**Assignment N0. 02**

**Submission Due Date: 26/November/2023**

**Marks 05**

**Instructions (Any):** Submit soft copy on LMS

**Question#1 CLO3, PLO4, BTL3**

Apply programming concepts to solve this simple computing problem C++ programming language. Assume a company hired you to develop an automated system to store information of cars. Your client is Toyota Motors and you are requested to make a system which can store cars information such as its Model, Color, horsepower and demand. The average horsepower of a new car will usually be between 180 and 200. Your system must have the following functionalities

1. Store car’s information in a 2D array (global variable) through a function named as

**Void store\_info(string model, string color, string horsepower, string highDemand)**

|  |  |  |  |
| --- | --- | --- | --- |
| Model | Color | Horsepower | High demand |
| Avalon | white | 200 | Yes |
| Camry | Black | 180 | No |
| Corolla | Maroon | 195 | Yes |
| Yaris | brown | 185 | No |

1. Write another method with the same name as mentioned above (method overloading). This overloaded method can only store car model, color and its demand in a 2D array (global variable).

**Void store\_info(string model, string color,string highDemand)**

|  |  |  |
| --- | --- | --- |
| Model | Color | High demand |
| Avalon | white | Yes |
| Camry | Black | No |
| Corolla | Maroon | Yes |
| Yaris | brown | No |

1. Write a method to print information of cars which have been stored by above methods

**Void print()**

This method will ask from user that which cars info he/she wants to print

* Cars with horsepower (data stored as a result of execution of first function)
* Cars without horse power (data stored as a result of execution of second function)

1. There must be two updated method with 2 different 2D arrays. First search your desired car to update through its model number than update its complete information

**Update\_car((string updatedmodel, string updatedcolor, string updatedhorsepower, string highDemand)**

**Update\_car((string updatedmodel, string updatedcolor, string highDemand)**

1. Calculate prices of cars in a separate function by using below mentioned criteria

* There are some assumptions for the price calculation
  + - All models are released in 2023
    - The basic price of each car is 20 lakh
    - If one want urgent issuance of car he/she have to pay 1 lakh extra for urgent service, zero if normal issuance required
* Add cost of the following factors to your total price

|  |  |
| --- | --- |
| **Colors** | **Additional price** |
| Black color | 70k |
| White color | 50k |
| Brown color | 60k |
| Maroon color | 65k |
| All other colors | 0 (No effect on total price) |

|  |  |
| --- | --- |
| **Horsepower`** | **Additional price due to horse power** |
| >=190 | 2lakh |
| >=180 &&<190 | 1 lakh |

|  |  |
| --- | --- |
| **Demand** | **Additional price due to demand** |
| Yes | 1 lakh |
| No | 0 (zero) |

**For cars with horsepower information**

Total price = basic\_price + demand price + additional price of color + price for urgent issuance of car + horse power price

**For cars without horsepower information**

Total price = basic\_price + demand price + additional price of color + price for urgent issuance of car

**int calculate\_price()**

**{**

**//implement formulas here**

**Return total price;**

**}**

**Note:** your program must be menu driven program. Main method will take input in variable and pass to methods. Methods will store variable’s values to 2d arrays.