

Fundamentals of programming

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ME-15 (A)

1. Task 1

```
int x;

cout<<"To display the population of punjab, press 1."<<endl;
cout<<"To display the population of sindh, press 2."<<endl;
cout<<"To display the population of KPK, press 3."<<endl;
cout<<"To display the population of Balochistan, press 4."<<endl;

cin>>x;

switch (x)    {

    case 1:cout<<"The population of Punjab is 116,827,125.";

    break;

    case 2:cout<<"The population of Sindh is 54,858,515.";

    break;

    case 3:cout<<"The population of KPK is 39,372,462.";

    break;

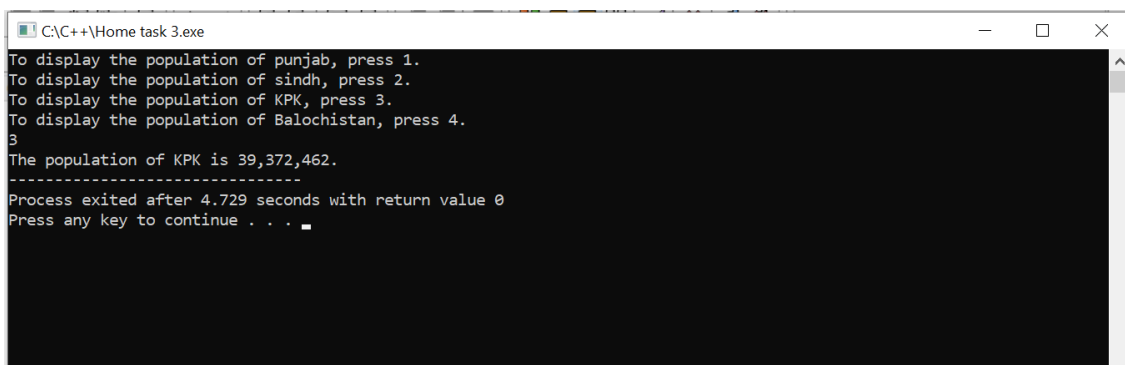
    case 4:cout<<"The population of Balochistan is 20,094,659.";

    break;

    default:cout<<"Invalid input.";

}

end of task 1
```



```
C:\C++\Home task 3.exe
To display the population of punjab, press 1.
To display the population of sindh, press 2.
To display the population of KPK, press 3.
To display the population of Balochistan, press 4.
3
The population of KPK is 39,372,462.
-----
Process exited after 4.729 seconds with return value 0
Press any key to continue . . .
```

2. Task 2

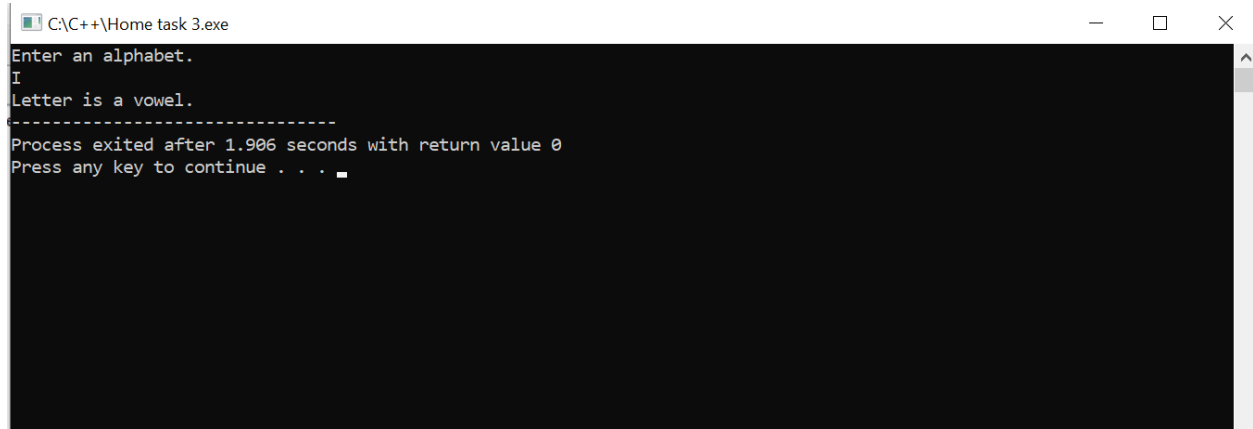
```
char letter;

cout<<"Enter an alphabet."<<endl;

cin>>letter;

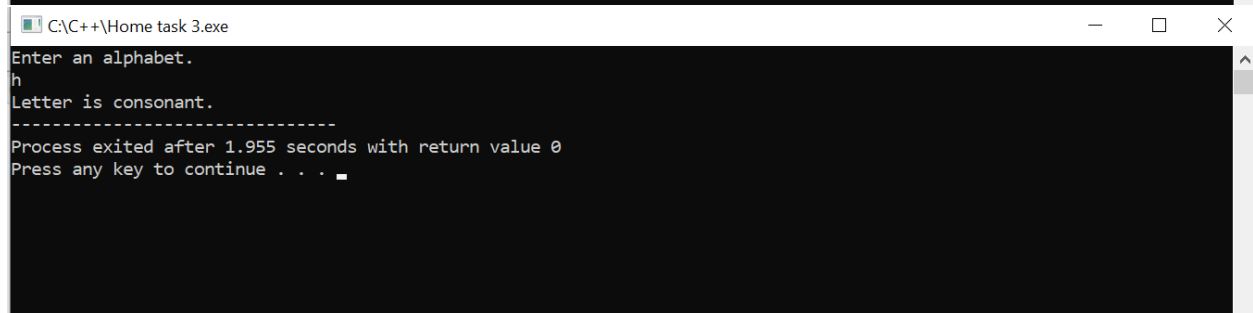
if    ((letter>='a'&& letter<='z') || (letter>='A'&& letter<='Z'))    {
    switch (letter) {
        case 'a' : cout<<"Letter is a vowel.";
        break;
        case 'e' : cout<<"Letter is a vowel.";
        break;
        case 'i' : cout<<"Letter is a vowel.";
        break;
        case 'o' : cout<<"Letter is a vowel.";
        break;
        case 'u' : cout<<"Letter is a vowel.";
        break;
        case 'A' : cout<<"Letter is a vowel.";
        break;
        case 'E' : cout<<"Letter is a vowel.";
        break;
        case 'I' : cout<<"Letter is a vowel.";
        break;
        case 'O' : cout<<"Letter is a vowel.";
        break;
        case 'U' : cout<<"Letter is a vowel.";
        break;
        default:cout<<"Letter is consonant.";
        break;
    }
}
```

```
}  
  
else {  
  
    cout<<"Character entered is not an alphabet."  
  
}
```



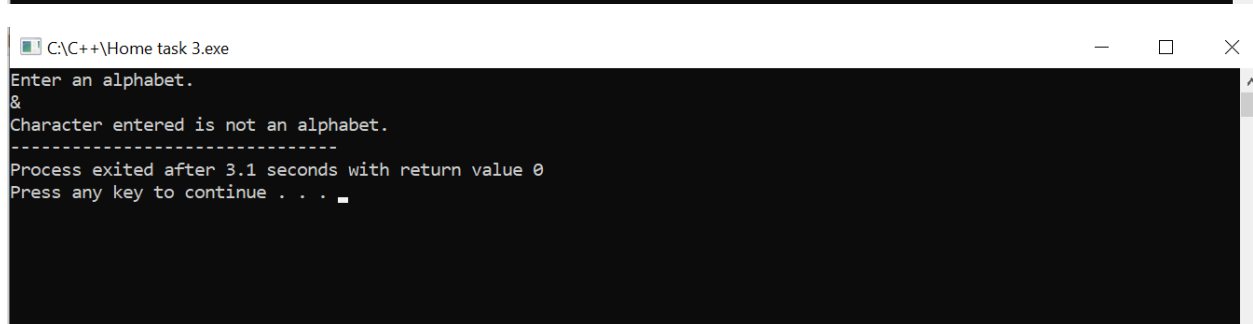
C:\C++\Home task 3.exe

```
Enter an alphabet.  
I  
Letter is a vowel.  
-----  
Process exited after 1.906 seconds with return value 0  
Press any key to continue . . .
```



C:\C++\Home task 3.exe

```
Enter an alphabet.  
h  
Letter is consonant.  
-----  
Process exited after 1.955 seconds with return value 0  
Press any key to continue . . .
```



C:\C++\Home task 3.exe

```
Enter an alphabet.  
&  
Character entered is not an alphabet.  
-----  
Process exited after 3.1 seconds with return value 0  
Press any key to continue . . .
```

3. Task 3

```
int num,flag;

cout<<"Enter a number."<<endl;

cin>>num;

if      (num<0)      {
    flag=1;
}

else if (num==0)     {
    flag=0;
}

else {
    flag=2;
}

switch (flag)  {
    case 0:cout<<"The number is 0.";
    break;
    case 1:cout<<"The number is negative.";
    break;
    case 2:cout<<"The number is positive.";
    break;
    default:
    break;
}
```

```
C:\C++\Home task 3.exe
Enter a number.
4
The number is positive.
-----
Process exited after 8.815 seconds with return value 0
Press any key to continue . . .
```

```
C:\C++\Home task 3.exe
Enter a number.
0
The number is 0.
-----
Process exited after 1.743 seconds with return value 0
Press any key to continue . . .
```

```
C:\C++\Home task 3.exe
Enter a number.
-56
The number is negative.
-----
Process exited after 2.369 seconds with return value 0
Press any key to continue . . .
```

4. Task 4

```
int age;

cout<<"Enter the age of the individual."<<endl;

cin>>age;

if (age<=0 || age>120) {
    cout<<"Invalid input.";
}

else {
    if (age>0 && age<=12) {
        cout<<"The person is a child.";
    }
    else {
        if (age>12 && age<=19){
            cout<<"The person is a teenager.";
        }
        else {
            cout<<"The person is an adult.";
        }
    }
}
```

C:\C++\Home task 3.exe

```
Enter the age of the individual.  
-6  
Invalid input.  
-----  
Process exited after 3.47 seconds with return value 0  
Press any key to continue . . .
```

C:\C++\Home task 3.exe

```
Enter the age of the individual.  
5  
The person is a child.  
-----  
Process exited after 1.589 seconds with return value 0  
Press any key to continue . . .
```

C:\C++\Home task 3.exe

```
Enter the age of the individual.  
15  
The person is a teenager.  
-----  
Process exited after 1.199 seconds with return value 0  
Press any key to continue . . .
```

C:\C++\Home task 3.exe

```
Enter the age of the individual.  
56  
The person is an adult.  
-----  
Process exited after 3.055 seconds with return value 0  
Press any key to continue . . .
```


5. Task 5

```
int num1,num2,num3;

cout<<"Enter 3 numbers."<<endl;

cin>>num1>>num2>>num3;

if (num1==num2 && num2==num3)    {
    cout<<"All numbers equal.";
}

else{
    if (num1==num3)    {
        if (num1>num2)    {
            cout<<"The first and third number "<<num1<<" are the greatest.";
        }
    }
    else {
        if (num1==num2 && num1>num3)    {
            cout<<"The first and second number, "<<num1<<" are the
greatest.";
        }
        else    {
            if (num2==num3 && num2>num1)    {
                cout<<"The second and third number, "<<num2<<" are the
greatest.";
            }

            else {
                if (num1>num2)    {
                    if (num1>num3)    {
                        cout<<"The first number, "<<num1<<" is the
greatest.";
                    }
                }
            }
        }
    }
}
```

```

    }
    else {
        if (num2>num3) {
            cout<<"The second number, "<<num2<<" is
the greatest.";
        }
        else{
            cout<<"The third number, "<<num3<<" is the
greatest.";
        }
    }
}
}
}

```

C:\C++\Home task 3.exe

Enter 3 numbers.

5

4

3

The first number, 5 is the greatest.

Process exited after 2.103 seconds with return value 0

Press any key to continue . . .

C:\C++\Home task 3.exe

Enter 3 numbers.

4

4

4

All numbers equal.

Process exited after 2.252 seconds with return value 0

Press any key to continue . . .

C:\C++\Home task 3.exe

Enter 3 numbers.

5

1

5

The first and third number 5 are the greatest.

Process exited after 2.673 seconds with return value 0

Press any key to continue . . .

6. Task 6

```
char letter;


cout<<"Enter an alphabet."<<endl;

cin>> letter;

if ((letter <'a' || letter >'z') && (letter <'A' || letter >'Z'))    {
    cout<<"Invalid input."<<endl;
}

else    {
    if (letter == 'a' || letter == 'e' || letter == 'i' || letter == 'o' || letter == 'u')    {
        cout<<"The letter is a lower case vowel.";
    }
    else {
        if (letter == 'A' || letter == 'E' || letter == 'I' || letter == 'O' || letter == 'U')
        {
            cout<<"The letter is an upper case vowel.";
        }
        else {
            cout<<"The letter is a consonant.";
        }
    }
}

}
```

 C:\C++\Home task 3.exe


Enter an alphabet.

j

The letter is a consonant.

Process exited after 2.269 seconds with return value 0

Press any key to continue . . .

 C:\C++\Home task 3.exe


Enter an alphabet.

a

The letter is a lower case vowel.

Process exited after 1.736 seconds with return value 0

Press any key to continue . . .

 C:\C++\Home task 3.exe

Enter an alphabet.

?

Invalid input.

Process exited after 3.708 seconds with return value 0

Press any key to continue . . .