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Object Oriented Programming

Lab 2

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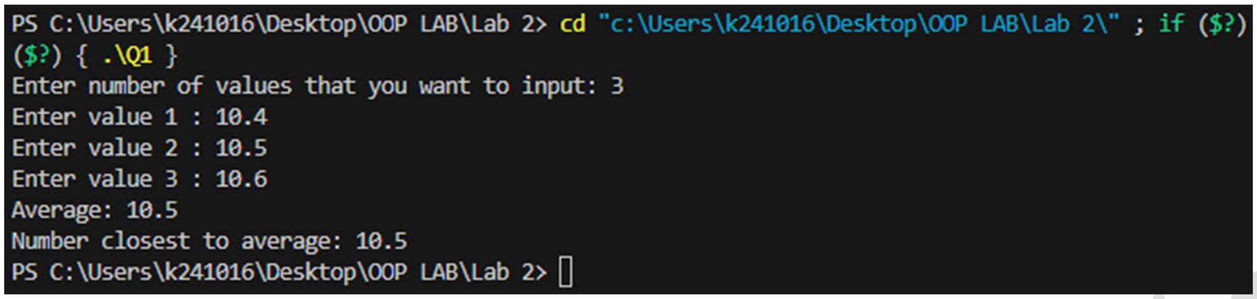
FAST NUCES

QUESTION 01

SOURCE CODE:

```cpp
/*
Write a C++ program that reads a group of n numbers from the user and stores them in a dynamically
allocated array of type float. Then, the program should:
- Calculate the average of the numbers.
- Find the number closest to the average.
- Print the average and the number closest to it.
- Use pointer notation wherever possible.
*/

#include <iostream>
using namespace std;

float number(float *arr, float avg, int size){
    float num, diff=999999.9;
    for (int i=0; i<size; i++){
        float diff2=arr[i]-avg;
        if (diff2<0) diff2*=-1;
        if (diff2<diff) {
            num=arr[i]; diff=diff2;
        }
    }
    return num;
}

int main(){
    int size=0;
    cout<<"Enter number of values that you want to input: ";
    cin>>size;
    float *userInput=new float[size], sum=0;
    for (int i=0; i<size; i++){
        cout << "Enter value "<<i+1<<" : ";
        cin>>userInput[i];
        sum+=userInput[i];
    }
    float average=sum/size, num=number(userInput, average, size);

    cout<<"Average: "<<average<<"\nNumber closest to average: "<<num;
}
```

OUTPUT:



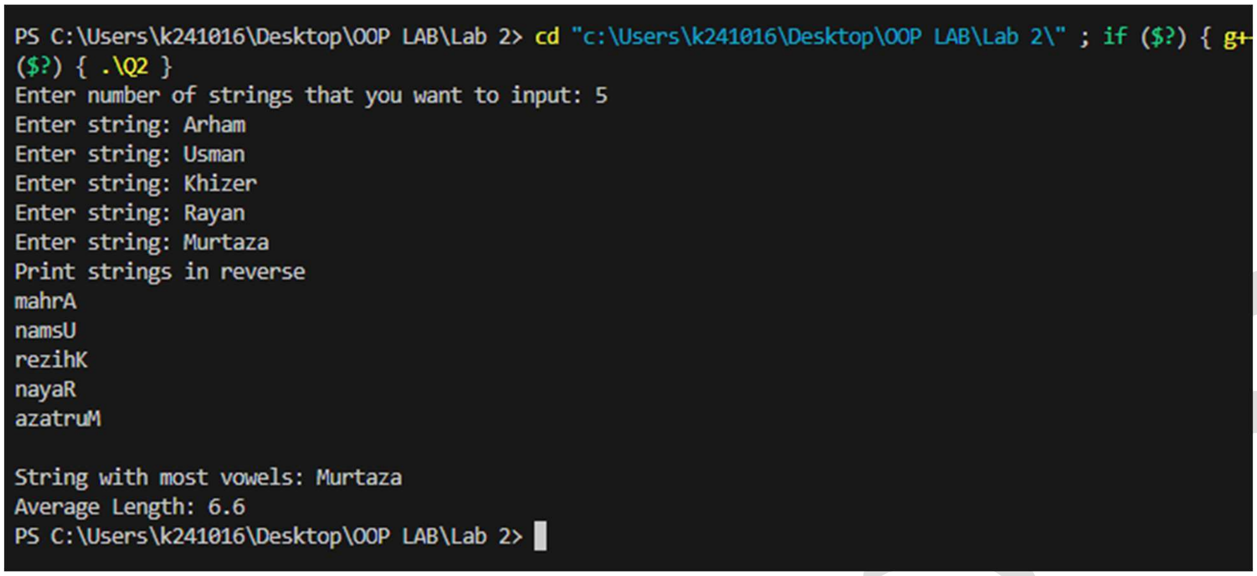
```
PS C:\Users\k241016\Desktop\OOP LAB\Lab 2> cd "c:\Users\k241016\Desktop\OOP LAB\Lab 2\" ; if ($?)
($?) { .\Q1 }
Enter number of values that you want to input: 3
Enter value 1 : 10.4
Enter value 2 : 10.5
Enter value 3 : 10.6
Average: 10.5
Number closest to average: 10.5
PS C:\Users\k241016\Desktop\OOP LAB\Lab 2>
```

QUESTION 2

SOURCE CODE:

```
/*
Write a C++ program that:
- Reads n strings from the user and stores them in a dynamically allocated array of char*.
- Prints the strings in reverse order using pointer arithmetic.
- Finds and prints the string with the most vowels (a, e, i, o, u).
- Calculates and prints the average length of all the strings.
Note: Use pointer notation wherever possible.
If there are multiple strings with the same number of vowels, print the first one encountered
*/

#include <iostream>
#include <string>
using namespace std;

void print_str_in_rev(char *c, int size){
    for (int i=size-1; i>=0; i--){
        cout<<c[i];
    }
    cout<<endl;
}

int vowels(char *c){
    int v=0;
    for (int i=0; c[i]!='\0'; i++){
        if
(c[i]=='A'||c[i]=='E'||c[i]=='I'||c[i]=='O'||c[i]=='U'||c[i]=='a'||c[i]=='e'||c[i]=='i'||c[i]
=='o'||c[i]=='u'){
            v++;
        }
    }
    return v;
}

int max_vowels(char**c, int size){
    int v=-1; int index=-1; int num;
    for (int i=0; i<size; i++){
        num=vowels(c[i]);
        if (num>v){
            index=i;
            v=num;
        }
    }
    return index;
}

float average(int *arr, int size){
    float avg=0;
    for (int i=0; i<size; i++){
        avg+=arr[i];
    }
    return avg/size;
}

int main(){
    int size;
    cout<<"Enter number of strings that you want to input: ";
    cin>>size;
    char **sptr= new char*[size];
    int *sizes=new int[size];
    string gg;
    for (int i=0; i<size; i++){
        cout<<"Enter string: ";
        cin>>gg;
        sizes[i]=gg.length()+1;
        sptr[i]=new char[sizes[i]];
        for (int j=0; j<sizes[i];j++){
            sptr[i][j]=gg[j];
        }
    }
    cout<<"Print strings in reverse\n";
    for (int i=0; i<size; i++){
        print_str_in_rev(sptr[i], sizes[i]-1);
    }
    cout<<"\nString with most vowels: ";
    int max=max_vowels(sptr, size);
    for (int i=0; sptr[max][i]!='\0'; i++){
        cout<<sptr[max][i];
    }
    cout<<"\nAverage Length: "<<average(sizes, size);
}
```

OUTPUT:



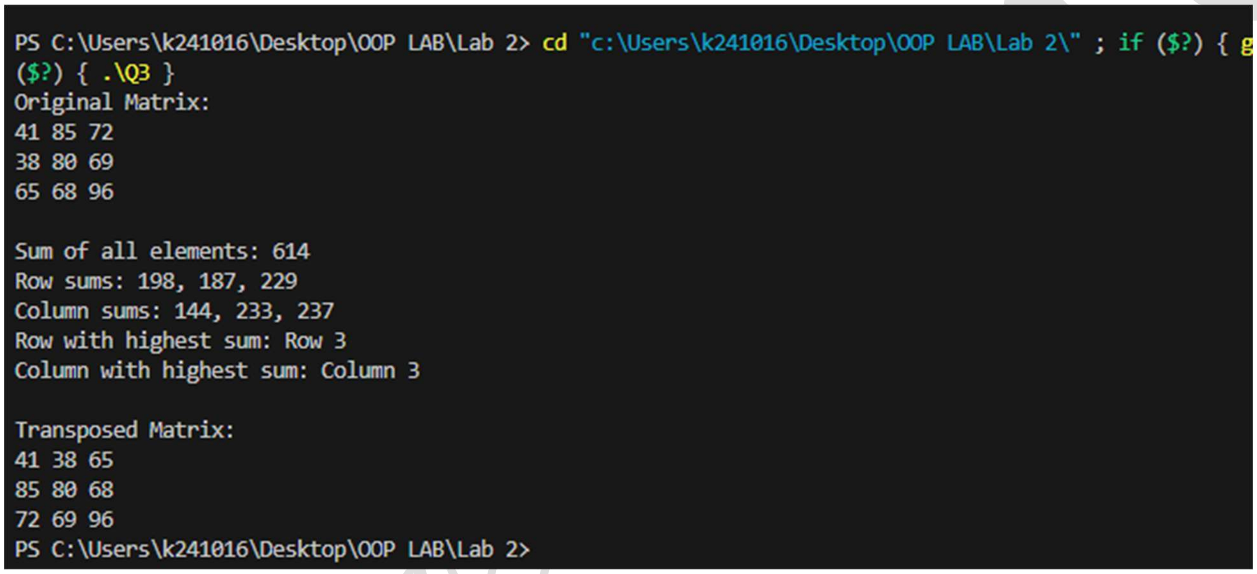
```
PS C:\Users\k241016\Desktop\OOP LAB\Lab 2> cd "c:\Users\k241016\Desktop\OOP LAB\Lab 2\" ; if ($?) { g+
($?) { .\Q2 }
Enter number of strings that you want to input: 5
Enter string: Arham
Enter string: Usman
Enter string: Khizer
Enter string: Rayan
Enter string: Murtaza
Print strings in reverse
mahrA
namsU
rezihK
nayaR
azatruM

String with most vowels: Murtaza
Average Length: 6.6
PS C:\Users\k241016\Desktop\OOP LAB\Lab 2>
```

QUESTION 3

SOURCE CODE:

```cpp
/*
Write a C++ program that:
- Dynamically allocates a 2D array using pointers (not using vector or standard containers).
- Fills the array with random integers between 1 and 100.
- Pass the 2D array to function to perform these tasks:
- Calculates and prints The sum of all elements in the array.
- Calculates and prints The sum of each row and each column.
- Calculates and prints The row and column with the highest sum.
- Pass the 2D array to a function to transpose the matrix and print the resulting matrix.
Free the dynamically allocated memory.
Note:
Use functions to perform the calculations and matrix operations (do not write all code inside
main()).
Handle edge cases, such as when the array has no elements or is improperly allocated.
Sample Output:
Original Matrix:
[ 12 35 56 ]
[ 8 45 67 ]
[ 23 54 34 ]
Sum of all elements: 434
Row sums: 103, 120, 111
Column sums: 43, 134, 157
Row with highest sum: Row 2
Column with highest sum: Column 3
Transposed Matrix:
[ 12 8 23 ]
[ 35 45 54 ]
[ 56 67 34 ]
*/
#include <iostream>
#include <math.h>
#include <cstdlib>
using namespace std;

void total_sum(int **&arr){
    cout<<"Sum of all elements: ";
    int s=0;
    for (int i=0; i<3; i++){
        for (int j=0; j<3; j++){
            s+=arr[i][j];
        }
    }
    cout<<s<<endl;
}

int sum_row(int **&arr){
    cout<<"Row sums: ";
    int s=0, index=-1, max_sum=0;
    for (int i=0; i<3; i++){
        s=0;
        for (int j=0; j<3; j++){
            s+=arr[i][j];
        }
        if (i!=2) cout<<s<<", ";
        else cout<<s<<endl;
        if (max_sum<s){
            max_sum=s;
            index=i;
        }
    }
    return index;
}

int sum_col(int **&arr){
    cout<<"Column sums: ";
    int s=0, index=-1, max_sum=0;
    for (int i=0; i<3; i++){
        s=0;
        for (int j=0; j<3; j++){
            s+=arr[j][i];
        }
        if (i!=2) cout<<s<<", ";
        else cout<<s<<endl;
        if (max_sum<s){
            max_sum=s;
            index=i;
        }
    }
    return index;
}

int** transpose(int **&arr){
    int **t= new int*[3];
    if (t==NULL){
        cout<<"Memory allocation Failed:(";
        return t;
    }
    for (int i=0; i<3; i++){
        t[i]=new int[3];
        if (t[i]==NULL){
            cout<<"Memory allocation Failed:(";
            return t;
        }
    }
    for (int i=0; i<3; i++){
        for (int j=0; j<3; j++){
            t[i][j]=arr[j][i];
        }
    }
    return t;
}

void print_arr(int **&arr){
    for (int i=0; i<3; i++){
        for (int j=0; j<3; j++){
            cout<<arr[i][j]<<" ";
        }
        cout<<endl;
    }
}

void master_function(int **&arr){
    cout<<"Original Matrix:\n";
    print_arr(arr);
    cout<<endl;
    total_sum(arr);
    int row=sum_row(arr);
    int col=sum_col(arr);
    cout<<"Row with highest sum: Row "<<row+1<<endl;
    cout<<"Column with highest sum: Column "<<col+1<<endl;
    cout<<endl;
    int **transposed_matrix=transpose(arr);
    cout<<"Transposed Matrix:\n";
    print_arr(transposed_matrix);
    delete []transposed_matrix;
}

int main(){
    int **arr= new int*[3];
    if (arr==NULL){
        cout<<"Memory allocation Failed:(";
        return -1;
    }
    for (int i=0; i<3; i++){
        arr[i]=new int[3];
        if (arr[i]==NULL){
            cout<<"Memory allocation Failed:(";
            return -1;
        }
        for (int j=0; j<3; j++){
            arr[i][j]=rand()%101;
            while (arr[i][j]<1) arr[i][j]=rand()%101;
        }
    }
    master_function(arr);
    delete []arr;
}
```

OUTPUT:



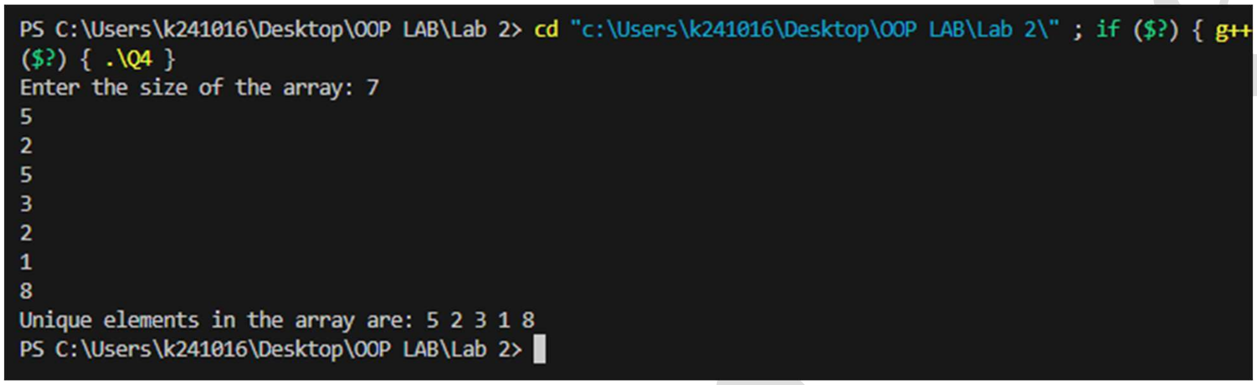
```
PS C:\Users\k241016\Desktop\OOP LAB\Lab 2> cd "c:\Users\k241016\Desktop\OOP LAB\Lab 2\" ; if ($?) { g
($?) { .\Q3 }
Original Matrix:
41 85 72
38 80 69
65 68 96

Sum of all elements: 614
Row sums: 198, 187, 229
Column sums: 144, 233, 237
Row with highest sum: Row 3
Column with highest sum: Column 3

Transposed Matrix:
41 38 65
85 80 68
72 69 96
PS C:\Users\k241016\Desktop\OOP LAB\Lab 2>
```

QUESTION 4

SOURCE CODE:

```
/*
You are required to write a C++ program that will creates a function named unique that will
take array
as input . the array may contains the duplicates values but you have to process on the array
and have to
return the array which must contains only unique values not duplicates.
*/

#include <iostream>
using namespace std;

int present(int *arr, int size, int value){
    for (int i=0; i<size; i++){
        if (arr[i]==value) return 1;
    }
    return 0;
}

int* unique(int *arr, int &size){
    int* revised=new int[size], new_size=0;
    for (int i=0; i<size; i++){
        if (present(revised, new_size, arr[i])==0){
            revised[new_size++]=arr[i];
        }
    }
    size=new_size;
    return revised;
}

int main(){
    int size;
    cout<<"Enter the size of the array: ";
    cin>>size;
    int *arr= new int[size];
    for (int i=0; i<size; i++){
        cin>>arr[i];
    }
    arr=unique(arr, size);
    cout<<"Unique elements in the array are: ";
    for (int i=0; i<size; i++){
        cout << arr[i]<< " ";
    }
    delete[]arr;
}
```

OUTPUT:



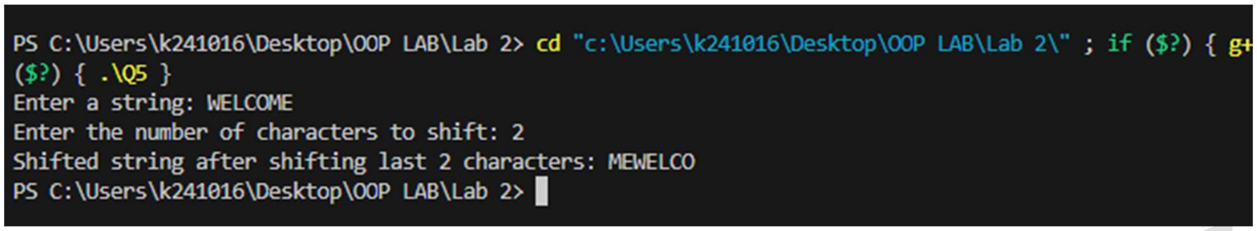
```
PS C:\Users\k241016\Desktop\OOP LAB\Lab 2> cd "c:\Users\k241016\Desktop\OOP LAB\Lab 2\" ; if ($?) { g++
($?) { .\Q4 }
Enter the size of the array: 7
5
2
5
3
2
1
8
Unique elements in the array are: 5 2 3 1 8
PS C:\Users\k241016\Desktop\OOP LAB\Lab 2> 
```

QUESTION 5

SOURCE CODE:

```cpp
/*
You are required to write a c++ function swap_string that shifts the last n characters of a
string to the
front n times. It will take str and int as parameters. And will return the new string after
shifting.
Note: You have to work with pointers.
*/

#include <iostream>
using namespace std;

string swap_string(string &s, int num){
    int len=s.length();
    string c;
    int index=len-num;
    if (num>len) num=len;
    for (int i=0; i<num; i++){
        c+=s[index++];
    }
    for (int i=num; i<len; i++){
        c+=s[i-num];
    }
    return c;
}

int main(){
    string s;
    cout<<"Enter a string: ";
    cin>>s;
    int num;
    cout<<"Enter the number of characters to shift: ";
    cin>>num;
    cout<<"Shifted string after shifting last "<<num<<" characters: "<<swap_string(s, num);
}
```

OUTPUT:

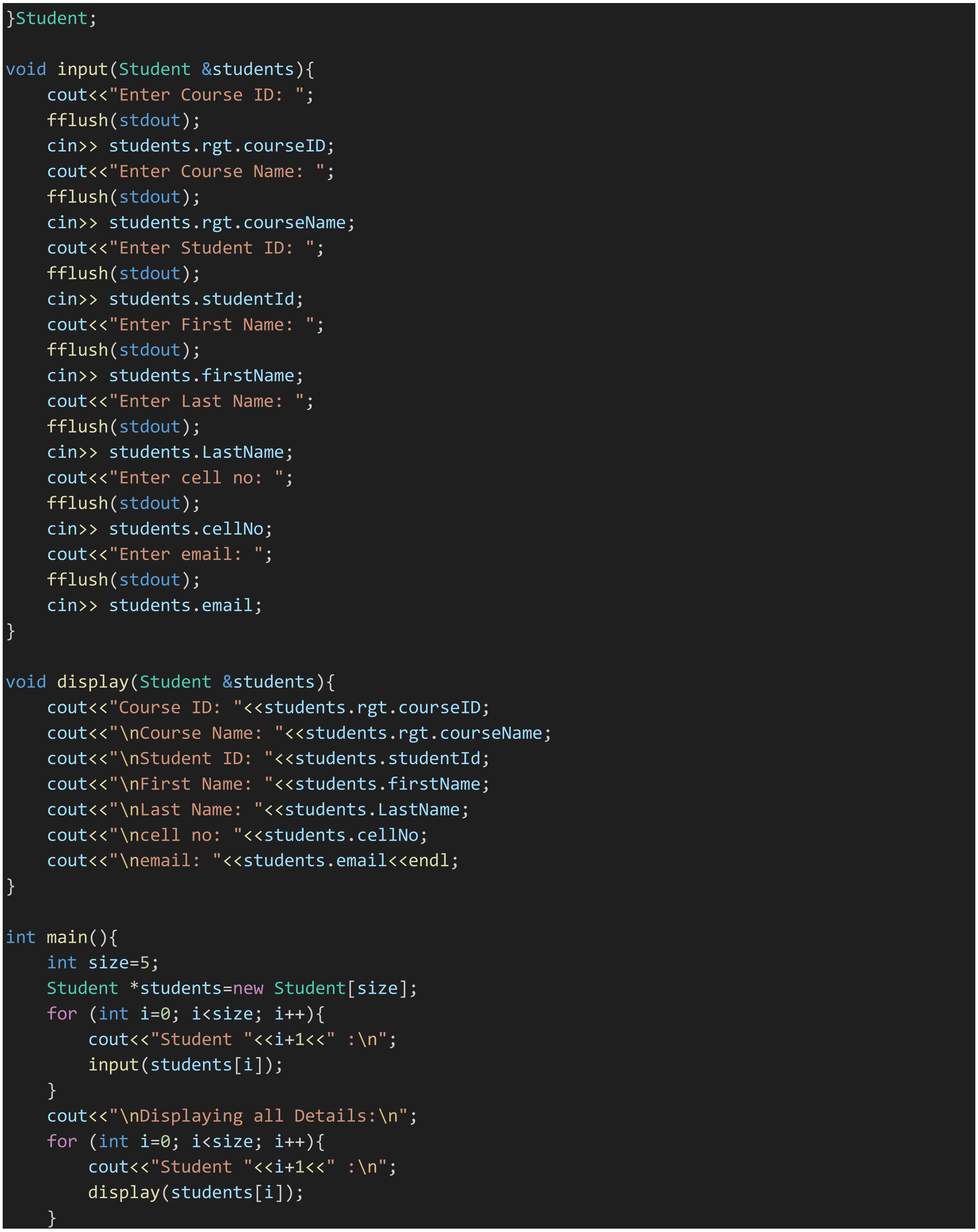


```
PS C:\Users\k241016\Desktop\OOP LAB\Lab 2> cd "c:\Users\k241016\Desktop\OOP LAB\Lab 2\" ; if ($?) { g+
($?) { .\Q5 }
Enter a string: WELCOME
Enter the number of characters to shift: 2
Shifted string after shifting last 2 characters: MEWELCO
PS C:\Users\k241016\Desktop\OOP LAB\Lab 2>
```

QUESTION 6

SOURCE CODE:

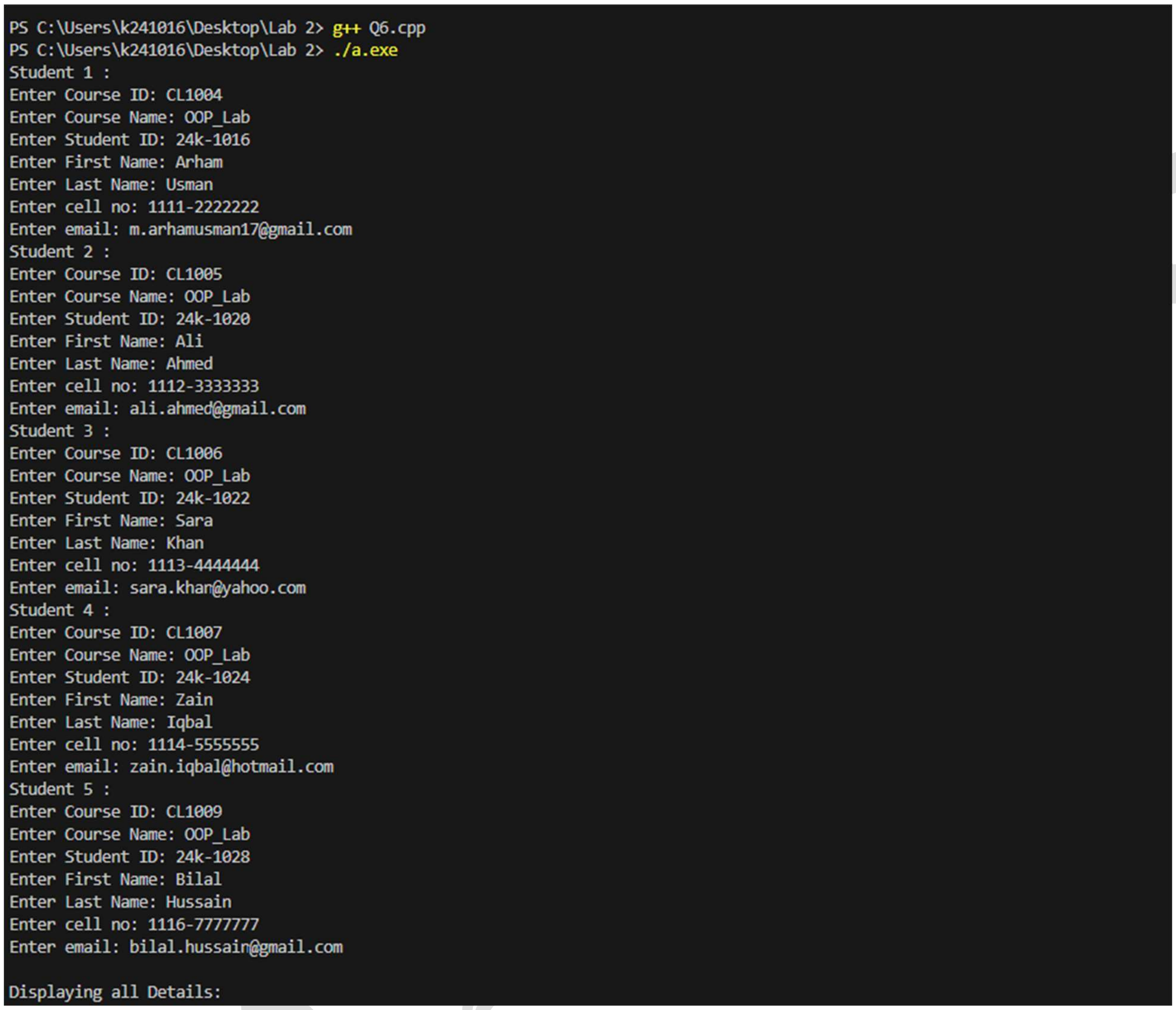
```
/*
You are tasked with implementing a simple Student Registration System in C++. Define two
structures,
Register and Student, where Register contains attributes courseId and courseName, and Student
inherits
from Register while having additional attributes such as studentId, firstName, lastName,
cellNo, and
email. Your goal is to create an array of Student structures to store information for five
students. Write a
C++ program that accomplishes the following tasks:
- Implement the Register and Student structures.
- Inherit the Register structure in the Student structure.
- Create an array of Student structures to store information for 5 students.
- Take input for each student, including their courseId, courseName, studentId, firstName,
lastName, cellNo, and email.
- Display the information for all 5 students.
*/

#include <iostream>
using namespace std;

typedef struct{
    string courseID;
    string courseName;
}Register;

typedef struct{
    Register rgt;
    string studentId;
    string firstName;
    string LastName;
    string cellNo;
    string email;
```



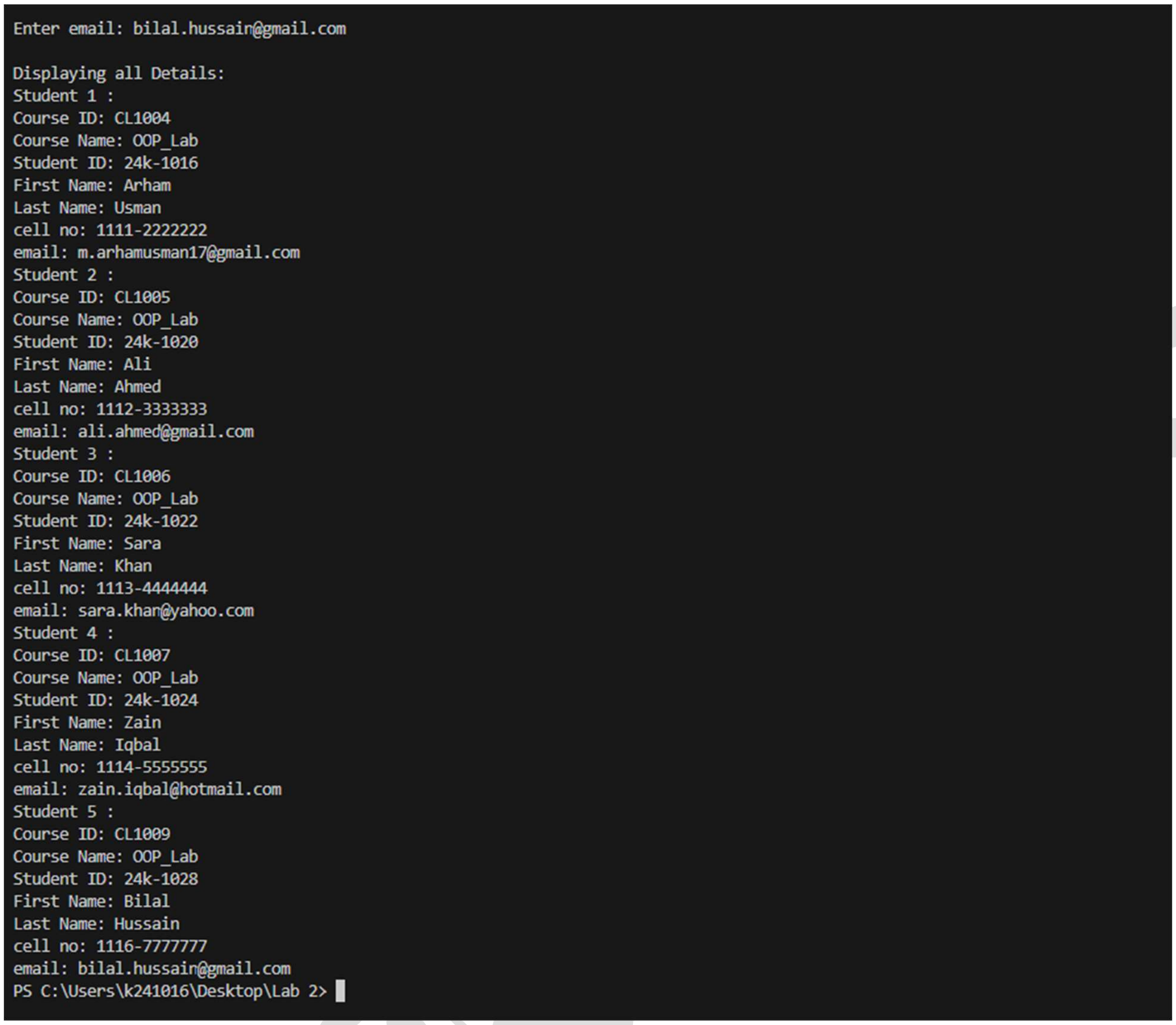
```cpp
}Student;

void input(Student &students){
    cout<<"Enter Course ID: ";
    fflush(stdout);
    cin>> students.rgt.courseID;
    cout<<"Enter Course Name: ";
    fflush(stdout);
    cin>> students.rgt.courseName;
    cout<<"Enter Student ID: ";
    fflush(stdout);
    cin>> students.studentId;
    cout<<"Enter First Name: ";
    fflush(stdout);
    cin>> students.firstName;
    cout<<"Enter Last Name: ";
    fflush(stdout);
    cin>> students.LastName;
    cout<<"Enter cell no: ";
    fflush(stdout);
    cin>> students.cellNo;
    cout<<"Enter email: ";
    fflush(stdout);
    cin>> students.email;
}

void display(Student &students){
    cout<<"Course ID: "<<students.rgt.courseID;
    cout<<"\nCourse Name: "<<students.rgt.courseName;
    cout<<"\nStudent ID: "<<students.studentId;
    cout<<"\nFirst Name: "<<students.firstName;
    cout<<"\nLast Name: "<<students.LastName;
    cout<<"\ncell no: "<<students.cellNo;
    cout<<"\nemail: "<<students.email<<endl;
}

int main(){
    int size=5;
    Student *students=new Student[size];
    for (int i=0; i<size; i++){
        cout<<"Student "<<i+1<<" :\n";
        input(students[i]);
    }
    cout<<"\nDisplaying all Details:\n";
    for (int i=0; i<size; i++){
        cout<<"Student "<<i+1<<" :\n";
        display(students[i]);
    }
```

```
}
```

OUTPUT:



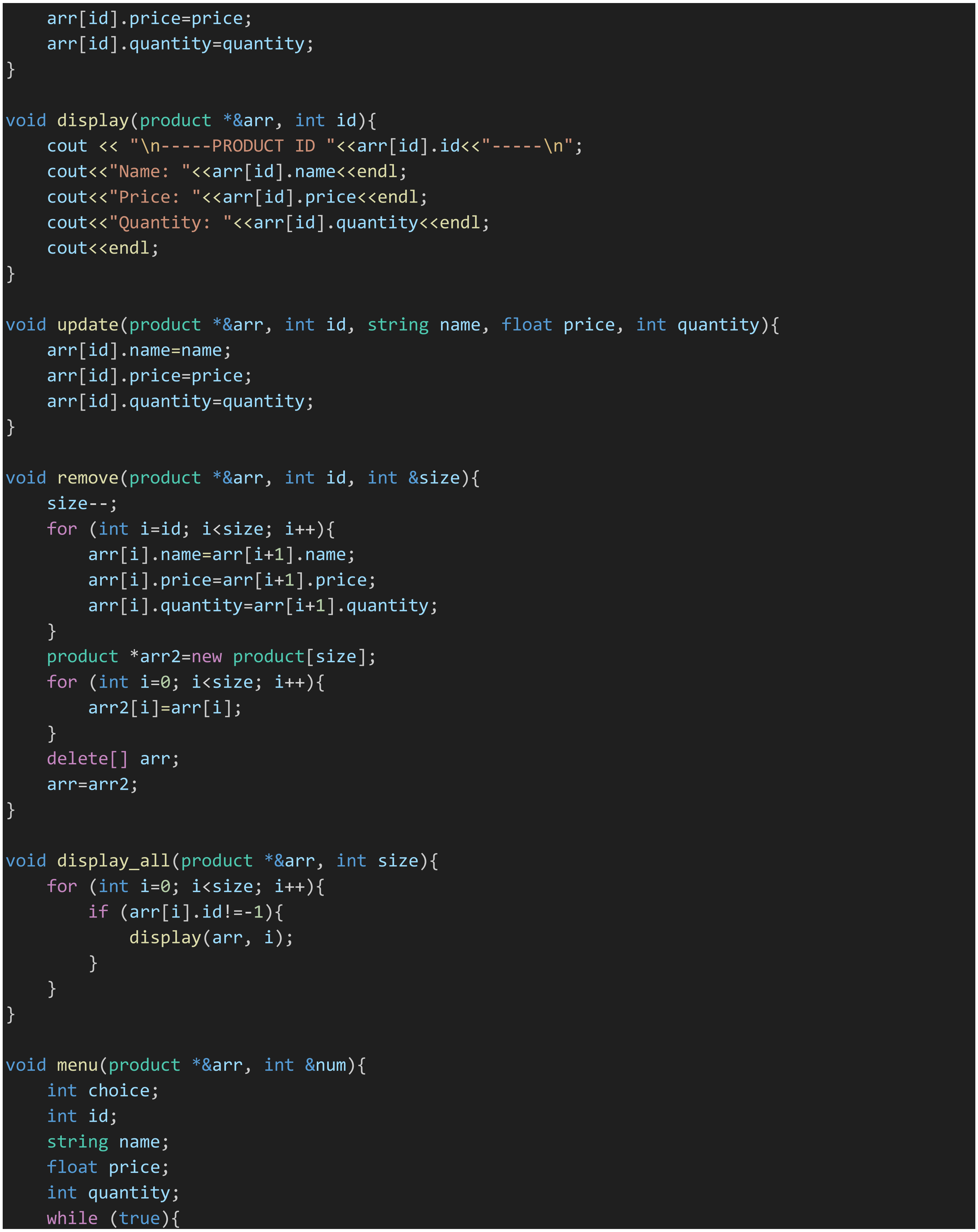
```
PS C:\Users\k241016\Desktop\Lab 2> g++ Q6.cpp
PS C:\Users\k241016\Desktop\Lab 2> ./a.exe
Student 1 :
Enter Course ID: CL1004
Enter Course Name: OOP_Lab
Enter Student ID: 24k-1016
Enter First Name: Arham
Enter Last Name: Usman
Enter cell no: 1111-2222222
Enter email: m.arhamusman17@gmail.com
Student 2 :
Enter Course ID: CL1005
Enter Course Name: OOP_Lab
Enter Student ID: 24k-1020
Enter First Name: Ali
Enter Last Name: Ahmed
Enter cell no: 1112-3333333
Enter email: ali.ahmed@gmail.com
Student 3 :
Enter Course ID: CL1006
Enter Course Name: OOP_Lab
Enter Student ID: 24k-1022
Enter First Name: Sara
Enter Last Name: Khan
Enter cell no: 1113-4444444
Enter email: sara.khan@yahoo.com
Student 4 :
Enter Course ID: CL1007
Enter Course Name: OOP_Lab
Enter Student ID: 24k-1024
Enter First Name: Zain
Enter Last Name: Iqbal
Enter cell no: 1114-5555555
Enter email: zain.iqbal@hotmail.com
Student 5 :
Enter Course ID: CL1009
Enter Course Name: OOP_Lab
Enter Student ID: 24k-1028
Enter First Name: Bilal
Enter Last Name: Hussain
Enter cell no: 1116-7777777
Enter email: bilal.hussain@gmail.com

Displaying all Details:
```


```
Enter email: bilal.hussain@gmail.com

Displaying all Details:
Student 1 :
Course ID: CL1004
Course Name: OOP_Lab
Student ID: 24k-1016
First Name: Arham
Last Name: Usman
cell no: 1111-2222222
email: m.arhamusman17@gmail.com
Student 2 :
Course ID: CL1005
Course Name: OOP_Lab
Student ID: 24k-1020
First Name: Ali
Last Name: Ahmed
cell no: 1112-3333333
email: ali.ahmed@gmail.com
Student 3 :
Course ID: CL1006
Course Name: OOP_Lab
Student ID: 24k-1022
First Name: Sara
Last Name: Khan
cell no: 1113-4444444
email: sara.khan@yahoo.com
Student 4 :
Course ID: CL1007
Course Name: OOP_Lab
Student ID: 24k-1024
First Name: Zain
Last Name: Iqbal
cell no: 1114-5555555
email: zain.iqbal@hotmail.com
Student 5 :
Course ID: CL1009
Course Name: OOP_Lab
Student ID: 24k-1028
First Name: Bilal
Last Name: Hussain
cell no: 1116-7777777
email: bilal.hussain@gmail.com
PS C:\Users\k241016\Desktop\Lab 2>
```

QUESTION 7

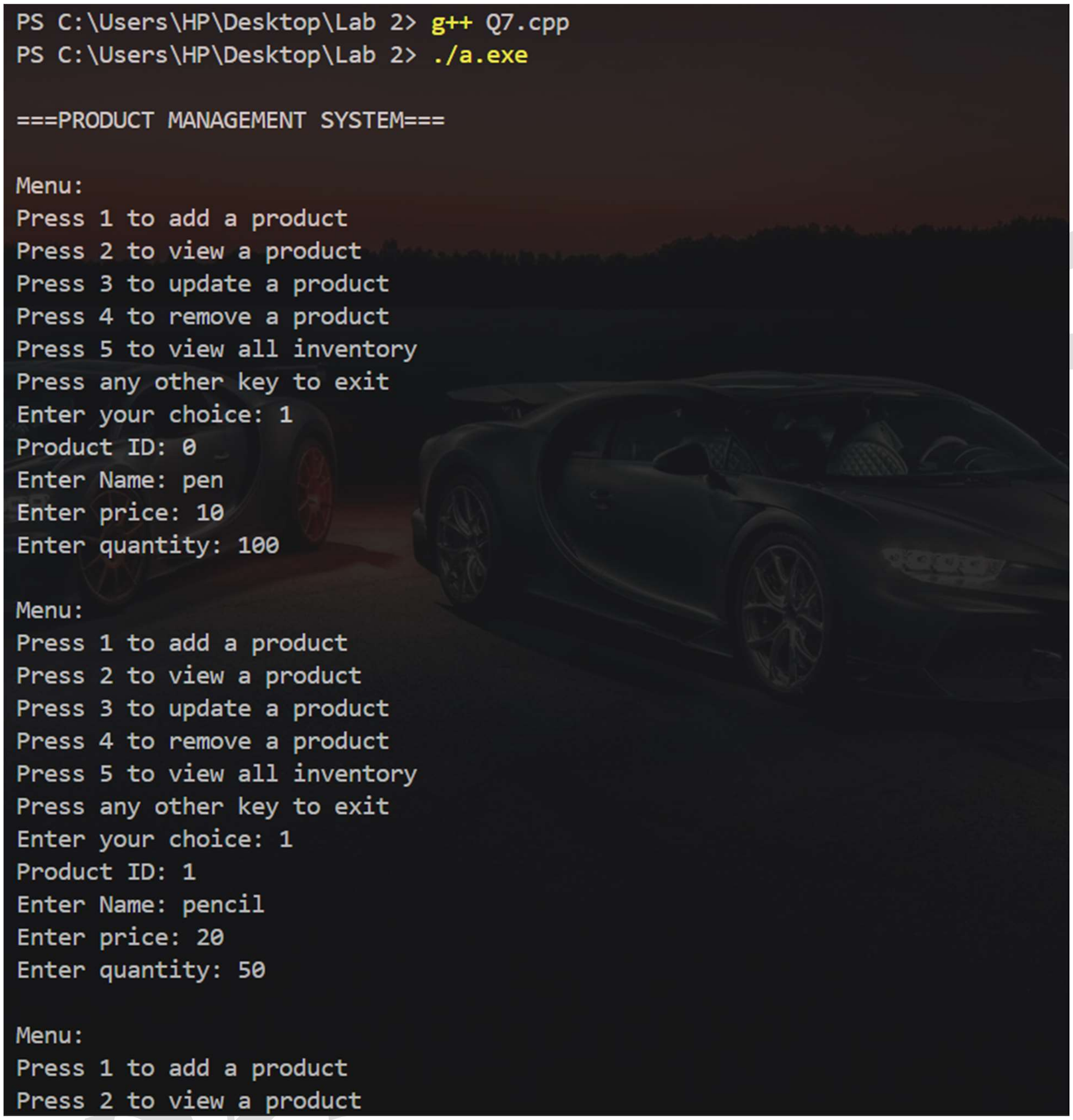
SOURCE CODE:

```
/*
You are tasked with building a simple product management system for an online store.
1. Create a function that allows the addition of a new product to the system. The function
should
take parameters such as product name, price, quantity, and any other relevant details.
2. Implement a function that takes a product ID as input and displays detailed information
about the
product, including its name, price, quantity in stock, and any other relevant details.
3. Design a function that enables the update of product information. It should take a product
ID as
well as the new details (e.g., updated price, quantity, etc.) and modify the existing
product&#39;s
information accordingly.
4. Create a function that removes a product from the system based on its product ID. Ensure
that
the inventory is updated after the removal.
*/

#include <iostream>
using namespace std;

typedef struct{
    int id;
    string name;
    float price;
    int quantity;
}product;

void increase_size(product *&arr, int &size){
    product *updated= new product[++size];
    for (int i=0; i<size-1; i++){
        updated[i]=arr[i];
    }
    delete[] arr;
    arr=updated;
}

void add_product(product *&arr, int id, string name, float price, int quantity){
    arr[id].id=id;
    arr[id].name=name;
```

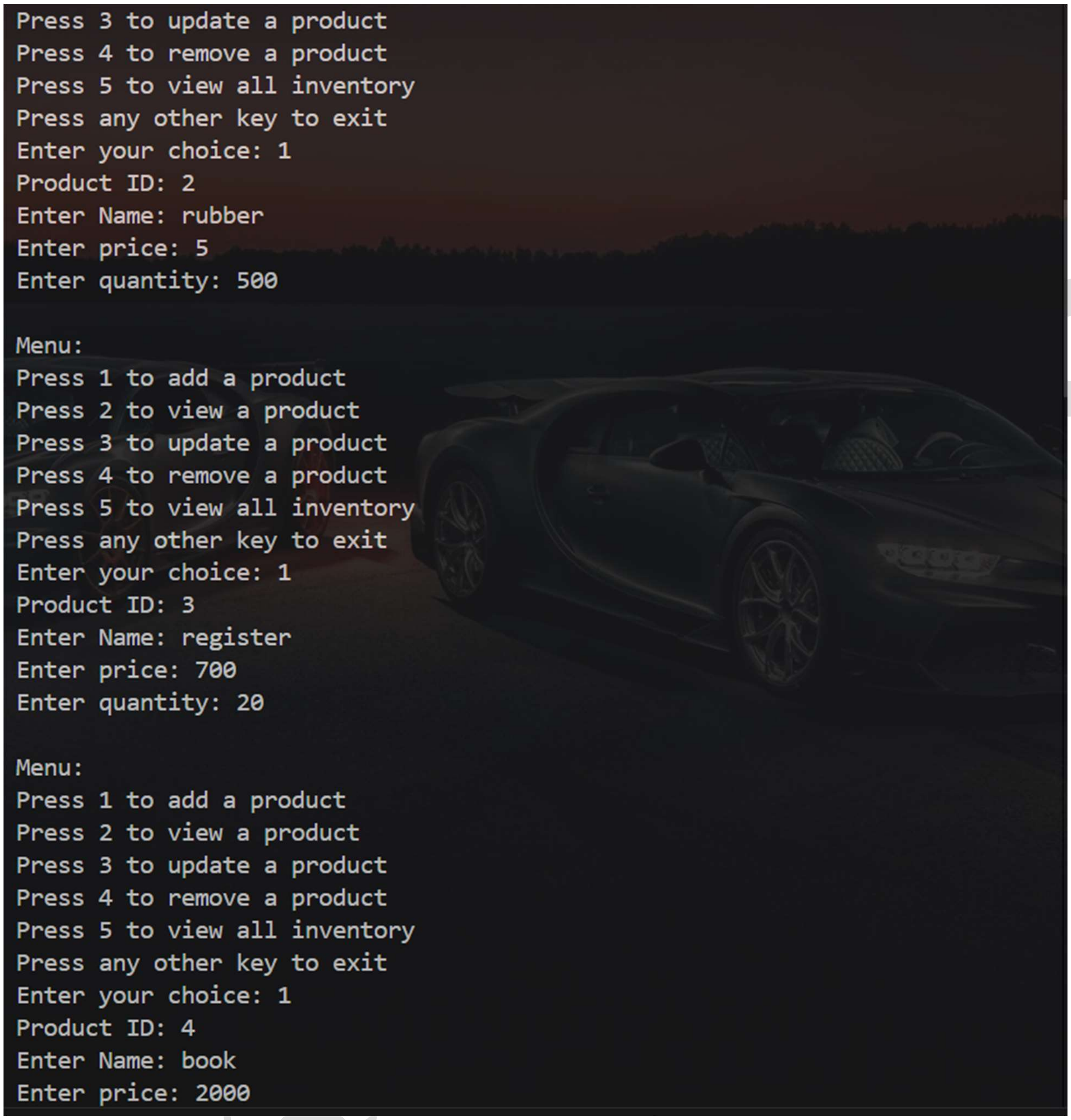

```
    arr[id].price=price;
    arr[id].quantity=quantity;
}

void display(product *&arr, int id){
    cout << "\n-----PRODUCT ID "<<arr[id].id<<"-----\n";
    cout<<"Name: "<<arr[id].name<<endl;
    cout<<"Price: "<<arr[id].price<<endl;
    cout<<"Quantity: "<<arr[id].quantity<<endl;
    cout<<endl;
}

void update(product *&arr, int id, string name, float price, int quantity){
    arr[id].name=name;
    arr[id].price=price;
    arr[id].quantity=quantity;
}

void remove(product *&arr, int id, int &size){
    size--;
    for (int i=id; i<size; i++){
        arr[i].name=arr[i+1].name;
        arr[i].price=arr[i+1].price;
        arr[i].quantity=arr[i+1].quantity;
    }
    product *arr2=new product[size];
    for (int i=0; i<size; i++){
        arr2[i]=arr[i];
    }
    delete[] arr;
    arr=arr2;
}

void display_all(product *&arr, int size){
    for (int i=0; i<size; i++){
        if (arr[i].id!=-1){
            display(arr, i);
        }
    }
}

void menu(product *&arr, int &num){
    int choice;
    int id;
    string name;
    float price;
    int quantity;
    while (true){
```

```cpp
        cout<<"\nMenu:\nPress 1 to add a product\nPress 2 to view a product\n";
        cout<<"Press 3 to update a product\nPress 4 to remove a product\n";
        cout<<"Press 5 to view all inventory\nPress any other key to exit";
        cout<<"\nEnter your choice: ";
        fflush(stdout);
        cin>>choice;
        switch (choice){
            case 1:
                increase_size(arr, num);
                cout<<"Product ID: "<<num-1<<endl;
                cout<<"Enter Name: ";
                fflush(stdout);
                cin>>name;
                cout<<"Enter price: ";
                fflush(stdout);
                cin>>price;
                cout<<"Enter quantity: ";
                fflush(stdout);
                cin>>quantity;
                add_product(arr, num-1, name, price, quantity);
                break;
            case 2:
                cout<<"Enter Product ID: ";
                fflush(stdout);
                cin>>id;
                if (id>=num||id<0){
                    cout<<"Invalid ID!\n";
                }
                else{
                    display(arr, id);
                }
                break;
            case 3:
                cout<<"Enter Product ID: ";
                fflush(stdout);
                cin>>id;
                if (id>=num||id<0){
                    cout<<"Invalid ID!\n";
                }
                else{
                    cout<<"Enter Name: ";
                    fflush(stdout);
                    cin>>name;
                    cout<<"Enter price: ";
                    fflush(stdout);
                    cin>>price;
                    cout<<"Enter quantity: ";
                    fflush(stdout);
                    cin>>quantity;
                    update(arr, id, name, price, quantity);
                }
                break;
            case 4:
                cout<<"Enter Product ID: ";
                fflush(stdout);
                cin>>id;
                if (id>=num||id<0){
                    cout<<"Invalid ID!\n";
                }
                else{
                    remove(arr, id, num);
                }
                break;
            case 5:
                display_all(arr, num);
                break;
            default:
                return;
        }
    }
}

int main(){
    product *online_store = new product[1];
    int number_of_products=0;
    cout<<"\n===PRODUCT MANAGEMENT SYSTEM===\n";
    menu(online_store, number_of_products);
    delete[] online_store;
}
```

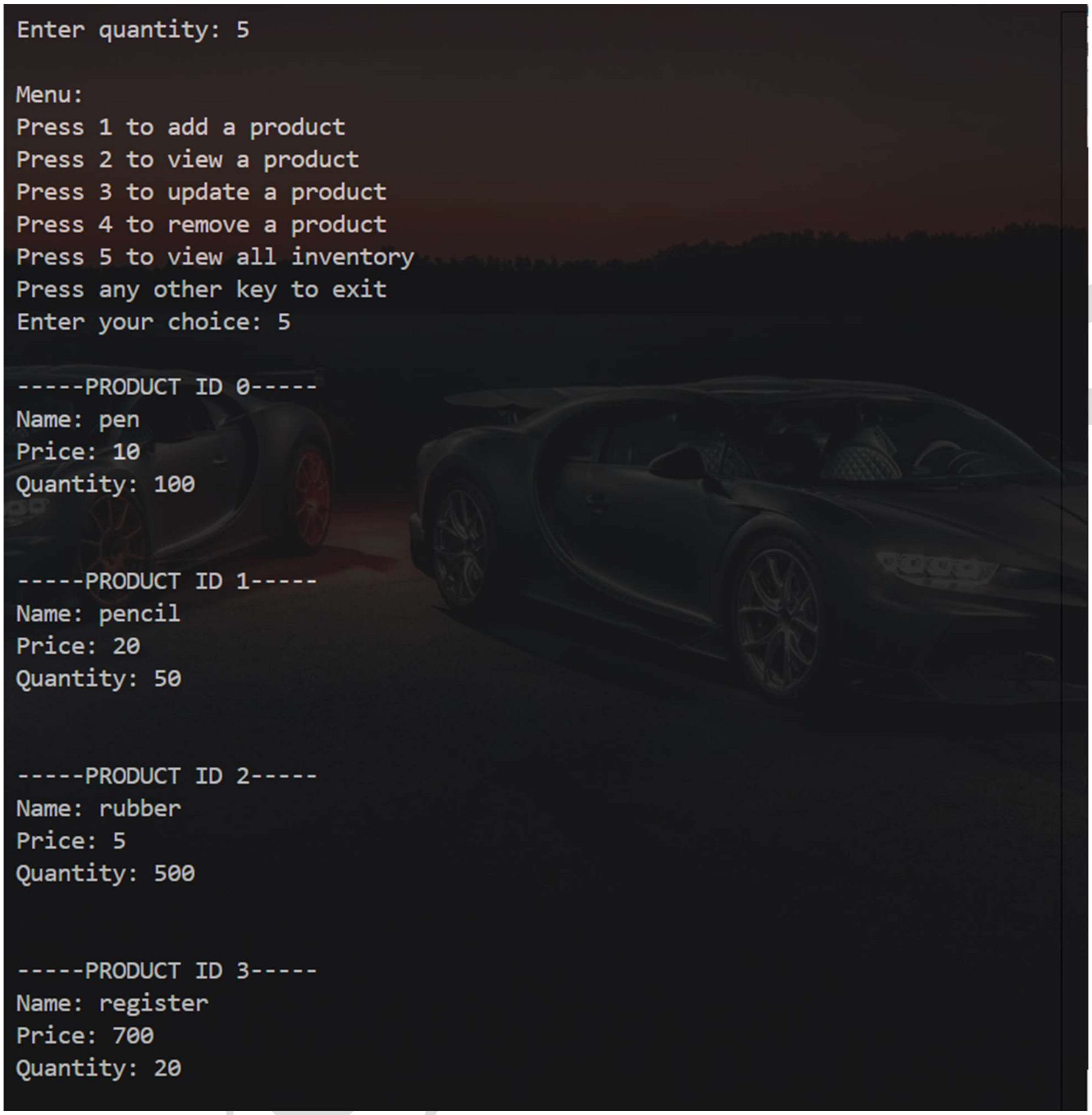
OUTPUT:



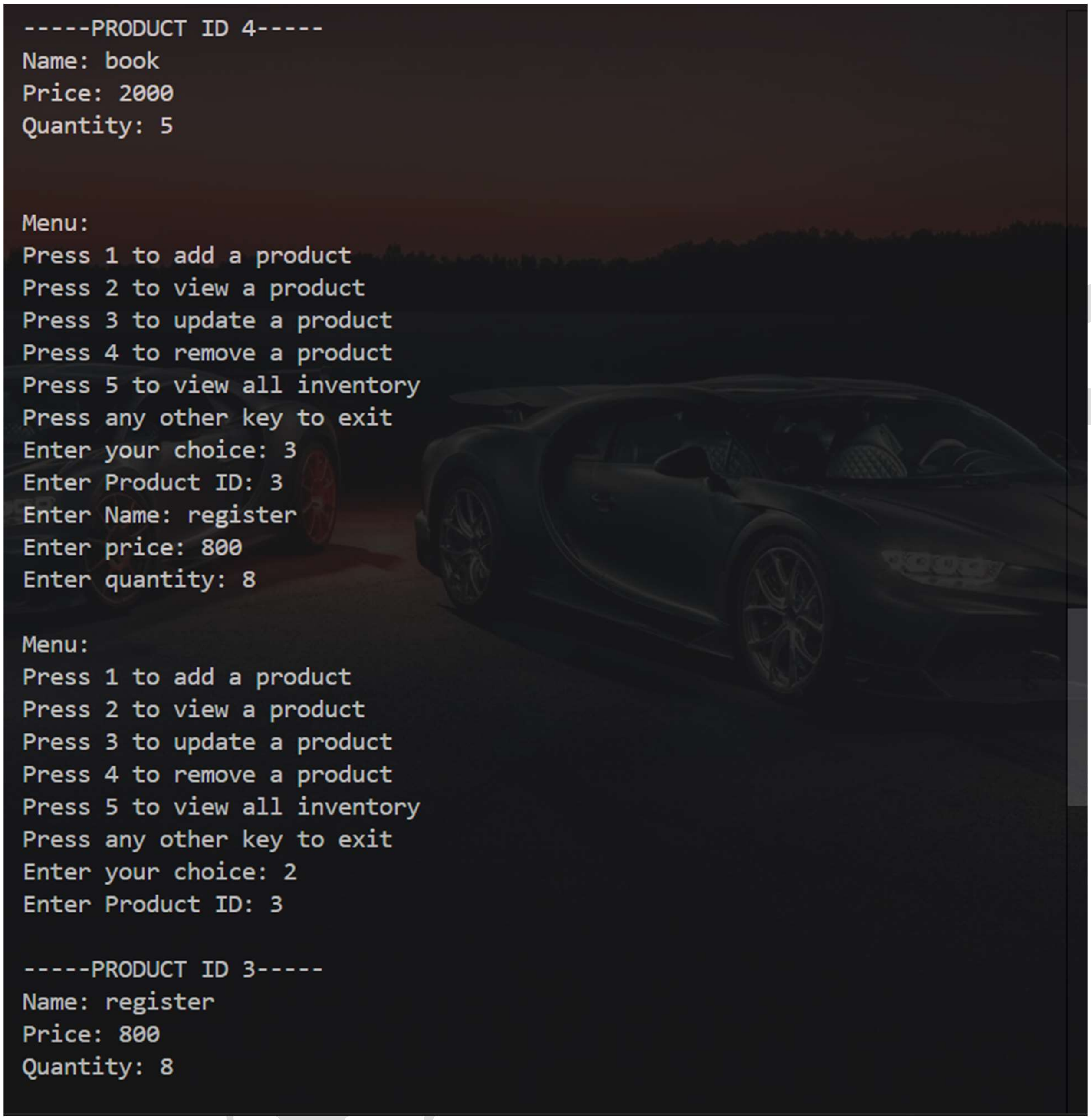
```
PS C:\Users\HP\Desktop\Lab 2> g++ Q7.cpp
PS C:\Users\HP\Desktop\Lab 2> ./a.exe

===PRODUCT MANAGEMENT SYSTEM===

Menu:
Press 1 to add a product
Press 2 to view a product
Press 3 to update a product
Press 4 to remove a product
Press 5 to view all inventory
Press any other key to exit
Enter your choice: 1
Product ID: 0
Enter Name: pen
Enter price: 10
Enter quantity: 100

Menu:
Press 1 to add a product
Press 2 to view a product
Press 3 to update a product
Press 4 to remove a product
Press 5 to view all inventory
Press any other key to exit
Enter your choice: 1
Product ID: 1
Enter Name: pencil
Enter price: 20
Enter quantity: 50

Menu:
Press 1 to add a product
Press 2 to view a product
```



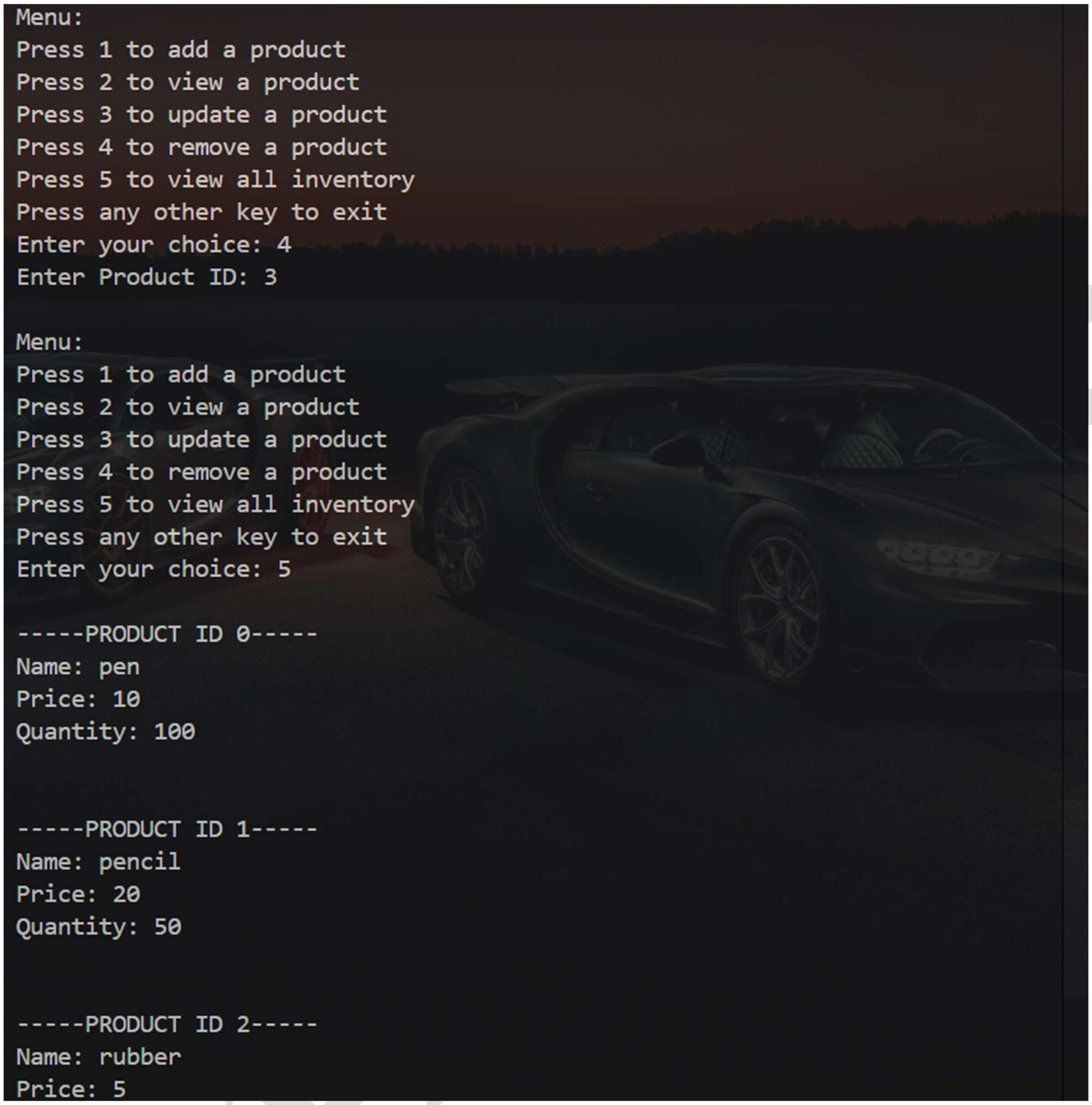
```
Press 3 to update a product
Press 4 to remove a product
Press 5 to view all inventory
Press any other key to exit
Enter your choice: 1
Product ID: 2
Enter Name: rubber
Enter price: 5
Enter quantity: 500

Menu:
Press 1 to add a product
Press 2 to view a product
Press 3 to update a product
Press 4 to remove a product
Press 5 to view all inventory
Press any other key to exit
Enter your choice: 1
Product ID: 3
Enter Name: register
Enter price: 700
Enter quantity: 20

Menu:
Press 1 to add a product
Press 2 to view a product
Press 3 to update a product
Press 4 to remove a product
Press 5 to view all inventory
Press any other key to exit
Enter your choice: 1
Product ID: 4
Enter Name: book
Enter price: 2000
```



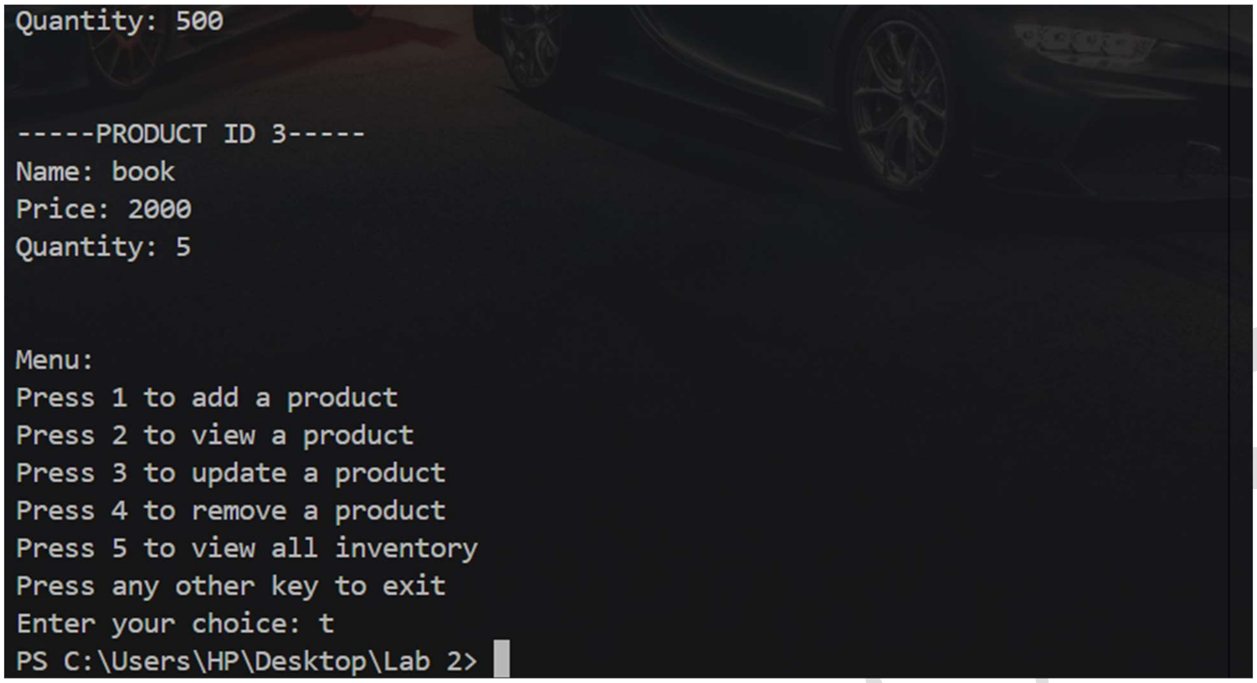
```
Enter quantity: 5

Menu:
Press 1 to add a product
Press 2 to view a product
Press 3 to update a product
Press 4 to remove a product
Press 5 to view all inventory
Press any other key to exit
Enter your choice: 5

-----PRODUCT ID 0-----
Name: pen
Price: 10
Quantity: 100

-----PRODUCT ID 1-----
Name: pencil
Price: 20
Quantity: 50


-----PRODUCT ID 2-----
Name: rubber
Price: 5
Quantity: 500


-----PRODUCT ID 3-----
Name: register
Price: 700
Quantity: 20
```



```
-----PRODUCT ID 4-----
Name: book
Price: 2000
Quantity: 5


Menu:
Press 1 to add a product
Press 2 to view a product
Press 3 to update a product
Press 4 to remove a product
Press 5 to view all inventory
Press any other key to exit
Enter your choice: 3
Enter Product ID: 3
Enter Name: register
Enter price: 800
Enter quantity: 8

Menu:
Press 1 to add a product
Press 2 to view a product
Press 3 to update a product
Press 4 to remove a product
Press 5 to view all inventory
Press any other key to exit
Enter your choice: 2
Enter Product ID: 3

-----PRODUCT ID 3-----
Name: register
Price: 800
Quantity: 8
```



```
Menu:
Press 1 to add a product
Press 2 to view a product
Press 3 to update a product
Press 4 to remove a product
Press 5 to view all inventory
Press any other key to exit
Enter your choice: 4
Enter Product ID: 3

Menu:
Press 1 to add a product
Press 2 to view a product
Press 3 to update a product
Press 4 to remove a product
Press 5 to view all inventory
Press any other key to exit
Enter your choice: 5

-----PRODUCT ID 0-----
Name: pen
Price: 10
Quantity: 100


-----PRODUCT ID 1-----
Name: pencil
Price: 20
Quantity: 50


-----PRODUCT ID 2-----
Name: rubber
Price: 5
```


```
Quantity: 500


-----PRODUCT ID 3-----
Name: book
Price: 2000
Quantity: 5



Menu:
Press 1 to add a product
Press 2 to view a product
Press 3 to update a product
Press 4 to remove a product
Press 5 to view all inventory
Press any other key to exit
Enter your choice: t
PS C:\Users\HP\Desktop\Lab 2>
```