

Programming Fundamental

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Assignment

Task # 1

```
# include <iostream>
using namespace std;
int main () {
    char ch;
    cout << "Enter any character: ";
    cin >> ch;
    if (ch == 'a' || ch == 'A')
        cout << ch << " is a vowel" << endl;
    else if (ch == 'e' || ch == 'E')
        cout << ch << " is a vowel" << endl;
    else if (ch == 'i' || ch == 'I' || ch == 'o' || ch == 'O'
              || ch == 'U' || ch == 'u')
        cout << ch << " is a vowel" << endl;
    else
        cout << ch << " is not a vowel" << endl;
    return 0;
}
```

Coding C++

RUN MENU

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```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     char ch;
6
7     cout << "Enter any character: ";
8     cin >> ch;
9
10    if (ch == 'a' || ch == 'A')
11        cout << ch << " is a vowel" << endl;
12
13    else if (ch == 'e' || ch == 'E')
14        cout << ch << " is a vowel" << endl;
15
16    else if (ch == 'i' || ch == 'I' || ch == 'o' || ch == 'O' || ch == 'U' || ch == 'u')
17        cout << ch << " is a vowel" << endl;
18
19    else
20        cout << ch << " is not a vowel" << endl;
21
22    return 0;
23 }
```

+ - ! \$ [] " ()
| ^ . # % < >

Compile Result

Enter any character: A
A is a vowel

[Process completed - press Enter]

Task # 2

#include <iostream>

using namespace std;

int main () {

int temp;

cout << temp << "Input anytemp" ;

cin >> temp;

if (temp \geq 35)

cout << temp << "it is hot day" << endl;

else if (temp \neq 25 & temp \leq 35)

cout << temp << "it is a pleasant day" << endl;

else

cout << temp << "it is a cool day" << endl;

return 0;

}

Project Execute Tools CVS Window Help

Untitled1.cpp

```
#include<iostream>
using namespace std;
int main ()
{
    int temp;
    cout <<temp<<"Input temp";
    cin>> temp;

    if (temp>= 35)
        cout <<temp<<"it is hot day"<<endl;
    else if (temp>=25&&temp<=35)
        cout <<temp<<"it is a pleasant day"<<endl;
    else
        cout <<temp<<"it is a cool day"<<endl;
    return 0;
}
```

C:\Users\Riphah.DESKTOP-CS0Q8ND\Desktop\Untitled4.cpp - [Executing] - Dev-C++ 5.6.1

C:\Users\Riphah.DESKTOP-CS X + -

0Input temp45
45it is hot day

Process exited with return value 0
Press any key to continue . . .

Task 3 :-

```
# include <iostream>
using namespace std;
int main () {
    char grade;
    cout << "Enter your grade: ";
    cin >> grade;
    switch (grade) {
        case 'A' case: break;
        case 'B' case: break;
        case 'C' case: break;
        case 'D' case: break;
        case 'F' case: break;
        default: cout << "Score is below 60" << endl;
    }
}
```

Untitled1.cpp Untitled2.cpp Untitled3.cpp

```
1 #include<iostream>
2 using namespace std;
3 int main ()
4 {
5     char grade;
6     cout<<"Input your grade:";
7     cin>> grade;
8     switch (grade)
9     {
10         case 'a' : case 'A':
11             cout<<"score is >=90"<<endl;
12             break;
13         case 'b':case 'B' :
14             cout<<"score is 80-89"<<endl;
15             break;
16         case 'c' :case 'C':
17             cout<<"score is 70-79"<<endl;
18             break;
19         case 'd' : case 'D':
20             cout<<"score is 60-69"<<endl;
21             break;
22         case 'f' :case 'F':
23             cout<<"score is below 60"<<endl;
24             break;
25 }
```

ls)
Untitled1.cpp Untitled2.cpp Untitled3.cpp

```
1 #include<iostream>
2 using namespace std;
```

C:\Users\Riphah.DESKTOP-CS

**Input your grade:B
score is 80-89**

**Process exited with return value 0
Press any key to continue . . . |**

Task 4

(Q1) #include <iostream>

include < math >

using namespace std;

int main() {

int choice;

float num1, num2;

do {

cout << "n == Simple Calculator -- \n";

cout << "1. Addition of two integers\n";

cout << "2. Subtraction of two integers\n";

cout << "3. Multiplication of two integers\n";

cout << "4. Division of two integers\n";

cout << "5. Addition of two floating numbers\n";

cout << "6. Subtraction of two floating numbers\n";

cout << "7. Multiplication of two floating numbers\n";

cout << "8. Division of two floating numbers\n";

cout << "9. Sine \n";

cout << "10. Cosine \n";

cout << "11. Tangent \n";

cout << "12. Square root \n";

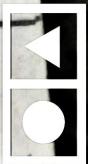
cout << "13. Square \n";

cout << "14. Cube \n";

cout << "15. Exit \n";

cout << "Enter your choice (1-15):";

cin >> choice;



```
switch (choice) {
```

```
    case 1: cout << "Enter two integers: ";
              cin >> num1 >> num2;
              cout << "Result = " << (int)num1 + (int)num2 << endl;
              break;
```

```
    case 2: cout << "Enter two integers: ";
              cin >> num1 >> num2;
              cout << "Result = " << (int)num1 - (int)num2 << endl;
              break;
```

```
    case 3: cout << "Enter two integers: ";
              cin >> num1 >> num2;
              cout << "Result = " << (int)num1 * (int)num2 << endl;
              break;
```

```
    case 4: if (int(num2) == 0)
              cout << "Result = " << (int)num1 / (int)num2;
              else cout << "Error: Division by zero!" << endl;
              break;
```

```
    case 5: cout << "Enter two floating numbers: ";
              cin >> num1 >> num2;
              cout << "Result = " << num1 + num2 << endl;
```

```
    case 6: cout << "Enter two floating numbers: ";
              cin >> num1 >> num2;
              cout << "Result = " << num1 - num2 << endl;
              break;
```

```
    case 7: cout << "Enter two floating numbers: ";
              cin >> num1 >> num2;
```

```
              cout << "Result = " << num1 * num2 << endl;
              break;
```

```
    case 8: cout << "Enter two floating numbers: ";
              cin >> num1 >> num2;
```

```
    if (num2 == 0)
        cout << "Result = " << num1 / num2 << endl;
```

```
    else cout << "Error: Division by zero!" << endl;
    break;
```

```
    case 9: cout << "Enter angle in radians: ";
              cin >> num1;
```

```
              cout << "Sine = " << sin(num1) << endl;
              break;
```

```
    case 10: cout << "Enter angle in radians: ";
              cin >> num1;
```

```
              cout << "Cosine = " << cos(num1) << endl;
              break;
```

```
    case 11: cout << "Enter angle in radians: ";
              cin >> num1;
```

```
              cout << "Tangent = " << tan(num1) << endl;
              break;
```

case 12 :

```
cout << "Enter number : ";
cin >> num1;
cout << "Square Root = " << sqrt(num1) << endl;
break;
```

case 13 :

```
cout << "Enter number : ";
cin >> num1;
cout << "Square = " << pow(num1, 2) << endl;
break;
```

case 14 :

```
cout << "Enter number : ";
cin >> num1;
cout << "Cube = " << pow(num1, 3) << endl;
break;
```

case 15 :

```
cout << "Exiting program..." << endl;
break;
```

Default :

```
cout << "Invalid choice! Try again" << endl;
```

```
}
```

```
return 0;
```

```
}
```



Coding C++

RUN MENU

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```
1 #include <iostream>
2 #include <cmath>
3 using namespace std;
4
5 int main() {
6     cout << "====Shan_72387====";
7     int choice;
8     float num1, num2;
9
10    do {
11        cout << "\n===== Simple Calculator =====\n";
12        cout << "1. Addition of two integers\n";
13        cout << "2. Subtraction of two integers\n";
14        cout << "3. Multiplication of two integers\n";
15        cout << "4. Division of two integers\n";
16        cout << "5. Addition of two floating numbers\n";
17        cout << "6. Subtraction of two floating numbers\n";
18        cout << "7. Multiplication of two floating numbers\n";
19        cout << "8. Division of two floating numbers\n";
20        cout << "9. Sine\n";
21        cout << "10. Cosine\n";
22        cout << "11. Tangent\n";
23        cout << "12. Square Root\n";
24        cout << "13. Square\n";
25        cout << "14. Cube\n";
26        cout << "15. Exit\n";
27        cout << "Enter your choice (1-15): ";
28        cin >> choice;
29
30        switch (choice) {
31            case 1:
32                cout << "Enter two integers: ";
33                cin >> num1 >> num2;
34                cout << "Result = " << (int)num1 + (int)num2 << endl;
35                break;
36
37            case 2:
38                cout << "Enter two integers: ";
39                cin >> num1 >> num2;
40                cout << "Result = " << (int)num1 - (int)num2 << endl;
41                break;
42
43            case 3:
44                cout << "Enter two integers: ";
45                cin >> num1 >> num2;
46                cout << "Result = " << (int)num1 * (int)num2 << endl;
47                break;
48
49            case 4:
50                cout << "Enter two integers: ";
51                cin >> num1 >> num2;
52                if ((int)num2 != 0)
53                    cout << "Result = " << (int)num1 / (int)num2 << endl;
54                else
55                    cout << "Error: Division by zero!" << endl;
56                break;
57
58            case 5:
59                cout << "Enter two floating numbers: ";
60                cin >> num1 >> num2;
61                cout << "Result = " << num1 + num2 << endl;
62                break;
63
64            case 6:
65                cout << "Enter two floating numbers: ";
66                cin >> num1 >> num2;
67                cout << "Result = " << num1 - num2 << endl;
68                break;
69        }
70    }
71}
```

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Coding C++

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RUN MENU

```
cout << "Result = " << num1 + num2 << endl;
break;

case 6:
    cout << "Enter two floating numbers: ";
    cin >> num1 >> num2;
    cout << "Result = " << num1 - num2 << endl;
    break;

case 7:
    cout << "Enter two floating numbers: ";
    cin >> num1 >> num2;
    cout << "Result = " << num1 * num2 << endl;
    break;

case 8:
    cout << "Enter two floating numbers: ";
    cin >> num1 >> num2;
    if (num2 != 0)
        cout << "Result = " << num1 / num2 << endl;
    else
        cout << "Error: Division by zero!" << endl;
    break;

case 9:
    cout << "Enter angle in radians: ";
    cin >> num1;
    cout << "Sine = " << sin(num1) << endl;
    break;

case 10:
    cout << "Enter angle in radians: ";
    cin >> num1;
    cout << "Cosine = " << cos(num1) << endl;
    break;

case 11:
    cout << "Enter angle in radians: ";
    cin >> num1;
    cout << "Tangent = " << tan(num1) << endl;
    break;

case 12:
    cout << "Enter number: ";
    cin >> num1;
    cout << "Square Root = " << sqrt(num1) << endl;
    break;

case 13:
    cout << "Enter number: ";
    cin >> num1;
    cout << "Square = " << pow(num1, 2) << endl;
    break;

case 14:
    cout << "Enter number: ";
    cin >> num1;
    cout << "Cube = " << pow(num1, 3) << endl;
    break;

case 15:
    cout << "Exiting program..." << endl;
    break;

default:
    cout << "Invalid choice! Try again." << endl;
}

} while (choice != 15);

return 0;
}
```

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Compile Result

```
====Shan_72387====  
===== Simple Calculator =====  
1. Addition of two integers  
2. Subtraction of two integers  
3. Multiplication of two integers  
4. Division of two integers  
5. Addition of two floating numbers  
6. Subtraction of two floating numbers  
7. Multiplication of two floating numbers  
8. Division of two floating numbers  
9. Sine  
10. Cosine  
11. Tangent  
12. Square Root  
13. Square  
14. Cube  
15. Exit  
Enter your choice (1-15): 10  
Enter angle in radians: 60  
Cosine = -0.952413
```

```
===== Simple Calculator =====  
1. Addition of two integers  
2. Subtraction of two integers  
3. Multiplication of two integers  
4. Division of two integers  
5. Addition of two floating numbers  
6. Subtraction of two floating numbers  
7. Multiplication of two floating numbers  
8. Division of two floating numbers  
9. Sine  
10. Cosine  
11. Tangent  
12. Square Root  
13. Square  
14. Cube  
15. Exit  
Enter your choice (1-15): 14  
Enter number: 20  
Cube = 8000
```

```
===== Simple Calculator =====  
1. Addition of two integers  
2. Subtraction of two integers  
3. Multiplication of two integers  
4. Division of two integers  
5. Addition of two floating numbers  
6. Subtraction of two floating numbers  
7. Multiplication of two floating numbers  
8. Division of two floating numbers  
9. Sine  
10. Cosine  
11. Tangent  
12. Square Root  
13. Square  
14. Cube  
15. Exit
```

1 2 3 4 5 6 7 8 9 0

q w e r t z u i o p

a s d f g h j k l

↑ y x c v b n m ✖

123 ☺ , !? ←

Task 4

Q3)

```
# include <iostream>
using namespace std;
int main () {
    int totalSeconds, hours, minutes, seconds;
    cout << "Enter total seconds:";
    cin >> totalSeconds;
    hours = totalSeconds / 3600;
    totalSeconds = totalSeconds % 3600;
    minutes = totalSeconds / 60;
    seconds = totalSeconds % 60;
```

cout << hours << "hrs" << minutes << "mins"
 << seconds << "sec" << endl;
return 0;
}

Coding C++

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RUN MENU

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int totalSeconds, hours, minutes, seconds;
6     cout<<"Shan_72387=";
7     cout << "Enter total seconds: ";
8     cin >> totalSeconds;
9
10    hours = totalSeconds / 3600;
11    totalSeconds = totalSeconds % 3600;
12    minutes = totalSeconds / 60;
13    seconds = totalSeconds % 60;
14
15    cout << hours << " hrs " << minutes << " mins " << seconds << " secs" << endl;
16
17    return 0;
18 }
```



Compile Result

```
Shan_72387=Enter total seconds: 9887  
2 hrs 44 mins 47 secs
```

```
[Process completed - press Enter]
```

