C# Quiz (20%) in labs week starting 9/4/2018

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C# Assignment 2 (20%)

Issued March 20/3/2018

You must demonstrate your program in lab class during week of 30/4/2017. You will be asked questions about the code.

Plagerism will be detected

Upload to moodle link on demo day

**Marks will be awarded for**

* Correctness
* Following our naming standards
* Inclusion of banner comment/inline comments
* Programming Style
* Best use of programming statements
* Program structure/ Design – methods
* Robustness

Problem description

The sorted French Navy vessel master file (FVMF.txt) contains details of all the sea going vessels in the French fleet, it is sorted on ascending vessel type within ascending location code. The following is the record description. I’ve put a sample file on moodle

|  |  |
| --- | --- |
| FIELD | TYPE |
| Vessel Name | String |
| Vessel type | int |
| Tonnage | Int |
| Crew | Int |
| Location Code | Int |

A menu driven program is required to allow the user create reports and/or search the file..

**Menu Format**

**Menu**

1. **Vessel Report**
2. **Location Analysis Report**
3. **Search for a Vessel**
4. **Exit**

**Enter Choice :**

The user shall be able to create report and search as often as they like. The program will terminate when exit is selected.

**Vessel Report**

The program is required to produce a report detailing the major vessels (vessels of tonnage 3,500 or greater and all submarines) in each of the following locations.

The pacific (location code 1)

The Atlantic (location code 2)

The Mediterranean (location code 3)

The Indian Ocean(location code 4)

The Other Seas (location code 5)

Your report will show the Vessel location, Vessel name, the crew size, the tonnage and the monthly running cost (crew size \* cost per crew member). The cost per crew member is obtained from the following table where the values indicate the running cost in euros for one month for one crew member.

|  |  |
| --- | --- |
| Vessel Type Code | Cost per crew member |
| 1 | 2610 |
| 2 | 2350 |
| 3 | 2050 |
| 4 | 999 |
| 5 | 2550 |
| 6 | 2510 |

The detail line for each vessel must also show the location name and the vessel function. The vessel function is obtained from the following table:

|  |  |
| --- | --- |
| Vessel Type Code | Vessel Function |
| 1 | Aircraft carrier |
| 2 | Cruiser/Battleship |
| 3 | Destroyer |
| 4 | Frigate |
| 5 | Nuclear Submarine |
| 6 | Minelayer/Sweeper |

Sample Report

French Naval Vessel Inventory Report

Location Function Vessel Name Tonnage Crew Mthly Cost

XXXXXXXX XXXXXXXX XXXXXXXXX X,XXX X,XXX XXX,XXX

XXXXXXXX XXXXXXXX XXXXXXXXX X,XXX X,XXX XXX,XXX

XXXXXXXX XXXXXXXX XXXXXXXXX X,XXX X,XXX XXX,XXX

XXXXXXXX XXXXXXXX XXXXXXXXX X,XXX X,XXX XXX,XXX

GrandTotals XX,XXX X,XXX XXX,XXX

Bonus marks if you print a location grandtotal (e.g the total cost of the pacific fleet) for each location when a location changes

**Location Analysis Report**

This report will detail the number of vessels that are in each location

Location Vessel Count

The pacific x

The Atlantic x

The Mediterranean x

The Indian Ocean x

The Other Seas +

Totals x,xxx

Bonus marks if you print a count of each vessel type in each each location

**Search**

Allow the user enter a vessel name, the program will then search the file, and display the vessel location. If the vessel is not found display a message stating “No match found”.

Example dialogue

Enter Vessel Name: Rabecca

Location : The Atlantic