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Abstract

Basic exercises on basic programming constructs

C# Basic Exercises

Enumerations, loops etc.

## Write a C# console application to convert HEX color code to RGB and vice versa.

Create a console application project.

The console application should prompt for mode of input:

Enter Mode of input:

1. HEX Code
2. RGB Code

Based on the choice made above, the program should prompt for the codes.

For Option 1:

Enter HEX Code:

For Option 2:

Enter Red component:

Enter Green component:

Enter Blue component:

Once the input has been accepted, the console should prompt the following menu. This menu should appear each time the result is displayed, until the user selects the Exit option. If the user chooses "Try another color", the console application must ask for mode of input.

Select one of the following:

1. Get HEX code (Response Format : #RRGGBB)
2. Get RGB code (Response Format : rgb(rr,gg,bb))
3. Get Red component (Response Format : rr)
4. Get Blue component (Response Format : gg)
5. Get Green component (Response Format : bb)
6. Get color's common name
7. Try another color
8. Exit

Based on the option selected, the program must provide appropriate answers.

For Option 6, use the following table for getting color's common name. If any other color is entered, the program must answer "Uncommon color code."

|  |  |
| --- | --- |
| **Color** | **HEX code** |
| Crimson | #DC143C |
| Red | #FF0000 |
| Gold | #FFD700 |
| Orange | #FFA500 |
| Yellow | #FFFF00 |
| Dark Olive Green | #556B2F |
| Green | #00FF00 |
| Teal | #008080 |
| Light Blue | #ADD8E6 |
| Blue | #0000FF |
| Royal Blue | #4169E1 |
| Black | #000000 |
| White | #FFFFFF |

You are required to use a class "Color" which has the following properties:

1. HexCode
2. RgbCode
3. R
4. G
5. B

The class should expose the following function:

1. GetCommonName

You are required to use an enumeration to store the color’s common name.

**Expectations from student:**

* Efficient management of control flow for the menu cycle.
* Efficient branching mechanism to handle requests from menu.
* Usage of methods to handle requests.
* Use switch case on enumerations to get color's common name.
* Conversion of decimal code to Hexadecimal code and vice versa.
* Usage of string operations to derive the RGB code from the hex code.
* Managing scope of fields, properties, functions.
* Using constructor overloading.
* Use “Pass by reference” to calculate R, G, B value.

## While, Do while (acronyms)

Write a C# console application to get acronym of a given input.

Input/Output Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| What you see is what you get! | WYSIWYG |
| For your information | FYI |
| Single point of contact | SPOC |
| Search Engine Optimization | SEO |

Create a console application project.

Accept a string as input.

Find the acronym of the string and display it as output.

Any special character can be ignored for the output.

**Expectations from student:**

* Usage of string operations to find the result.
* Student should demonstrate the same program using while, do-while, for, foreach loops.

## Journal Maintence

### Try/catch/finally - ??

### Assemblies - ??

### Arrays - ??

### Static class and static methods - ??

Create a console application program.

Add the following configuration in the app.config file.

* 1. HOME : the Home directory for the application, where the necessary files are stored.
  2. EXTENSION: the accepted extension.

Display the given menu and support the given operations

#### Menu :

Select an option:

1. Add new file to collection
2. Delete a given file from collection
3. Count of words in a file
4. Count of words in all files

If the given file is not found in the HOME directory, the program must throw an error “Error : cannot find file.”

If the given file does not have the accepted extension, throw an error “Error: invalid file extension.”

Once a valid file has been provided, read the contents of the file and store in an array.

If user requests to delete a file from collection, accept the name of the file in the array as input and delete the entry from the array.

Use the following classes for the program

ConfigMgr

Home

Ext

CollectionMgr

FilesCollection[]

AddFile(filename)

RemoveFile(filename)

GetTotalWordsInAFile(filename)

GetTotalWordsInAllFiles()

File

FullFilePath

GetWordCountInFile()

**Expectations from student:**

* Usage of file operations
* Usage of exception handling
* Usage of app.config and retrieval of values from ConfigurationManager
* Usage of arrays
* Usage of simple operations on arrays (count, etc)
* Use of static variables, methods