

# ISLAMIC UNIVERSITY



Department of  
**INFORMATION & COMMUNICATION TECHNOLOGY**  
ISLAMIC UNIVERSITY, BANGLADESH

An Assignment on  
**“Conditional Statements”**

Course Code: ICT-1203

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**Problem 1:** 1. Write a C program to accept two integers and check whether they are equal or not.

### Solution:

#### Code:

```
#include<stdio.h>
int main()
{
    int num1,num2;
    top:
    printf("\n\nEnter number1 & number2 : ");
    scanf("%d %d",&num1,&num2);

    if(num1==num2)
        printf("Number1 and Number2 are equal.\n");
    else
        printf("Number1 and Number2 are Not equal.\n");
    goto top;

    return 0;
}
```

#### Output:

```
C problem1.c X
C problem1.c > main()
1  #include<stdio.h>
2  int main()
3  {
4      int num1,num2;
5      top:
6      printf("\n\nEnter number1 & number2 : ");
7      scanf("%d %d",&num1,&num2);
8
9      if(num1==num2)
10         printf("Number1 and Number2 are equal.\n");
11     else
12         printf("Number1 and Number2 are Not equal.\n");
13     goto top;
14
15     return 0;
16 }
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; i
f ($?) { gcc problem1.c -o problem1 } ; if ($?) { .\problem1 }

Enter number1 & number2 : 15 15
Number1 and Number2 are equal.

Enter number1 & number2 : 
```

**Problem 2:** Write a C program to check whether a given number is even or odd.

### Solution:

#### Code:

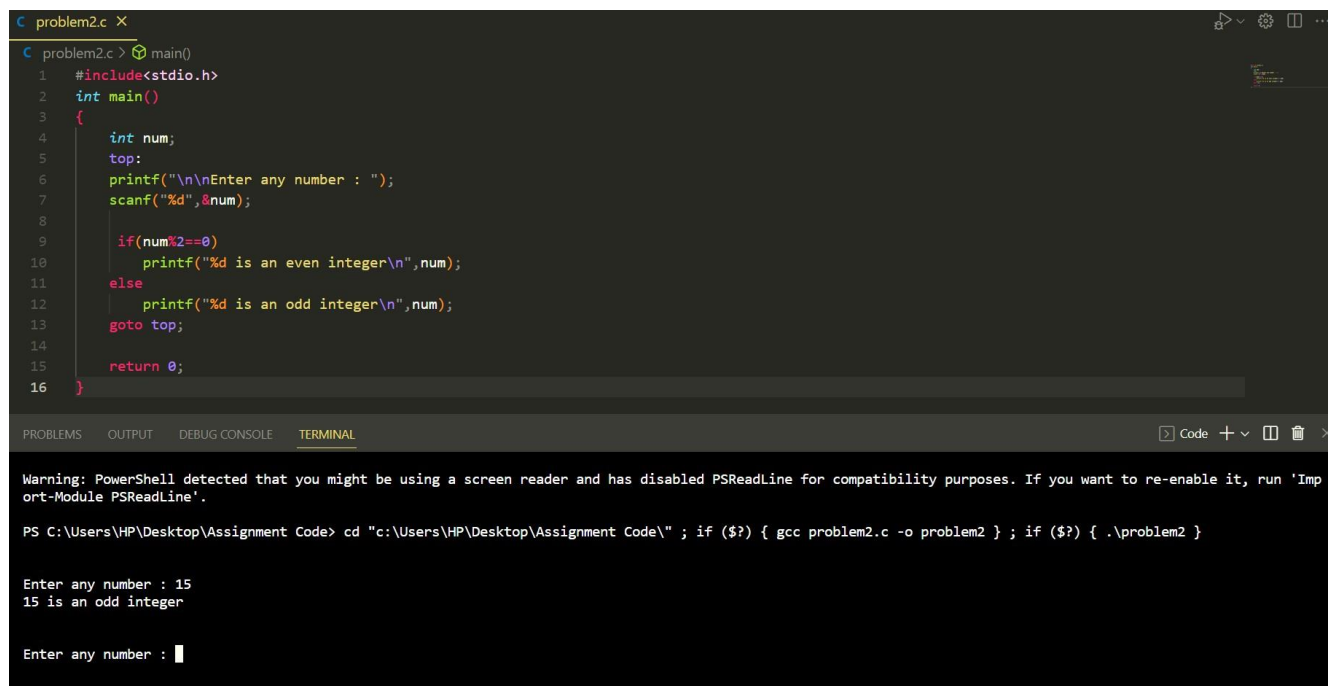
```
#include<stdio.h>

int main()
{
    int num;
top:
    printf("\n\nEnter any number : ");
    scanf("%d",&num);

    if(num%2==0)
        printf("%d is an even integer\n",num);
    else
        printf("%d is an odd integer\n",num);
    goto top;

    return 0;
}
```

#### Output:



The screenshot shows a code editor with the C program from the previous block. Below the editor is a terminal window. The terminal shows the command to compile the program: `gcc problem2.c -o problem2`. It then shows the program being run, which prompts for a number. The user enters 15, and the program outputs "15 is an odd integer". The terminal also shows a warning about PowerShell and PSReadLine.

```
C problem2.c X
C problem2.c > main()
1 #include<stdio.h>
2 int main()
3 {
4     int num;
5     top:
6     printf("\n\nEnter any number : ");
7     scanf("%d",&num);
8
9     if(num%2==0)
10        printf("%d is an even integer\n",num);
11    else
12        printf("%d is an odd integer\n",num);
13    goto top;
14
15    return 0;
16 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.
PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if ($?) { gcc problem2.c -o problem2 } ; if ($?) { .\problem2 }

Enter any number : 15
15 is an odd integer

Enter any number : █
```

**Problem 3:** Write a C program to check whether a given number is positive or negative.

### Solution:

#### Code:

```
#include<stdio.h>
int main()
{
    int num;
top:
    printf("\n\nEnter any number : ");
    scanf("%d",&num);

    if(num>0)
        printf("%d is a positive number\n",num);
    else if(num<0)
        printf("%d is a negative number\n",num);

    goto top;

    return 0;
}
```

#### Output:



The screenshot shows a code editor with a C program and its execution output. The code is as follows:

```
1 #include<stdio.h>
2 int main()
3 {
4     int num;
5     top:
6     printf("\n\nEnter any number : ");
7     scanf("%d",&num);
8
9     if(num>0)
10        printf("%d is a positive number\n",num);
11    else if(num<0)
12        printf("%d is a negative number\n",num);
13
14    goto top;
15
16    return 0;
17 }
```

The terminal output shows the program being compiled and executed:

```
PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if ($?) { gcc problem3.c -o problem3 } ; if ($?) { .\problem3 }

Enter any number : 15
15 is a positive number
```

**Problem 4:** Write a C program to find whether a given year is a leap year or not.

### Solution:

#### Code:

```
#include<stdio.h>
int main()
{
    int year;
top:
    printf("\n\nEnter Year : ");
    scanf("%d",&year);

    if((year%400==0) || (year%100!=0 && year%4==0))
        printf("%d is a leap year\n",year);
    else
        printf("%d is Not a leap year\n",year);
    goto top;
    return 0;
}
```

#### Output:

```
C problem4.c X
C problem4.c > main()
1  #include<stdio.h>
2  int main()
3  {
4      int year;
5      top:
6      printf("\n\nEnter Year : ");
7      scanf("%d",&year);
8
9      if((year%400==0) || (year%100!=0 && year%4==0))
10         printf("%d is a leap year\n",year);
11     else
12         printf("%d is Not a leap year\n",year);
13     goto top;
14     return 0;
15 }
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. ort-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if (\$?) { gcc problem4.c -o problem4 } ;

Enter Year : 2016  
2016 is a leap year

**Problem 5:** Write a C program to read the age of a candidate and determine whether it is eligible for casting his/her own vote.

### Solution:

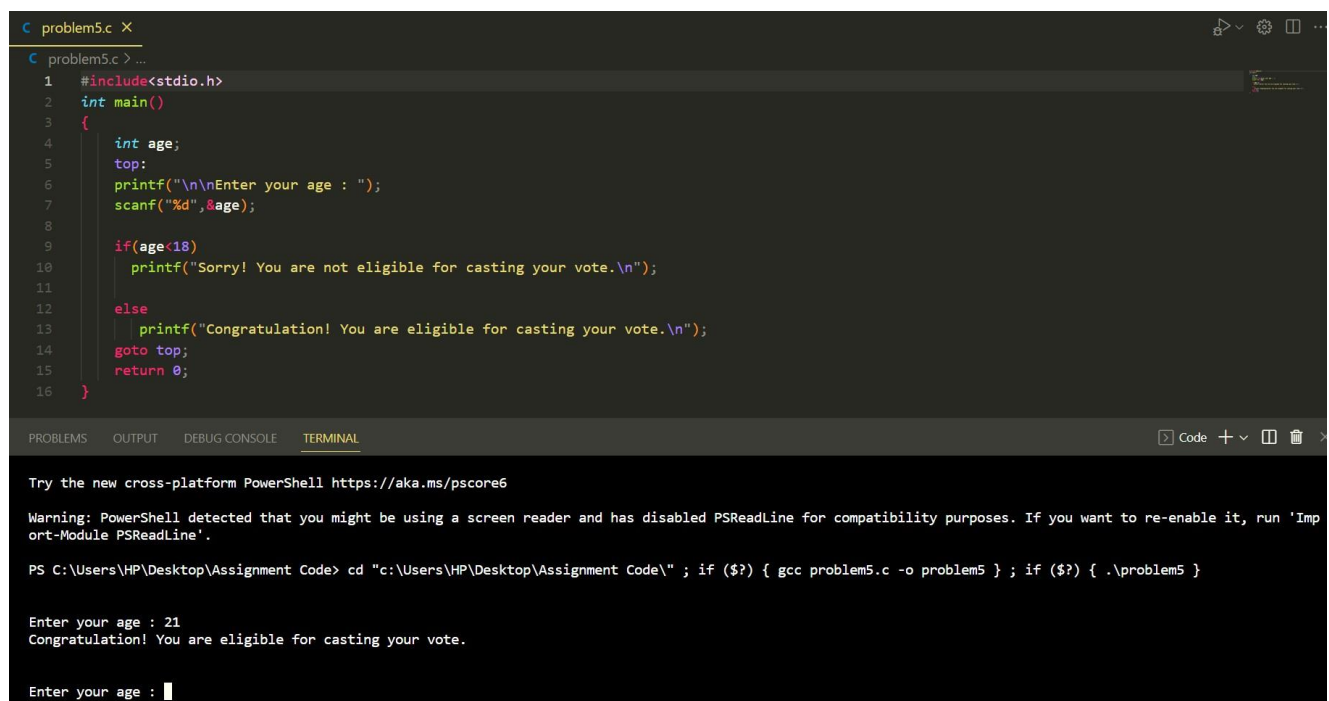
#### Code:

```
#include<stdio.h>
int main()
{
    int age;
top:
    printf("\n\nEnter your age : ");
    scanf("%d",&age);

    if(age<18)
        printf("Sorry! You are not eligible for casting your vote.\n");

    else
        printf("Congratulation! You are eligible for casting your vote.\n");
    goto top;
    return 0;
}
```

#### Output:



The screenshot shows a code editor window titled "problem5.c" with the C program code. Below the editor is a terminal window. The terminal output shows the program being compiled and executed. The user enters the age 21, and the program outputs "Congratulation! You are eligible for casting your vote." followed by a prompt for the age.

```
C problem5.c X
C problem5.c > ...
1  #include<stdio.h>
2  int main()
3  {
4      int age;
5      top:
6      printf("\n\nEnter your age : ");
7      scanf("%d",&age);
8
9      if(age<18)
10         printf("Sorry! You are not eligible for casting your vote.\n");
11
12     else
13         printf("Congratulation! You are eligible for casting your vote.\n");
14     goto top;
15     return 0;
16 }

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
Try the new cross-platform PowerShell https://aka.ms/pscore6
Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.
PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if ($?) { gcc problem5.c -o problem5 } ; if ($?) { .\problem5 }

Enter your age : 21
Congratulation! You are eligible for casting your vote.

Enter your age : 
```

**Problem 6:** Write a C program to read the value of an integer m and display the value of n is 1 when m is larger than 0, 0 when m is 0 and -1 when m is less than 0.

### Solution:

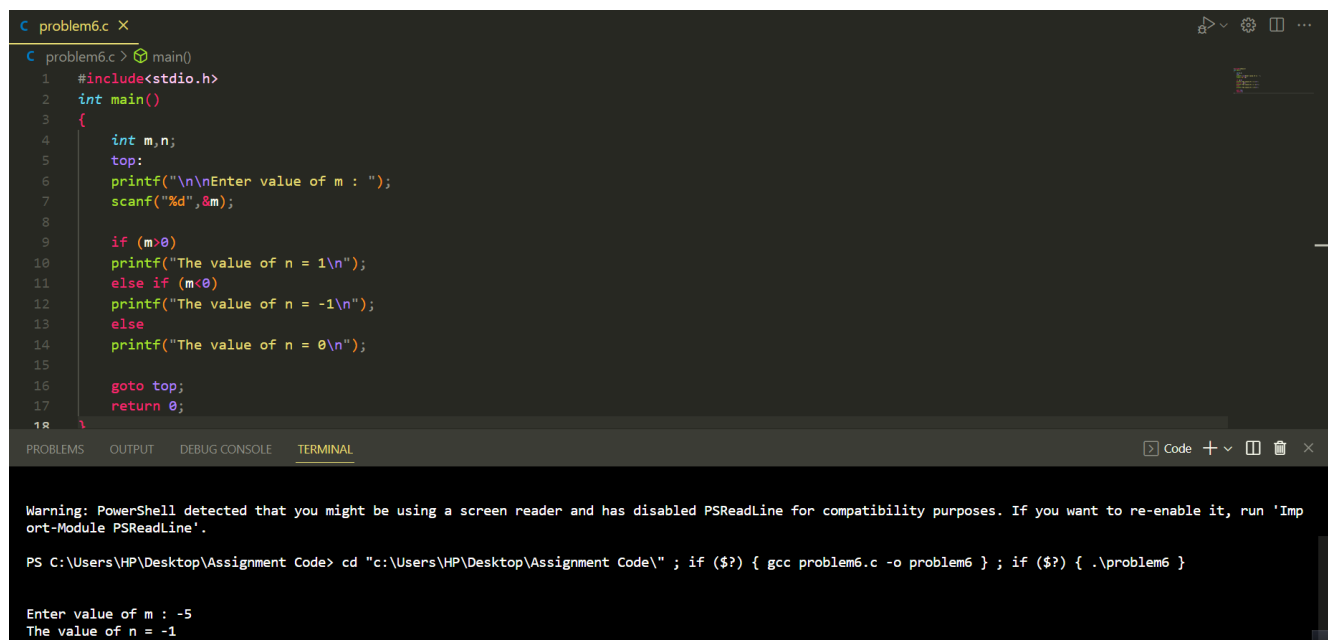
#### Code:

```
#include<stdio.h>
int main()
{
    int m,n;
top:
    printf("\n\nEnter value of m : ");
    scanf("%d",&m);

    if (m>0)
        printf("The value of n = 1\n");
    else if (m<0)
        printf("The value of n = -1\n");
    else
        printf("The value of n = 0\n");

    goto top;
    return 0;
}
```

#### Output:



The screenshot shows a Visual Studio Code editor window with a C program named 'problem6.c' open. The code is identical to the one provided in the 'Code' section. Below the editor, the 'TERMINAL' tab is active, showing the command prompt output. The user has entered '-5' for the value of m, and the program has printed 'The value of n = -1'. The terminal also shows a warning about PowerShell's PSReadLine module and the command used to compile the program: 'gcc problem6.c -o problem6'.

```
C problem6.c X
C problem6.c > main()
1  #include<stdio.h>
2  int main()
3  {
4      int m,n;
5      top:
6      printf("\n\nEnter value of m : ");
7      scanf("%d",&m);
8
9      if (m>0)
10         printf("The value of n = 1\n");
11     else if (m<0)
12         printf("The value of n = -1\n");
13     else
14         printf("The value of n = 0\n");
15
16     goto top;
17     return 0;
18 }

Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if ($?) { gcc problem6.c -o problem6 } ; if ($?) { .\problem6 }

Enter value of m : -5
The value of n = -1
```

**Problem 7:** Write a C program to accept the height of a person in centimeter and categorize the person according to their height.

### Solution:

### Code:

```
/*7. Write a C program to accept the height of a person in centimeter and
categorize the person according to their height.*/
#include<stdio.h>
int main()
{
    int height;
top:
    printf("\n\nEnter your height in centimeter : ");
    scanf("%d",&height);

    if(height<148)
        printf("The person is Dwarf.\n");
    else if(height >=148 && height<187)
        printf("The person is Normal(Average).\n");
    else if(height>=187)
        printf("The person is Tall.\n");
    goto top;
    return 0;
}
```

### Output:



```
C problem7.c X
C problem7.c > main()
5 {
6     int height;
7     top:
8     printf("\n\nEnter your height in centimeter : ");
9     scanf("%d",&height);
10
11     if(height<148)
12         printf("The person is Dwarf.\n");
13     else if(height >=148 && height<187)
14         printf("The person is Normal(Average).\n");
15     else if(height>=187)
16         printf("The person is Tall.\n");
17     goto top;
18     return 0;
19 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if ($?) { gcc problem7.c -o problem7 } ; if ($?) { .\problem7 }

Enter your height in centimeter : 135
The person is Dwarf.

Enter your height in centimeter : 
```



**Problem 8:** 8. Write a C program to find the largest of three numbers.

**Solution:**

**Code:**

```
// 8. Write a C program to find the Largest of three numbers.
#include<stdio.h>
int main()
{
    int num1,num2,num3;
    top:
    printf("\n\nEnter three number : ");
    scanf("%d %d %d",&num1,&num2,&num3);

    if(num1>num2 && num1>num3)
    {
        printf("1st Number = %d,\t2nd Number = %d,\t3rd Number = %d\n",num1,num2,num3);
        printf("The 1st Number is the greatest among three");
    }
    else if(num2>num1 && num2>num3)
    {
        printf("1st Number = %d,\t2nd Number = %d,\t3rd Number = %d\n",num1,num2,num3);
        printf("The 2nd Number is the greatest among three");
    }
    else
    {
        printf("1st Number = %d,\t2nd Number = %d,\t3rd Number = %d\n",num1,num2,num3);
        printf("The 3rd Number is the greatest among three");
    }

    goto top;
    return 0;
}
```

**Output:**

```

C problem8.c x
C problem8.c > ...
1 // 8. Write a C program to find the Largest of three numbers.
2 #include<stdio.h>
3 int main()
4 {
5     int num1,num2,num3;
6     top:
7     printf("\n\nEnter three number : ");
8     scanf("%d %d %d",&num1,&num2,&num3);
9
10    if(num1>num2 && num1>num3)
11    {
12        printf("1st Number = %d,\t2nd Number = %d,\t3rd Number = %d\n",num1,num2,num3);
13        printf("The 1st Number is the greatest among three");
14    }
15    else if(num2>num1 && num2>num3)
16    {
17        printf("1st Number = %d,\t2nd Number = %d,\t3rd Number = %d\n",num1,num2,num3);
18        printf("The 2nd Number is the greatest among three");
19    }
20
21    return 0;
22 }

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if (\$?) { gcc problem8.c -o problem8 } ; if (\$?) { .\problem8 }

Enter three number : 12 25 52  
1st Number = 12, 2nd Number = 25, 3rd Number = 52  
The 3rd Number is the greatest among three

Enter three number :

**Problem 9:** Write a C program to accept a coordinate point in a XY coordinate system and determine in which quadrant the coordinate point lies.

**Solution:****Code:**

```

// 9. Write a C program to accept a coordinate point in a XY coordinate system and
// determine in which quadrant the coordinate point lies.
#include<stdio.h>
int main()
{
    int X,Y;
    top:
    printf("\n\nEnter the value of X and Y : ");
    scanf("%d %d",&X,&Y);
    printf("Test Data : %d %d\n",X,Y);

    if (X>0 && Y>0)
        printf("The coordinate point (%d,%d) lies in the First quadrant.\n",X,Y);
    else if (X<0 && Y>0)
        printf("The coordinate point (%d,%d) lies in the Second quadrant.\n",X,Y);
}

```

```

else if (X<0 && Y<0)
    printf("The coordinate point (%d,%d) lies in the Third quadrant.\n",X,Y);
else if (X>0 && Y<0)
    printf("The coordinate point (%d,%d) lies in the Fourth quadrant.\n",X,Y);
else if ((X>0 && Y==0) || (X<0 && Y==0))
    printf("The coordinate point (%d,%d) lies in the X axis.\n",X,Y);
else if ((Y>0 && X==0) || (Y<0 && X==0))
    printf("The coordinate point (%d,%d) lies in the Y axis.\n",X,Y);
else if (X==0 && Y==0)
    printf("The coordinate point (%d,%d) lies in the Origin.\n",X,Y);

goto top;
return 0;
}

```

## Output:

```

C problem9.c X
C problem9.c > main()
13     printf("The coordinate point (%d,%d) lies in the First quadrant.\n",X,Y);
14     else if (X<0 && Y>0)
15         printf("The coordinate point (%d,%d) lies in the Second quadrant.\n",X,Y);
16     else if (X<0 && Y<0)
17         printf("The coordinate point (%d,%d) lies in the Third quadrant.\n",X,Y);
18     else if (X>0 && Y<0)
19         printf("The coordinate point (%d,%d) lies in the Fourth quadrant.\n",X,Y);
20     else if ((X>0 && Y==0) || (X<0 && Y==0))
21         printf("The coordinate point (%d,%d) lies in the X axis.\n",X,Y);
22     else if ((Y>0 && X==0) || (Y<0 && X==0))
23         printf("The coordinate point (%d,%d) lies in the Y axis.\n",X,Y);
24     else if (X==0 && Y==0)
25         printf("The coordinate point (%d,%d) lies in the Origin.\n",X,Y);
26
27     goto top;
28     return 0;
29 }

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if (\$?) { gcc problem9.c -o problem9 } ; if (\$?) { .\problem9 }

Enter the value of X and Y : 7 9  
Test Data : 7 9  
The coordinate point (7,9) lies in the First quadrant.

Enter the value of X and Y :

**Problem 10:** Write a C program to find the eligibility of admission for a professional course based on the following criteria: -----\*\* Eligibility Criteria : Marks in Maths  $\geq 65$  and Marks in Phy  $\geq 55$  and Marks in Chem  $\geq 50$  and Total in all three subject  $\geq 190$  or Total in Maths and Physics  $\geq 140$ .

### Solution:

#### Code:

```
#include<stdio.h>
int main()
{
    int math,phy,che;
    int total_MPC; //MPC=math + phy + Chy
    int total_MP; // MP = math + phy
    printf("\n\nInput the marks obtained in Physics :");
    scanf("%d",&phy);
    printf("Input the marks obtained in Chemistry :");
    scanf("%d",&che);
    printf("Input the marks obtained in Mathematics :");
    scanf("%d",&math);
    total_MPC = math+phy+che;
    total_MP = math+phy;

    printf("Total marks of Maths, Physics and Chemistry :%d\nTotal marks of Maths and
Physics : %d\n\n",total_MPC,total_MP);

    if((math>=65 && phy>=55 && che>=50 && total_MPC>=190) || total_MP>=140)
        printf("The candidate is eligible for admission.\n\n");
    else
        printf("The candidate is not eligible for admission.\n");

    return 0;
}
```

**Output:**

```

C problem10.c X
C problem10.c > main()
10 scanf("%d",&phy);
11 printf("Input the marks obtained in Chemistry :");
12 scanf("%d",&che);
13 printf("Input the marks obtained in Mathematics :");
14 scanf("%d",&math);
15 total_MPC = math+phy+che;
16 total_MP = math+phy;
17
18 printf("Total marks of Maths, Physics and Chemistry :%d\nTotal marks of Maths and Physics : %d\n\n",total_MPC,total_MP);
19
20 if((math>=65 && phy>=55 && che>=50 && total_MPC>=190) || total_MP>=140)
21     printf("The candidate is eligible for admission.\n\n");
22 else
23     printf("The candidate is not eligible for admission.\n");
24
25 return 0;
26 }

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if ($?) { gcc problem10.c -o problem10 } ; if ($?) { .\problem10 }

Input the marks obtained in Physics :65
Input the marks obtained in Chemistry :51
Input the marks obtained in Mathematics :72
Total marks of Maths, Physics and Chemistry :188
Total marks of Maths and Physics : 137

The candidate is not eligible for admission.
PS C:\Users\HP\Desktop\Assignment Code>

```

**Problem 11:** 11. Write a C program to calculate the root of a Quadratic Equation.

**Solution:****Code:**

```

/*11. Write a C program to calculate the root of a Quadratic Equation.*/
#include<stdio.h>
#include<math.h>
int main()
{
    float a,b,c,D;
    top:
    printf("\n\nEnter values of a,b & c : ");
    scanf("%f %f %f",&a,&b,&c);

    D=pow(b,2)-4*a*c;
    if(D>0)
        printf("Root are Real.\n");
    else if(D<0)
        printf("Root are Imaginary.\n");
    else if(D==0)
        printf("Root are Equal.\n");
}

```

```

goto top;
return 0;
}

```

### Output:

The screenshot shows a C program named 'problem11.c' being executed. The program prompts the user to enter values for a, b, and c. In the first run, the user enters '1 5 7', and the program outputs 'Root are Imaginary.' In the second run, the user enters '1 5 7' again, and the program outputs 'Root are Imaginary.'

```

C problem11.c X
C problem11.c > main()
5 {
6     float a,b,c,D;
7     top:
8     printf("\n\nEnter values of a,b & c : ");
9     scanf("%f %f %f",&a,&b,&c);
10
11     D=pow(b,2)-4*a*c;
12     if(D>0)
13         printf("Root are Real.\n");
14     else if(D<0)
15         printf("Root are Imaginary.\n");
16     else if(D==0)
17         printf("Root are Equal.\n");
18
19     goto top;
20     return 0;
21 }

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if (\$?) { gcc problem11.c -o problem11 } ; if (\$?) { .\problem11 }

Enter values of a,b & c : 1 5 7  
Root are Imaginary.

Enter values of a,b & c : 1 5 7  
Root are Imaginary.

**Problem 12:** . Write a C program to read roll no, name and marks of three subjects and calculate the total, percentage and division.

### Solution:

#### Code:

```

#include<stdio.h>
int main()
{
    int roll;
    char name[60];
    int phy,che,comApk,total;
    top:

    printf("\n\nEnter Roll Number of the student: ");
    scanf("%d",&roll);
    printf("Enter the Name of the Student: ");
    scanf("%s",&name);

```

```

    printf("Enter the marks of Physics, Chemistry and Computer Application
: ", phy, che, comApk);
    scanf("%d %d %d", &phy, &che, &comApk);

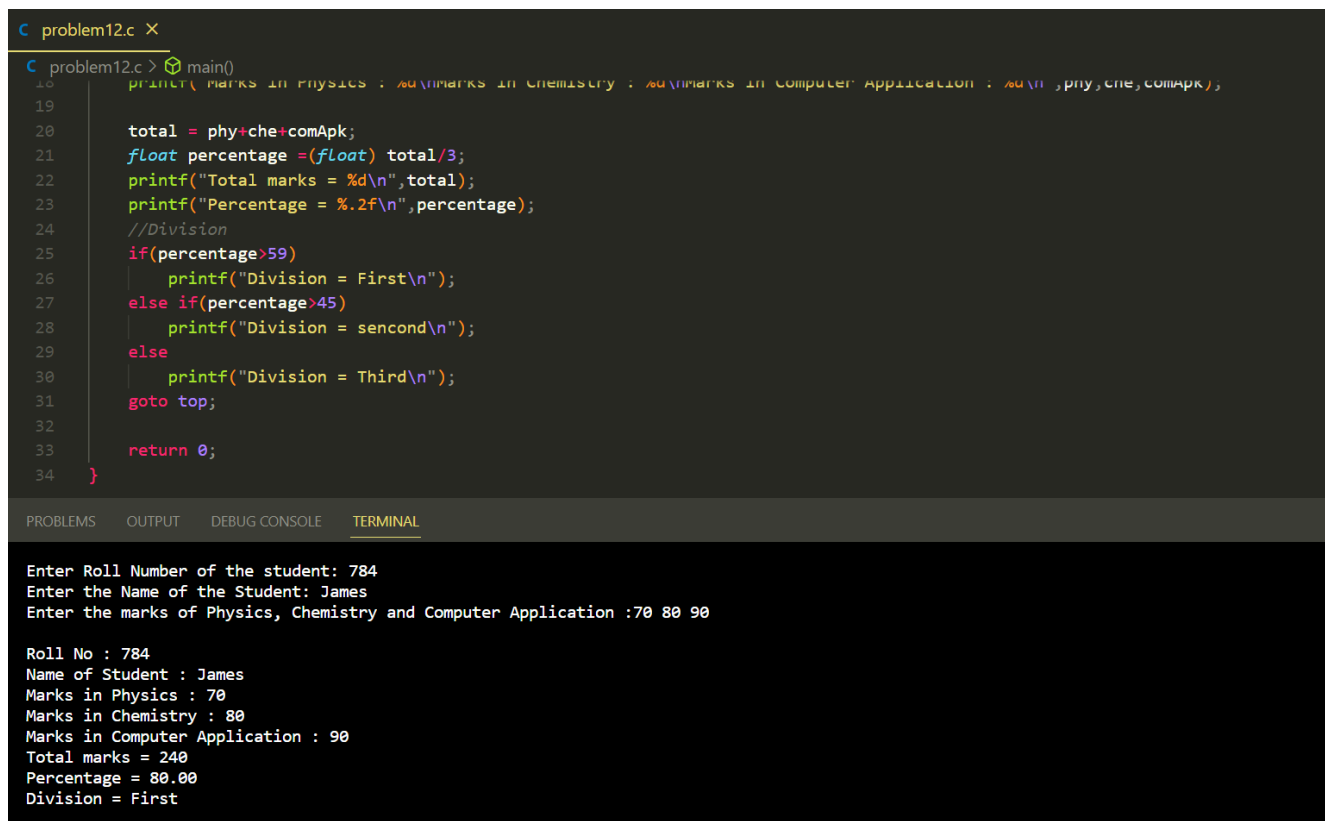
    printf("\nRoll No : %d\n", roll);
    printf("Name of Student : %s \n", name);
    printf("Marks in Physics : %d\nMarks in Chemistry : %d\nMarks in Computer
Application : %d\n", phy, che, comApk);

    total = phy+che+comApk;
    float percentage =(float) total/3;
    printf("Total marks = %d\n", total);
    printf("Percentage = %.2f\n", percentage);
    //Division
    if(percentage>59)
        printf("Division = First\n");
    else if(percentage>45)
        printf("Division = sencond\n");
    else
        printf("Division = Third\n");
    goto top;

    return 0;
}

```

## Output:



```

C problem12.c X
C problem12.c > main()
18 printf("Marks in Physics : %d\nMarks in Chemistry : %d\nMarks in Computer Application : %d\n", phy, che, comApk);
19
20 total = phy+che+comApk;
21 float percentage =(float) total/3;
22 printf("Total marks = %d\n", total);
23 printf("Percentage = %.2f\n", percentage);
24 //Division
25 if(percentage>59)
26     printf("Division = First\n");
27 else if(percentage>45)
28     printf("Division = sencond\n");
29 else
30     printf("Division = Third\n");
31 goto top;
32
33 return 0;
34 }

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```

Enter Roll Number of the student: 784
Enter the Name of the Student: James
Enter the marks of Physics, Chemistry and Computer Application :70 80 90

Roll No : 784
Name of Student : James
Marks in Physics : 70
Marks in Chemistry : 80
Marks in Computer Application : 90
Total marks = 240
Percentage = 80.00
Division = First

```

**Problem 13:** . Write a C program to read temperature in centigrade and display a suitable message according to temperature state below :

**Solution:**

**Code:**

```
/*13. Write a C program to read temperature in centigrade and display a suitable
message according to temperature state below :*/
#include<stdio.h>
int main()
{
    float temp;
top:
    printf("\n\nEnter the Temperature : ");
    scanf("%f",&temp);
    printf("Test Data: %.2f\n",temp);

    if(temp<0)
        printf("Freezing weather\n");
    if(temp>=0 && temp<=10)
        printf("Very Cold weather\n");
    if(temp>10 && temp<21)
        printf("Cold weather\n");
    if(temp>20 && temp<31)
        printf("Normal in Temp\n");
    if(temp>30 && temp<40)
        printf("Its Hot\n");
    if(temp>=40)
        printf("Its Very Hot\n");

    goto top;
    return 0;
}
```



**Output:**

```

C problem13.c X
C problem13.c > main()
12     if(temp<0)
13         printf("Freezing weather\n");
14     if(temp==0 && temp<=10)
15         printf("Very Cold weather\n");
16     if(temp>10 && temp<21)
17         printf("Cold weather\n");
18     if(temp>20 && temp<31)
19         printf("Normal in Temp\n");
20     if(temp>30 && temp<40)
21         printf("Its Hot\n");
22     if(temp==40)
23         printf("Its Very Hot\n");
24
25     goto top;
26     return 0;
27 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if ($?) { gcc problem13.c -o problem13 } ; if ($?) { .\problem13 }

Enter the Temperature : 42
Test Data: 42.00
Its Very Hot

Enter the Temperature : █

```

**Problem 14:** Write a C program to check whether a triangle is Equilateral, Isosceles or Scalene

**Solution:****Code:**

```

#include<stdio.h>
int main()
{
    int A,B,C;
top:
    printf("\n\nEnter three sides of triangle : ");
    scanf("%d %d %d",&A,&B,&C);

    if(A==B && B==C && C==A)
        printf("This is an Equilateral triangle.");
    else if(A!=B && B!=C && C!=A)
        printf("This is an Scalene triangle.");
    if(((A==B) && (A!=C)) || ((C==B) && (A!=C)) || ((A==C) && (A!=B)))
        printf("This is an Isosceles triangle.\n");
    printf("\n");
    goto top;
    return 0;
}

```

**Output:**


```

C problem14.c X
C problem14.c > main()
3 {
4     int A,B,C;
5     top:
6     printf("\n\nEnter three sides of triangle : ");
7     scanf("%d %d %d",&A,&B,&C);
8
9     if(A==B && B==C && C==A)
10        printf("This is an Equilateral triangle.");
11    else if(A!=B && B!=C && C!=A)
12        printf("This is an Scalene triangle.");
13    if(((A==B) && (A!=C)) || ((C==B) && (A!=C)) || ((A==C) && (A!=B)))
14        printf("This is an Isosceles triangle.\n");
15    printf("\n");
16    goto top;
17    return 0;
18 }

```

Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if (\$?) { gcc problem14.c -o problem14 } ; if (\$?) { .\problem14 }

Enter three sides of triangle : 50 50 60  
This is an Isosceles triangle.

Enter three sides of triangle :

**Problem 15:** Write a C program to check whether a triangle can be formed by the given value for the angles.

**Solution:****Code:**

```

#include<stdio.h>
int main()
{
    float a,b,c;
    top:
    printf("\n\nEnter three angles of a triangle : ");
    scanf("%f %f %f",&a,&b,&c);

    if((a+b+c)==180 && a!=0 && b!=0 && c!=0)
        printf("The triangle is valid.\n");
    else
        printf("The triangle is not valid.\n");

    goto top;

    return 0;
}

```

**Output:**

```

C problem15.c X
C problem15.c > main()
2 int main()
3 {
4     float a,b,c;
5     top:
6     printf("\n\nEnter three angles of a triangle : ");
7     scanf("%f %f %f",&a,&b,&c);
8
9     if((a+b+c)==180 && a!=0 && b!=0 && c!=0)
10        printf("The triangle is valid.\n");
11    else
12        printf("The triangle is not valid.\n");
13
14    goto top;
15
16    return 0;
17
18 }

```

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if (\$?) { gcc problem15.c -o problem15 } ; if (\$?) { .\problem15 }

Enter three angles of a triangle : 40 55 65  
The triangle is not valid.

Enter three angles of a triangle : █

**Problem 16:** Write a C program to check whether a character is an alphabet, digit or special character.

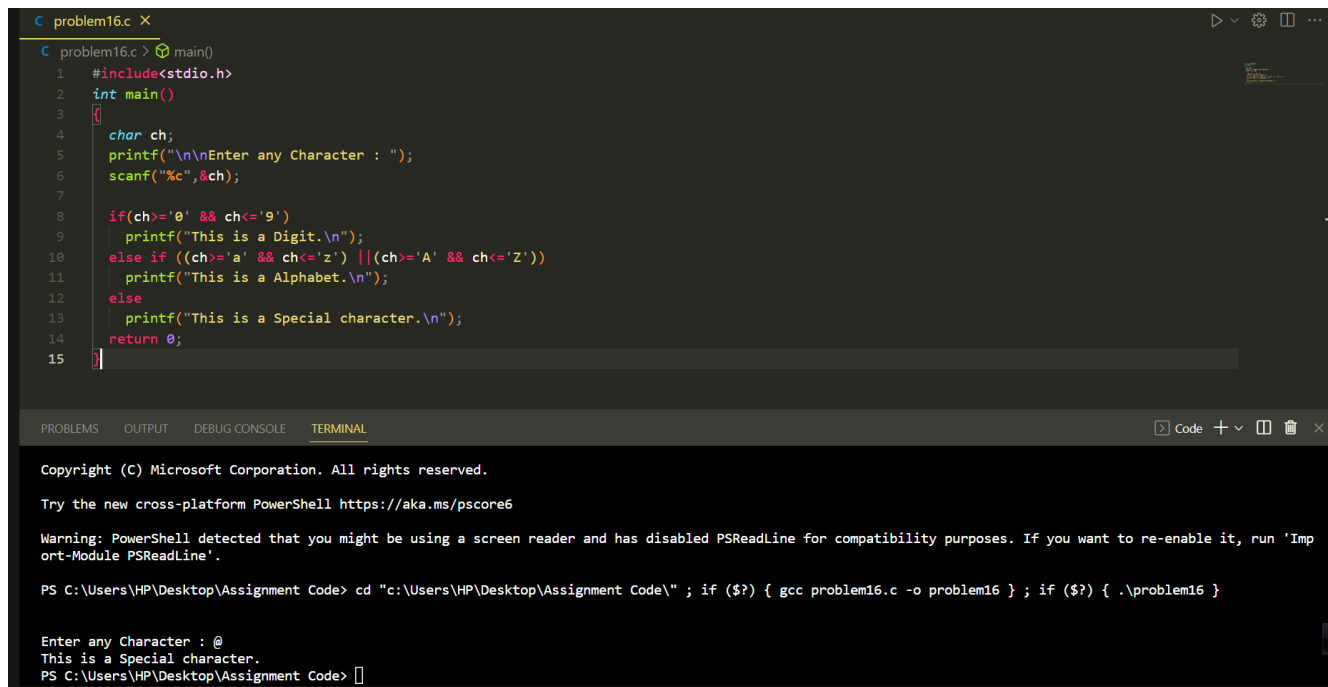
**Solution:****Code:**

```

#include<stdio.h>
int main()
{
    char ch;
    printf("\n\nEnter any Character : ");
    scanf("%c",&ch);

    if(ch>='0' && ch<='9')
        printf("This is a Digit.\n");
    else if ((ch>='a' && ch<='z') || (ch>='A' && ch<='Z'))
        printf("This is a Alphabet.\n");
    else
        printf("This is a Special character.\n");
    return 0;
}

```

**Output:**


```

C problem16.c X
C problem16.c > main()
1  #include<stdio.h>
2  int main()
3  {
4      char ch;
5      printf("\n\nEnter any Character : ");
6      scanf("%c",&ch);
7
8      if(ch>='0' && ch<='9')
9          printf("This is a Digit.\n");
10     else if ((ch>='a' && ch<='z') || (ch>='A' && ch<='Z'))
11         printf("This is a Alphabet.\n");
12     else
13         printf("This is a Special character.\n");
14     return 0;
15 }

```

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Try the new cross-platform PowerShell <https://aka.ms/pscore6>

Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if (\$?) { gcc problem16.c -o problem16 } ; if (\$?) { .\problem16 }

Enter any Character : @  
This is a Special character.  
PS C:\Users\HP\Desktop\Assignment Code>

**Problem 17:** Write a C program to check whether an alphabet is a vowel or consonant.

**Solution:****Code:**

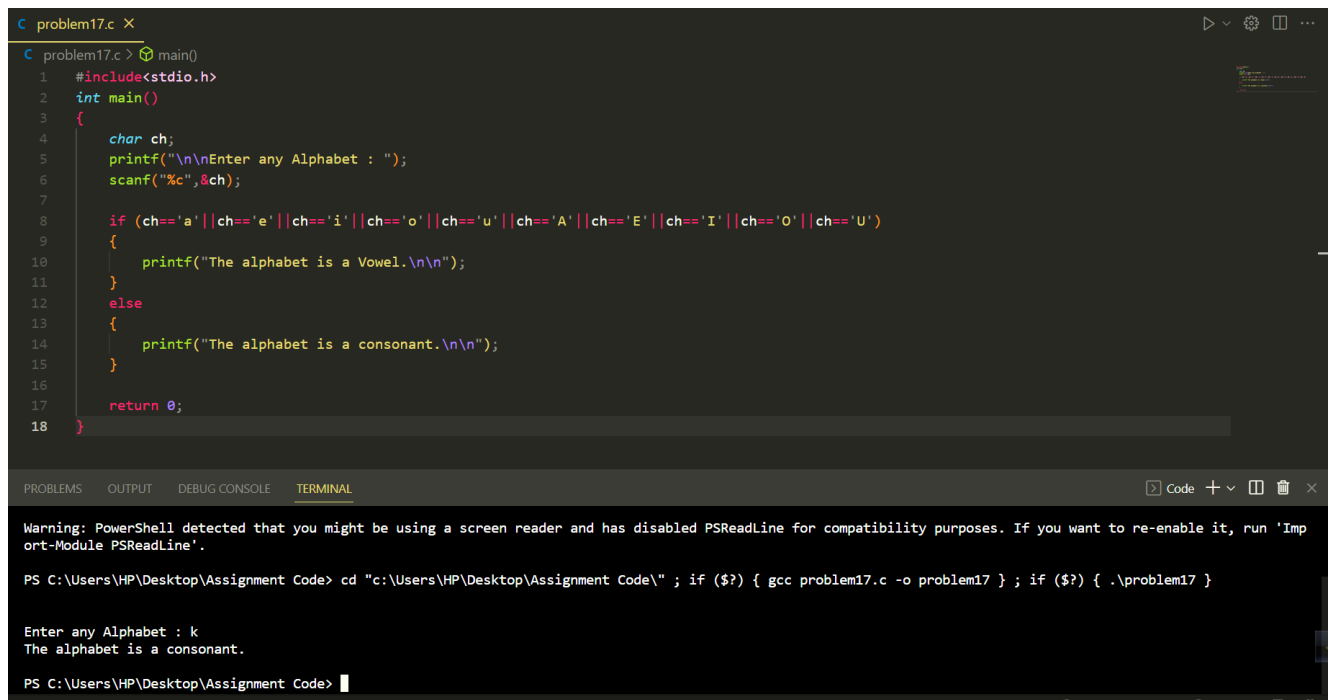
```

#include<stdio.h>
int main()
{
    char ch;
    printf("\n\nEnter any Alphabet : ");
    scanf("%c",&ch);

    if
(ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u' || ch=='A' || ch=='E' || ch=='I' || ch=='O' || ch=
='U')
    {
        printf("The alphabet is a Vowel.\n\n");
    }
    else
    {
        printf("The alphabet is a consonant.\n\n");
    }

    return 0;
}

```

**Output:**


```

C problem17.c X
C problem17.c > main()
1 #include<stdio.h>
2 int main()
3 {
4     char ch;
5     printf("\nEnter any Alphabet : ");
6     scanf("%c",&ch);
7
8     if (ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u' || ch=='A' || ch=='E' || ch=='I' || ch=='O' || ch=='U')
9     {
10        printf("The alphabet is a Vowel.\n\n");
11    }
12    else
13    {
14        printf("The alphabet is a consonant.\n\n");
15    }
16
17    return 0;
18 }

```

Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if (\$?) { gcc problem17.c -o problem17 } ; if (\$?) { .\problem17 }

Enter any Alphabet : k  
The alphabet is a consonant.

PS C:\Users\HP\Desktop\Assignment Code>

**Problem 18:** Write a C program to calculate profit and loss on a transaction.

**Solution:****Code:**

```

#include<stdio.h>
int main()
{
    int selling_price,cost_price;
    top:
    printf("\nEnter your cost price & Selling price: ");
    scanf("%d %d",&cost_price,&selling_price);

    if(cost_price<selling_price)
    {
        printf("You can booked your profit amount : %d\n",selling_price-cost_price);
    }
    else if(cost_price>selling_price)
    {
        printf("You can get loss amount of : %d\n",cost_price-selling_price);
    }
    else

```

```

{
    printf("No profit no loss.\n");
}
goto top;

return 0;
}

```

### Output:

The screenshot shows a C program named `problem18.c` being executed. The source code is as follows:

```

10
11
12 if(cost_price<selling_price)
13 {
14     printf("You can booked your profit amount : %d\n",selling_price-cost_price);
15 }
16 else if(cost_price>selling_price)
17 {
18     printf("You can get loss amount of : %d\n",cost_price-selling_price);
19 }
20 else
21 {
22     printf("No profit no loss.\n");
23 }
24 goto top;
25
26 return 0;
27 }

```

The terminal output shows the program being compiled and run. The user enters the cost price as 500 and the selling price as 700, resulting in a profit of 200.

```

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if ($?) { gcc problem18.c -o problem18 } ; if ($?) { .\problem18 }

Enter your cost price & Selling price: 500 700
You can booked your profit amount : 200

Enter your cost price & Selling price: 

```

**Problem 19:** Write a program in C to calculate and print the Electricity bill of a given customer. The customer id., name and unit consumed by the user should be taken from the keyboard and display the total amount to pay to the customer.

\*\*\*

The charge are as follow :

Unit	Charge/unit
upto 199	@1.20
200 and above but less than 400	@1.50
400 and above but less than 600	@1.80
600 and above	@2.00

If bill exceeds Rs. 400 then a surcharge of 15% will be charged and the minimum bill should be of Rs. 100/-

## Solution:

### Code:

```
#include<stdio.h>
int main()
{
    int id,unit_csm;
    char name[50];
    float charge_p_unit,pri_bill,surcharge,net_charge;
    top:
    printf("\nEnter your id,name & number of Unit consumed :\n");
    scanf("%d %s %d",&id,&name,&unit_csm);

    printf("Customer IDNO: %d\n",id);
    printf("Customer Name: %s\n",name);
    printf("Unit Consumed: %d\n",unit_csm);
    //condition level -1
    if(unit_csm>=0 && unit_csm<200)
    {
        charge_p_unit =1.20;
        pri_bill =(float)unit_csm*charge_p_unit;
        printf("Amount Charges @Rs. %.2f per unit : %.2f\n",charge_p_unit,pri_bill);

        if(pri_bill>400.00)
        {
            surcharge = (pri_bill*15)/100;
            printf("Surcharge Amount : %.2f\n",surcharge);

        }
        else
        {
            printf("Surcharge Amount : 0.00\n");

        }

        net_charge = surcharge + pri_bill;
        if(net_charge>=1 && net_charge<101)
        {
```

```

        printf("Net Amount Paid By the Customer : 100(minimum charge.)\n");
    }
    else if(net_charge>100)
    {
        printf("Net Amount Paid By the Customer : %.2f\n",net_charge);
    }
}
//condition level -1

else if(unit_csm>=200 && unit_csm<400)
{
    charge_p_unit=1.50;
    pri_bill =(float)unit_csm*charge_p_unit;

    printf("Amount Charges @Rs. %.2f per unit : %.2f\n",charge_p_unit,pri_bill);
    if(pri_bill>400.00)
    {
        surcharge = (pri_bill*15)/100;
        printf("Surcharge Amount : %.2f\n",surcharge);
    }
    else
    {
        printf("Surcharge Amount : 0.00\n");
    }

    net_charge = surcharge + pri_bill;
    if(net_charge>=1 && net_charge<101)
    {
        printf("Net Amount Paid By the Customer : 100(minimum charge.)\n");
    }
    else if(net_charge>100)
    {
        printf("Net Amount Paid By the Customer : %.2f\n",net_charge);
    }
}
//condition level -1
else if(unit_csm>=400 && unit_csm<600)
{
    charge_p_unit=1.80;
    pri_bill =(float)unit_csm*charge_p_unit;

    printf("Amount Charges @Rs. %.2f per unit : %.2f\n",charge_p_unit,pri_bill);
    if(pri_bill>400.00)
    {
        surcharge = (pri_bill*15)/100;
        printf("Surcharge Amount : %.2f\n",surcharge);
    }
    else

```



```

    {
        printf("Surcharge Amount : 0.00\n");
    }

    net_charge = surcharge + pri_bill;
    if(net_charge>=1 && net_charge<101)
    {
        printf("Net Amount Paid By the Customer : 100(minimum charge.)\n");
    }
    else if(net_charge>100)
    {
        printf("Net Amount Paid By the Customer : %.2f\n",net_charge);
    }
}

//condition level -1
else if(unit_csm>=600)
{
    charge_p_unit=2.00;
    pri_bill =(float)unit_csm*charge_p_unit;

    printf("Amount Charges @Rs. %.2f per unit : %.2f\n",charge_p_unit,pri_bill);
    if(pri_bill>400.00)
    {
        surcharge = (pri_bill*15)/100;
        printf("Surcharge Amount : %.2f\n",surcharge);
    }
    else
    {
        printf("Surcharge Amount : 0.00\n");
    }

    net_charge = surcharge + pri_bill;
    if(net_charge>=1 && net_charge<101)
    {
        printf("Net Amount Paid By the Customer : 100(minimum charge.)\n");
    }
    else if(net_charge>100)
    {
        printf("Net Amount Paid By the Customer : %.2f\n",net_charge);
    }
}

goto top;

return 0;
}

```

**Output:**

```

C problem19.c X
C problem19.c > main()
117
118     net_charge = surcharge + pri_bill;
119     if(net_charge>=1 && net_charge<101)
120     {
121         printf("Net Amount Paid By the Customer : 100(minimum charge.)\n");
122     }
123     else if(net_charge>100)
124     {
125         printf("Net Amount Paid By the Customer : %.2f\n",net_charge);
126     }
127 }
128
129 goto top;
130
131 return 0;
132 }

```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL**

```

Enter your id,name & number of Unit consumed :
1001
James
800
Customer IDNO: 1001
Customer Name: James
Unit Consumed: 800
Amount Charges @Rs. 2.00 per unit : 1600.00
Surcharge Amount : 240.00
Net Amount Paid By the Customer : 1840.00

Enter your id,name & number of Unit consumed :

```

**Problem 20:** Write a program in C to accept a grade and declare the equivalent description.

\*\*\*

Grade	Description
E	Excellent
V	Very Good
G	Good
A	Average
F	Fail

**Solution:**

**Code:**

```
#include<stdio.h>
int main()
{
    char grade;
    printf("\n\nGrade and equivalence description: \nE = Excellent\nV = Very Good\nG = Good\nA = Average\nF = Fail\n");
    printf("Enter your grade : ");
    scanf("%c",&grade);

    if(grade=='E')
        printf("You have chosen : Excellent");
    else if(grade=='V')
        printf("You have chosen : Very Good");
    else if(grade=='G')
        printf("You have chosen : Good");
    else if(grade=='A')
        printf("You have chosen : Average\n\n");
    else if(grade=='F')
        printf("You have chosen : Fail");
    else
        printf("Invalid");

    return 0;
}
```

**Output:**

The screenshot shows a code editor window titled "problem20.c" with the following code:

```
9      if(grade=='E')
10         printf("You have chosen : Excellent");
11     else if(grade=='V')
12         printf("You have chosen : Very Good");
13     else if(grade=='G')
14         printf("You have chosen : Good");
15     else if(grade=='A')
16         printf("You have chosen : Average\n\n");
17     else if(grade=='F')
18         printf("You have chosen : Fail");
19     else
20         printf("Invalid");
21
22     return 0;
23 }
```

Below the code editor, the "TERMINAL" tab is active, showing the program's output:

```
Grade and equivalence description:
E = Excellent
V = Very Good
G = Good
A = Average
F = Fail
Enter your grade : A
You have chosen : Average
```

The prompt at the bottom of the terminal is "PS C:\Users\HP\Desktop\Assignment Code>".

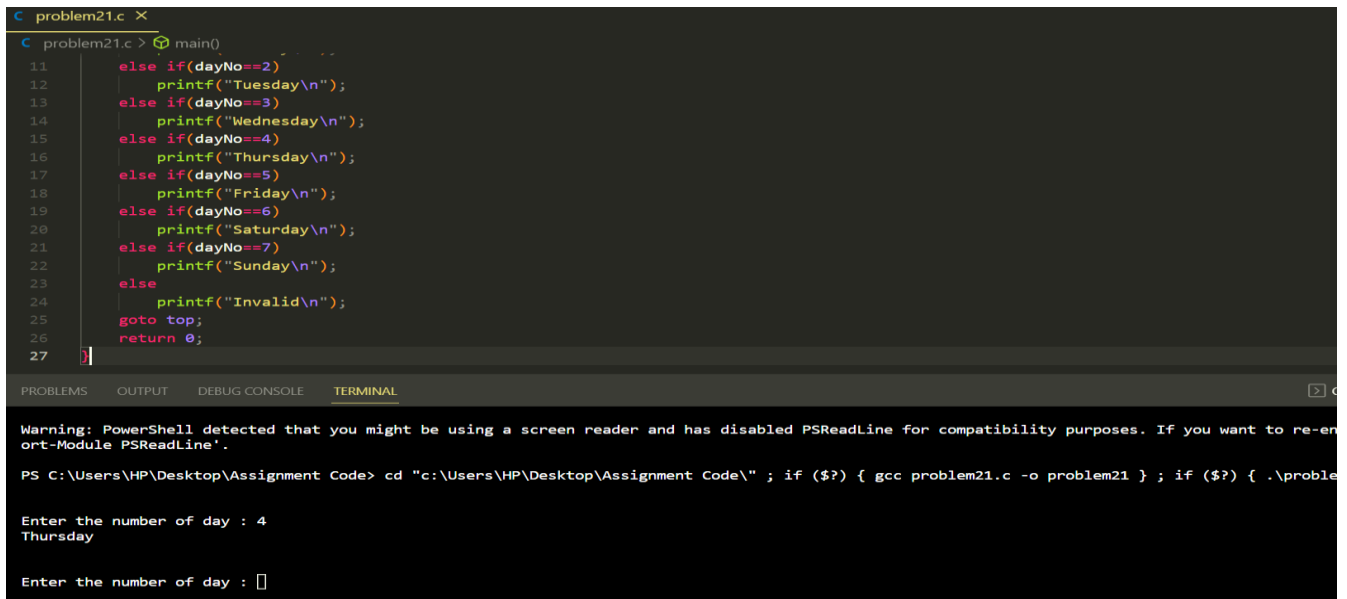
**Problem 21:** Write a program in C to read any day number in integer and display day name in the word.

**Solution:**

**Code:**

```
#include<stdio.h>
int main()
{
    int dayNo;
top:
    printf("\n\nEnter the number of day : ");
    scanf("%d",&dayNo);

    if(dayNo==1)
        printf("Monday\n");
    else if(dayNo==2)
        printf("Tuesday\n");
    else if(dayNo==3)
        printf("Wednesday\n");
    else if(dayNo==4)
        printf("Thursday\n");
    else if(dayNo==5)
        printf("Friday\n");
    else if(dayNo==6)
        printf("Saturday\n");
    else if(dayNo==7)
        printf("Sunday\n");
    else
        printf("Invalid\n");
    goto top;
    return 0;
}
```

**Output:**


```

C problem21.c X
C problem21.c > main()
11     else if(dayNo==2)
12         printf("Tuesday\n");
13     else if(dayNo==3)
14         printf("Wednesday\n");
15     else if(dayNo==4)
16         printf("Thursday\n");
17     else if(dayNo==5)
18         printf("Friday\n");
19     else if(dayNo==6)
20         printf("Saturday\n");
21     else if(dayNo==7)
22         printf("Sunday\n");
23     else
24         printf("Invalid\n");
25     goto top;
26     return 0;
27
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-en
ort-Module PSReadLine'.
PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if ($?) { gcc problem21.c -o problem21 } ; if ($?) { .\proble

Enter the number of day : 4
Thursday

Enter the number of day : 

```

**Problem 22:** Write a program in C to read any digit, display in the word.

**Solution:****Code:**

```

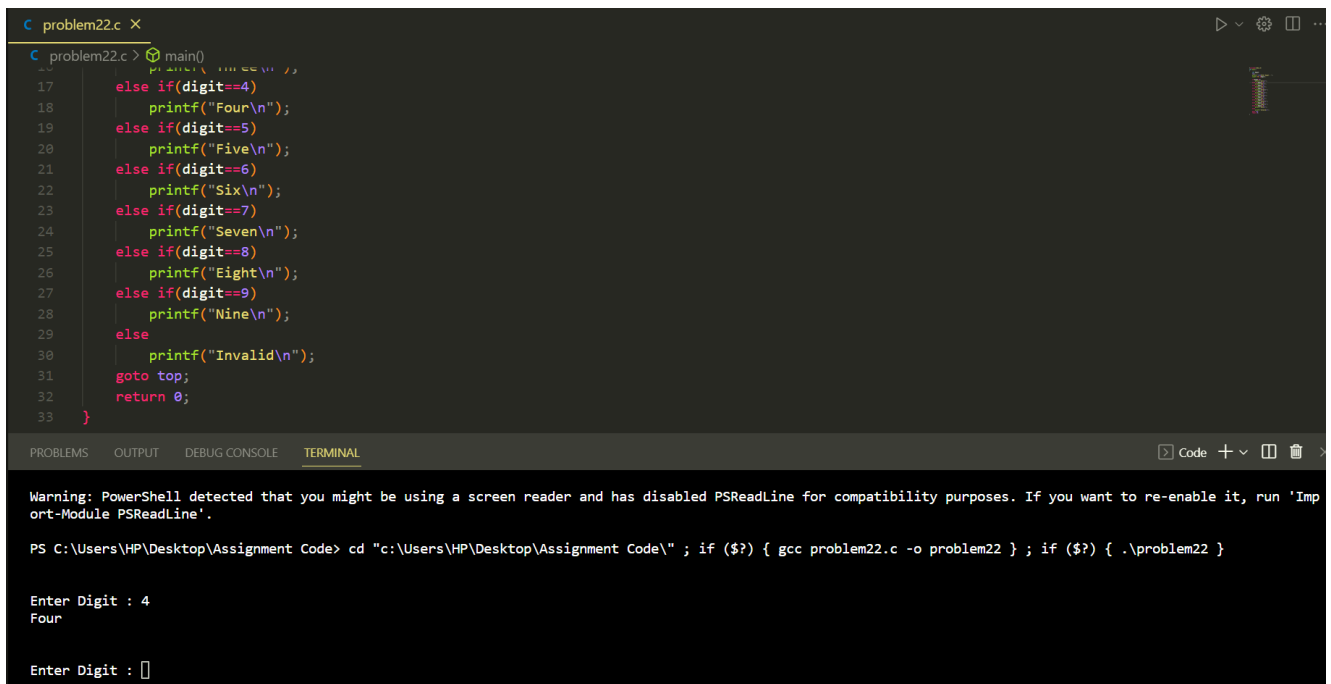
#include<stdio.h>
int main()
{
    int digit;
top:
    printf("\n\nEnter Digit : ");
    scanf("%d",&digit);

    if(digit==0)
        printf("Zero\n");
    else if(digit==1)
        printf("One\n");
    else if(digit==2)
        printf("Two\n");
    else if(digit==3)
        printf("Three\n");
    else if(digit==4)
        printf("Four\n");
    else if(digit==5)

```

```
        printf("Five\n");
    else if(digit==6)
        printf("Six\n");
    else if(digit==7)
        printf("Seven\n");
    else if(digit==8)
        printf("Eight\n");
    else if(digit==9)
        printf("Nine\n");
    else
        printf("Invalid\n");
    goto top;
    return 0;
}
```

## Output:



The screenshot shows a Visual Studio Code editor with a C program named `problem22.c` open. The code is a menu-driven program that prints the name of a digit (1-9) based on user input. The terminal window at the bottom shows the command to compile and run the program, followed by the output of the program. The user entered '4', and the program printed 'Four'.

```
C problem22.c X
C problem22.c > main()
17     else if(digit==4)
18         printf("Four\n");
19     else if(digit==5)
20         printf("Five\n");
21     else if(digit==6)
22         printf("Six\n");
23     else if(digit==7)
24         printf("Seven\n");
25     else if(digit==8)
26         printf("Eight\n");
27     else if(digit==9)
28         printf("Nine\n");
29     else
30         printf("Invalid\n");
31     goto top;
32     return 0;
33 }
```

Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if (\$?) { gcc problem22.c -o problem22 } ; if (\$?) { .\problem22 }

Enter Digit : 4  
Four

Enter Digit :

**Problem 23:** Write a program in C to read any Month Number in integer and display Month name in the word.

### Solution:

#### Code:

```
#include<stdio.h>
int main()
{
    int monthNo;
top:
    printf("\n\nEnter Number of month : ");
    scanf("%d",&monthNo);

    if(monthNo==1)
        printf("January\n");
    else if(monthNo==2)
        printf("February\n");
    else if(monthNo==3)
        printf("March\n");
    else if(monthNo==4)
        printf("April\n");
    else if(monthNo==5)
        printf("May\n");
    else if(monthNo==6)
        printf("June\n");
    else if(monthNo==7)
        printf("July\n");
    else if(monthNo==8)
        printf("August\n");
    else if(monthNo==9)
        printf("September\n");
    else if(monthNo==10)
        printf("October\n");
    else if(monthNo==11)
        printf("November\n");
    else if(monthNo==12)
        printf("December\n");
    else
        printf("Invalid\n");
    goto top;
    return 0;
}
```

**Output:**

```

C problem23.c X
C problem23.c > main()
22     printf("July\n");
23 else if(monthNo==8)
24     printf("August\n");
25 else if(monthNo==9)
26     printf("September\n");
27 else if(monthNo==10)
28     printf("October\n");
29 else if(monthNo==11)
30     printf("November\n");
31 else if(monthNo==12)
32     printf("December\n");
33 else
34     printf("Invalid\n");
35 goto top;
36 return 0;
37 }

```

Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if (\$?) { gcc problem23.c -o problem23 } ; if (\$?) { .\problem23 }

Enter Number of month : 4  
April

Enter Number of month : █

**Problem 24:** Write a program in C to read any Month Number in integer and display the number of days for this month.

**Solution:****Code:**

```

#include<stdio.h>
int main()
{
    int monthNo;
top:
    printf("\n\nEnter Number of month : ");
    scanf("%d",&monthNo);

    if(monthNo==1)
        printf("Month have 31 days\n");
    else if(monthNo==2)
        printf("Month have 28 days\n");
    else if(monthNo==3)
        printf("Month have 31 days\n");
    else if(monthNo==4)
        printf("Month have 30 days\n");
    else if(monthNo==5)

```

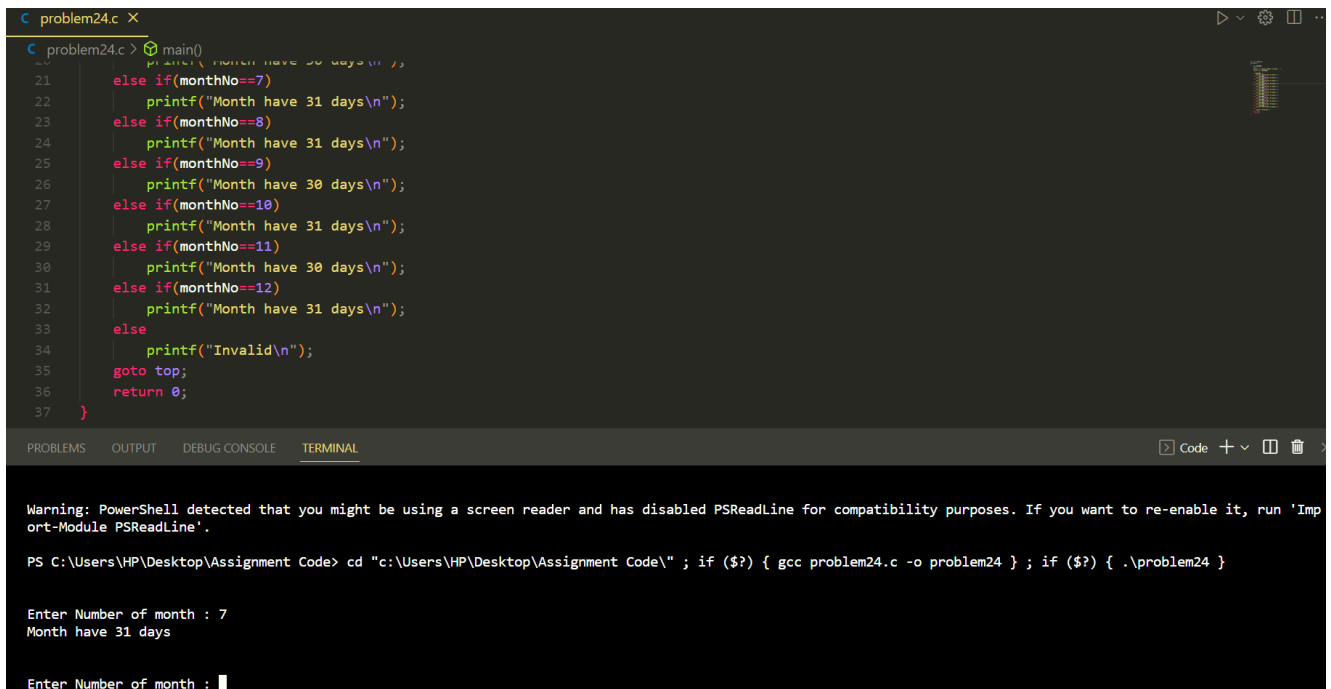


```

        printf("Month have 31 days\n");
    else if(monthNo==6)
        printf("Month have 30 days\n");
    else if(monthNo==7)
        printf("Month have 31 days\n");
    else if(monthNo==8)
        printf("Month have 31 days\n");
    else if(monthNo==9)
        printf("Month have 30 days\n");
    else if(monthNo==10)
        printf("Month have 31 days\n");
    else if(monthNo==11)
        printf("Month have 30 days\n");
    else if(monthNo==12)
        printf("Month have 31 days\n");
    else
        printf("Invalid\n");
    goto top;
    return 0;
}

```

## Output:



The screenshot shows a C++ IDE with a file named `problem24.c`. The code is a C program that takes a month number as input and prints the number of days in that month. It uses a series of `else if` statements to check for months 6 through 12, and a final `else` clause for invalid input. The program uses `goto top;` to loop back to the input prompt.

The terminal output shows the program being compiled and executed. The user enters the number 7, and the program outputs "Month have 31 days". The prompt "Enter Number of month :" is shown again at the bottom.

```

C problem24.c X
C problem24.c > main()
21     else if(monthNo==7)
22         printf("Month have 31 days\n");
23     else if(monthNo==8)
24         printf("Month have 31 days\n");
25     else if(monthNo==9)
26         printf("Month have 30 days\n");
27     else if(monthNo==10)
28         printf("Month have 31 days\n");
29     else if(monthNo==11)
30         printf("Month have 30 days\n");
31     else if(monthNo==12)
32         printf("Month have 31 days\n");
33     else
34         printf("Invalid\n");
35     goto top;
36     return 0;
37 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.
PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if ($?) { gcc problem24.c -o problem24 } ; if ($?) { .\problem24 }

Enter Number of month : 7
Month have 31 days

Enter Number of month : 

```

**Problem 25:** Write a program in C which is a Menu-Driven Program to compute the area of the various geometrical shape.

### Solution:

#### Code:

```
#include<stdio.h>
int main()
{
    int geoNO;
    float t_base,t_hight,c_radius,r_length,r_width,s_side;
    printf("\n\nVarious Geometrical shape : \n");
    printf("1.Circle\n2.Triangle\n3.Rectangle\n4.Square\n");
    printf("Please select your disire Geometrical shape to calculate Area : ");
    scanf("%d",&geoNO);

    switch (geoNO)
    {
        case 1:
            printf("Enter the radius of cicle : ");
            scanf("%f",&c_radius);
            printf("The area of the circle is : %.6f",3.1415926535*c_radius*c_radius);

            break;
        case 2:
            printf("Enter the base of the triangle : ");
            scanf("%f",&t_base);
            printf("Enter the hight of the triangle : ");
            scanf("%f",&t_hight);
            printf("The area of the triangle is : %.2f",.5*t_base*t_hight);

            break;
        case 3:
            printf("Enter the length of the rectangle : ");
            scanf("%f",&r_length);
            printf("Enter the width of the rectangle : ");
            scanf("%f",&r_width);
            printf("The area of the Rectangle is : %.2f",r_length*r_width);

            break;
        case 4:
            printf("Enter the side of square : ");
            scanf("%f",&s_side);
            printf("The area of the Square is : %.2f",s_side*s_side);
```

```

        break;
    }

    return 0;
}

```

## Output:

The screenshot shows a C program named 'problem25.c' being executed. The program prompts the user to enter the length and width of a rectangle. The user enters 5 for length and 3 for width. The program calculates the area as 15.00 and displays it. The program also includes a menu for selecting a shape to calculate its area, with options 1 for Circle, 2 for Triangle, 3 for Rectangle, and 4 for Square. The user selects 1 for Circle, enters a radius of 5, and the program calculates the area as 78.539816.

```

C problem25.c X
C problem25.c > main()
29     printf("Enter the length of the rectangle : ");
30     scanf("%f",&r_length);
31     printf("Enter the width of the rectangle : ");
32     scanf("%f",&r_width);
33     printf("The area of the Rectangle is : %.2f",r_length*r_width);
34     break;
35 case 4:
36     printf("Enter the side of square : ");
37     scanf("%f",&s_side);
38     printf("The area of the Square is : %.2f",s_side*s_side);
39     break;
40 }
41 }
42 return 0;
43 }
44 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
PS C:\Users\HP\Desktop\Assignment Code> cd "c:\Users\HP\Desktop\Assignment Code\" ; if ($?) { gcc problem25.c -o problem25 } ; if ($?) { .\problem25 }

Various Geometrical shape :
1.Circle
2.Triangle
3.Rectangle
4.Square
Please select your disire Geometrical shape to calculate Area : 1
Enter the radius of cicle : 5
The area of the circle is : 78.539816
PS C:\Users\HP\Desktop\Assignment Code>

```

**Problem 26:** Write a program in C which is a Menu-Driven Program to perform a simple calculation.

## Solution:

### Code:

```

#include<stdio.h>
int main()
{
    int calNo;
    float num1,num2;
    top:
    printf("\n\nEnter the Two numbers : ");
    scanf("%f %f",&num1,&num2);
    printf("Calculation type : \n");
    printf("1.Addition\n2.Subtraction\n3.Multiplication\n4.Division\n");
    printf("Please select your disire Calculation Type : ");
    scanf("%d",&calNo);
}

```

```

switch (calNo)
{
case 1:
    printf("The Addition of %.0f and %.0f is : %.0f\n", num1, num2, num1+num2);

    break;
case 2:
    printf("The Subtraction of %.0f and %.0f is : %.0f\n", num1, num2, num1-num2);

    break;
case 3:
    printf("The Multiplication of %.0f and %.0f is : 
%.0f\n", num1, num2, num1*num2);

    break;
case 4:
    printf("The Division of %.2f and %.2f is : %.2f\n", num1, num2, num1/num2);

    break;
}
goto top;

return 0;
}

```

## Output:

```

C problem26.c X
C problem26.c > main()
25     printf("The Multiplication of %.0f and %.0f is : %.0f\n", num1, num2, num1*num2);
26
27     break;
28 case 4:
29     printf("The Division of %.2f and %.2f is : %.2f\n", num1, num2, num1/num2);
30
31     break;
32 }
33 goto top;
34
35 return 0;
36 }

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```

Enter the Two numbers : 10 2
Calculation type :
1.Addition
2.Subtraction
3.Multiplication
4.Division
Please select your disire Calculation Type : 3
The Multiplication of 10 and 2 is : 20

Enter the Two numbers : 

```

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