LAB # 03

Task 01: Character Classification

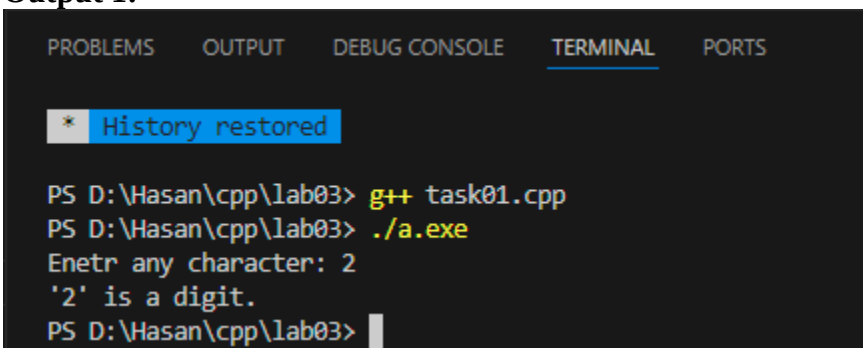
Write a C++ program that checks whether a given character is a vowel, consonant, or a digit. The program should prompt the user to enter a character and then display a message indicating the classification.

Code:

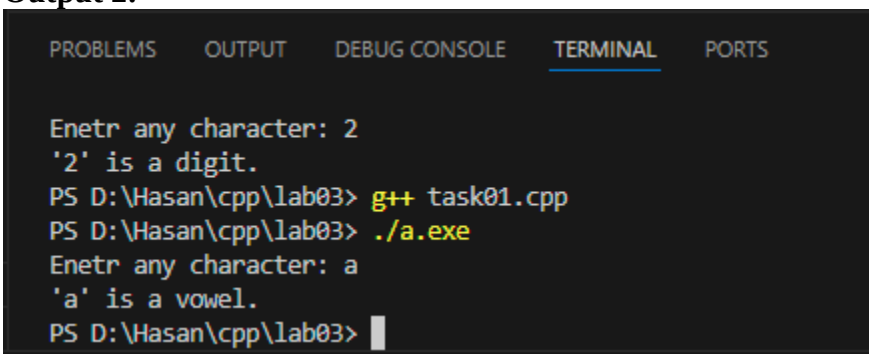
```
#include<iostream>
using namespace std;
int main(){
    char a;
    cout << "Enetr any character: ";
    cin >> a;
    if(a=='a' || a=='A' || a=='e' || a=='E' || a=='i' || a=='I' || a=='o' ||
a=='O' || a=='u' || a=='U'){
        cout <<"\'"<<a<<"\' is a vowel."<<endl;
    }
    else if(a>='0' && a<='9'){
        cout <<"\'"<<a<<"\' is a digit."<<endl;
    }
    else{
        cout <<"\'"<<a<<"\' is consonent."<<endl;
    }

}
```

Output 1:



Output 2:



Task 02: Shopping Cart

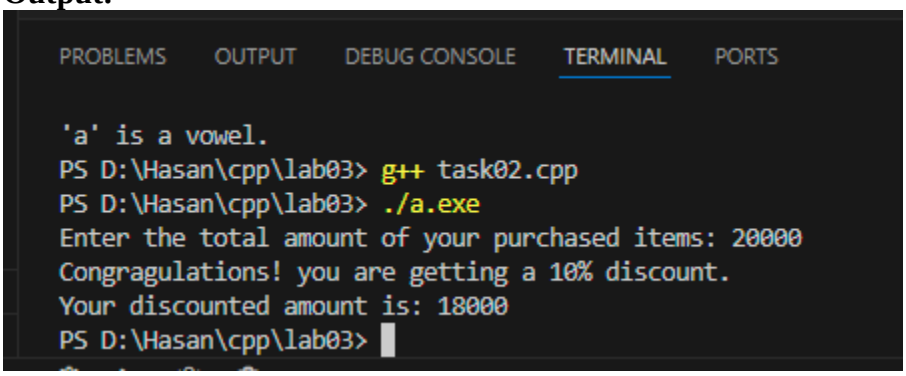
You are developing an online shopping application for a retail store. The store wants to offer discounts to customers based on their total purchase amount. If the total purchase amount exceeds 15000 Rupees, a 10% discount will be applied to the customer's order.
Write a C++ program that prompts the user to enter the total purchase amount. Based on the entered amount, apply the appropriate discount using if-else statements and display the discounted amount to the customer.

Code:

```cpp
#include<iostream>
using namespace std;
int main(){
    int ta = 0; //ta -> total amount
    float fa = 0.00; //fa -> final amount
    cout << "Enter the total amount of your purchased items: ";
    cin >> ta;
    if(ta>15000){
        cout << "Congragulations! you are getting a 10% discount."<<endl;
        fa = ta*0.9; //if getting 10% discount, means he's 90% amount
        cout << "Your discounted amount is: "<<fa<<endl;
    }
    else{
        fa = ta;
        cout << "Your total amount is: "<<fa<<endl;

    }
}
```

Output:



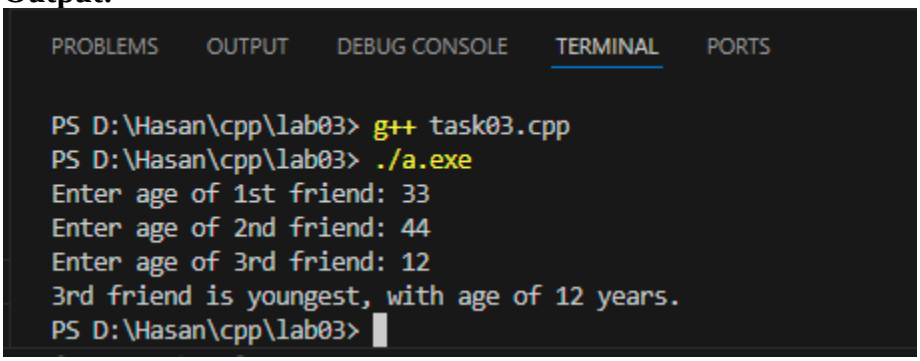
Task 03: Age Analysis

Assume that three friends are planning to do zip line adventure. Where age will be evaluated first to send the younger one first. Write a C++ program where compare age of 3 friends. Find the youngest one from all three.

Code:

```
#include<iostream>
using namespace std;
int main(){
    int age_fr1 = 0, age_fr2 = 0, age_fr3 = 0;
    cout << "Enter age of 1st friend: ";
    cin >> age_fr1;
    cout << "Enter age of 2nd friend: ";
    cin >> age_fr2;
    cout << "Enter age of 3rd friend: ";
    cin >> age_fr3;
    if(age_fr1<age_fr2 && age_fr1<age_fr3){
        cout << "1st friend is youngest, with age of "<<age_fr1<<" years."<<endl;
    }
    else if(age_fr2<age_fr1 && age_fr2<age_fr3){
        cout << "2nd friend is youngest, with age of "<<age_fr2<<" years."<<endl;
    }
    else{
        cout << "3rd friend is youngest, with age of "<<age_fr3<<" years."<<endl;
    }
}
```

Output:



Task 04: Medical Diagnosis System

Write a C++ program that takes the user's input for body temperature and uses if-else statements to determine and display a basic medical diagnosis such as "Hypothermia," "Normal Body Temperature," "Low-Grade Fever," or "High Fever" based on different temperature ranges. Students can run the program with various temperature inputs to observe the different diagnoses.

Temp less than 36.5	Hypothermia
Temp in between 36.5 and 37.5	Normal Body Temperature
Temp in between 37.6 and 38.5	Low grade Fever
More than 38.5	High Fever

Code:

```
#include<iostream>
using namespace std;
int main(){
    float temp = 0.00;
    cout << "Enter your body temperature: ";
    cin >> temp;
    if(temp<36.5){
        cout << "You are diagnosed with Hypothemia."<<endl;
    }
    else if(temp>=36.5 && temp<=37.5){
        cout << "You temperature is Normal."<<endl;
    }
    else if(temp>=37.6 && temp<=38.5){
        cout << "You are diagnosed with Low Grade Fever."<<endl;
    }
    else{
        cout << "You are diagnosed with High Fever."<<endl;
    }
}
```

Output:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

Enter your body temperature: 23
You are diagnosed with Hypothemia.
PS D:\Hasan\cpp\lab03> g++ task04.cpp
PS D:\Hasan\cpp\lab03> ./a.exe
Enter your body temperature: 87
You are diagnosed with High Fever.
PS D:\Hasan\cpp\lab03>
```

Task 05:

Imagine you are developing a program for a small business that sells handmade crafts. The owner recently bought a beautiful vase at a cost price (CPrice) and is trying to sell it at a selling price (SPrice). Your task is to create a program that will help the owner determine whether they made a profit, or incurred a loss.

Task Requirements:

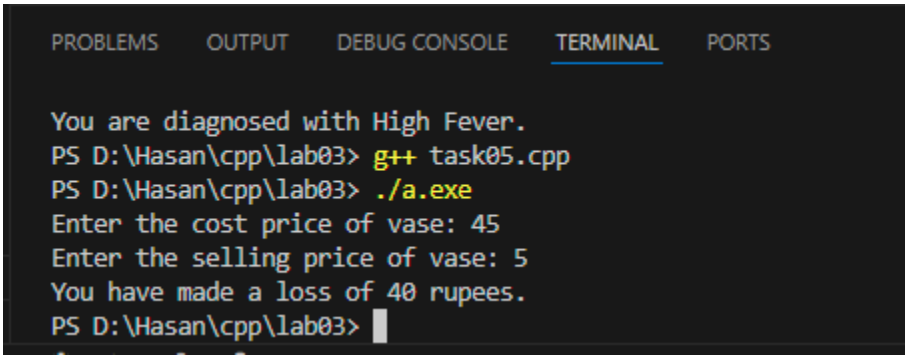
a) Prompt the user to enter the Cost Price (CPrice) of the vase.
b) Prompt the user to enter the Selling Price (SPrice) of the vase.
Profit Calculation:
Profit = SPrice – Cprice

c) Print a message displaying the profit amount to the user.
Loss Calculation:
Loss = CPrice – Sprice
d) Print a message displaying the loss amount to the user.
e) If CPrice is equal to SPrice, output a message indicating that there is no profit or loss.

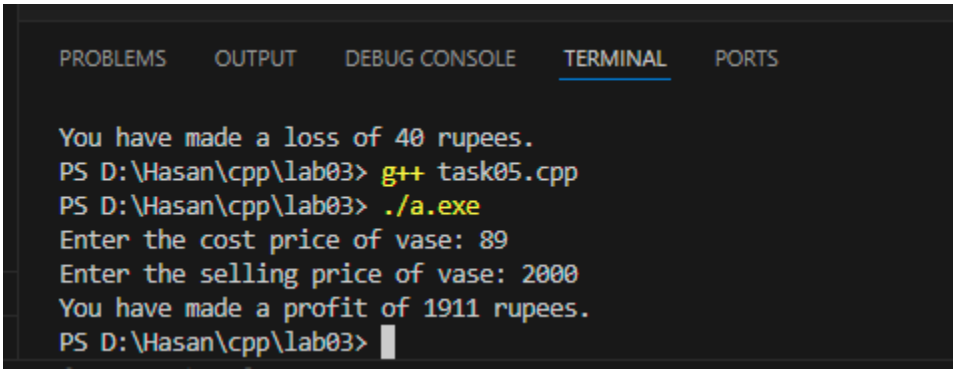
Code:

```
#include<iostream>
using namespace std;
int main(){
    int cp = 0, sp = 0; // cp -> cost price & sp -> selling proce
    cout << "Enter the cost price of vase: ";
    cin >> cp;
    cout << "Enter the selling price of vase: ";
    cin >> sp;
    if(sp>cp){
        int profit = 0;
        profit = sp-cp;
        cout << "You have made a profit of "<<profit<<" rupees."<<endl;
    }
    else if(cp>sp){
        int loss = 0;
        loss = cp-sp;
        cout << "You have made a loss of "<<loss<<" rupees."<<endl;
    }
    else{
        cout << "Selling price is same as cost price."<<endl;
    }
}
```

Output 1:



Output 2:



Task 06:

Write a C++ program that takes a digit (0-9) as input from the user and print its spelling using a switch statement.

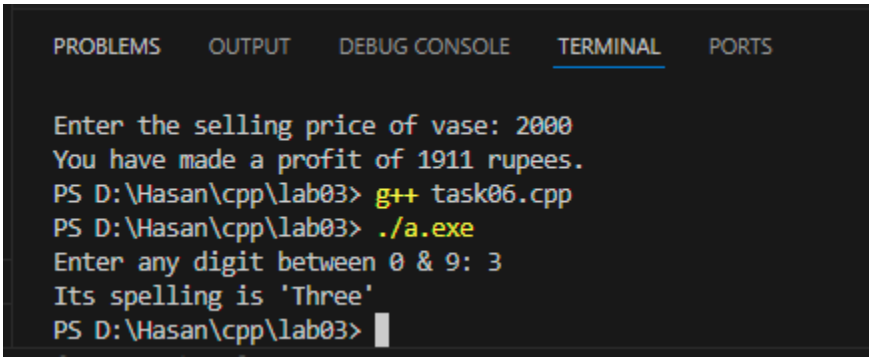
Code:

```
#include<iostream>
using namespace std;
int main(){
    int dig = 0;
    cout << "Enter any digit between 0 & 9: ";
    cin >> dig;
    switch(dig){
        case 0:
        cout << "Its spelling is \'Zero\'"<<endl;
        break;
        case 1:
        cout << "Its spelling is \'One\'"<<endl;
        break;
        case 2:
        cout << "Its spelling is \'Two\'"<<endl;
        break;
        case 3:
        cout << "Its spelling is \'Three\'"<<endl;
        break;
        case 4:
        cout << "Its spelling is \'Four\'"<<endl;
        break;
        case 5:
        cout << "Its spelling is \'Five\'"<<endl;
        break;
        case 6:
        cout << "Its spelling is \'Six\'"<<endl;
        break;
        case 7:
        cout << "Its spelling is \'Seven\'"<<endl;
        break;
        case 8:
        cout << "Its spelling is \'Eight\'"<<endl;
        break;
        case 9:
        cout << "Its spelling is \'Nine\'"<<endl;
        break;
```

```
        default:
        cout << "Invalid input!"<<endl;
        break;
    }

}
```

Output 1:



Output 2: