |
| FR11 | When the user searches for the missing person, the textfile is loaded into RAM in an appropriate data structure and a binary search is performed. |
| FR12 | The output from the binary search must be in this form: ‘This family with surname <surname> is living in one of our shelters.’ OR ‘<surname> is not listed in any of our shelters.’ |
| FR13 | A ‘back’ button will allow the user to return to the main menu following the binary search. |
| FR14 | A main menu is required in HTML |

**Non-functional requirements**

|  |  |
| --- | --- |
| NFR01 | All instructions must be clear and not verbose. |
| NFR02 | No images may be used. |
| NFR03 | Only websafe colours are allowed. |
| NFR04 | Colour contrast for hovers on links must be obvious. |
| NFR05 | Dropdown lists for the areas of Victoria must not be used in the HTML. |

**Constraints**

|  |
| --- |
| PHP is the required programming language. Server software with a PHP engine and a browser must be available.  AMRAD is the property of AuCEM and they hold the licence for it. |

**Task 1**

Review the SRS to determine the scope, constraints and requirements for the software application.

Design

Write the algorithms in pseudocode. The algorithms must be appropriately documented.

Prepare a data dictionary using the template below.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| item | length | datatype | validation rules | format | where used? | description | example |

Development

Thorough testing of all processes and conditions must be performed. A comprehensive range of test data is expected. The results must be presented in a test table.

Clear and appropriate internal documentation is required.

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

Sample data 1

|  |  |  |  |
| --- | --- | --- | --- |
|  | Western District | Mallee | Metro |
| UHF | Iaquinto | Pemberton | Burns |
| VHF | Squires | Mendhi | Durkin |
| Antennas | Steel | Riportella | Zarkos |

Sample data 2:

Callsign: VK3LQQ  
Surname: Riportella

Given name: Vern

Area of Victoria: Mallee

Specialty: Antennas

Sample data 3 for the names of families in shelters:

Rock, Stone, Gneiss, Canyon, Gully, Arroyo, Gulch, Bridges