**Assignment – 3**

**Decision Control Statements**

1. **Write a program to check whether a given number is positive or non-positive.**

**Code**

#include<stdio.h>

int main() {

    int n;

    printf("Enter a Number :");

    scanf("%d",&n);

    if(n>0)

    printf("Number is Positive");

    else

     printf("Number is Non-Positive");

    return 0;

}

**Output**

Enter a Number :4

Number is Positive

1. **Write a program to check whether a given number is divisible by 5 or not**

**Code**

#include<stdio.h>

int main() {

    int n;

    printf("Enter a Number :");

    scanf("%d",&n);

    if(n%5==0)

    printf("Number is divisible by 5");

    else

     printf("Number is not divisible by 5");

    return 0;

}

**Output**

**Enter a Number :25**

**Number is divisible by 5**

1. **Write a program to check whether a given number is an even number or an odd number.**

**Code**

#include<stdio.h>

int main() {

    int n;

    printf("Enter a Number :");

    scanf("%d",&n );

    if((n%2)==0)

    printf("Number is Even");

    else

    printf("Number is odd");

    return 0;

}

**Output**

Enter a Number :3

Number is odd

1. **Write a program to check whether a given number is an even number or an odd number without using % operator.**

**Code**

#include<stdio.h>

int main() {

    int n;

    printf("Enter a Number :");

    scanf("%d",&n );

    if((n&1)==0)

    printf("Number is Even");

    else

    printf("Number is odd");

    return 0;

}

**Output**

Enter a Number :5

Number is odd

1. **Write a program to check whether a given number is a three-digit number or not.**

**Code**

#include<stdio.h>

int main() {

    int n;

    printf("Enter a Number :");

    scanf("%d",&n);

    if(n>100 && n<1000)

    printf("Number is 3 digit");

    else

     printf("Number is not 3 digit");

    return 0;

}

**Output**

1. **Write a program to print greater between two numbers. Print one number of both are the same.**

**Code**

#include<stdio.h>

int main() {

    int n1,n2;

    printf("Enter a Number(N1) :");

    scanf("%d",&n1);

    printf("Enter a Number(N2) :");

    scanf("%d",&n2);

    if(n1==n2)

      printf("N1=N2=%d",n1);

    if(n1>n2)

      printf("Number(N1)=%d is Greater",n1);

    if(n1<n2)

      printf("Number(N2)=%d is Greater",n2);

    return 0;

}

**Output**

Enter a Number(N1) :4

Enter a Number(N2) :5

Number(N2)=5 is Greater

1. **Write a program to check whether roots of a given quadratic equation are real & distinct, real & equal or imaginary roots**

**Code**

#include<stdio.h>

#include<math.h>

int main() {

    int a,b,c,d;

    printf("In a Quadratic Equation (a)x^2+(b)x+c=0 : \n");

    printf("Enter cofficient (a) :");

    scanf("%d",&a);

    printf("Enter cofficient (b) :");

    scanf("%d",&b);

    printf("Enter cofficient (c) :");

    scanf("%d",&c);

     d=sqrt(b\*b-(4\*a\*c));

    if(d>0)

      printf("roots of this Quadratic Equation are real and distinct");

    if(d==0)

      printf("roots of this Quadratic Equation are real and equal");

    if(d<0)

      printf("roots of this Quadratic Equation are imaginary");

    return 0;

}

**Output**

Enter cofficient (a) :1

Enter cofficient (b) :5

Enter cofficient (c) :6

roots of this Quadratic Equation are real and distinct

1. **Write a program to check whether a given year is a leap year or not.**

**Code**

#include<stdio.h>

int main() {

    int n;

    printf("Enter a year :");

    scanf("%d",&n );

    if(n%4==0)

    printf("Leap year ");

    else

    printf("Not a Leap year");

    return 0;

}

**Output**

Enter a year :2014

Not a Leap year

1. **Write a program to find the greatest among three given numbers. Print number once if the greatest number appears two or three times.**

**Code**

#include<stdio.h>

int main() {

    int n1,n2,n3;

    printf("Enter a Number(N1) :");

    scanf("%d",&n1);

    printf("Enter a Number(N2) :");

    scanf("%d",&n2);

    printf("Enter a Number(N3) :");

    scanf("%d",&n3);

    if(n1==n2==n3)

      printf("N1=N2=N3=%d",n1);

    if(n1>n2 && n1>n3)

      printf("Number(N1)=%d is Greater",n1);

    if(n2>n3 && n2>n1)

      printf("Number(N2)=%d is Greater",n2);

    if(n3>n2 && n3>n1)

      printf("Number(N3)=%d is Greater",n3);

    return 0;

}

**Output**

Enter a Number(N1) :4

Enter a Number(N2) :5

Enter a Number(N3) :2

Number(N2)=5 is Greater

1. **Write a program which takes the cost price and selling price of a product from the user. Now calculate and print profit or loss percentage.**

**Code**

#include<stdio.h>

int main() {

    float n1,n2,d;

    printf("Enter Cost Price :");

    scanf("%f",&n1);

    printf("Enter Selling Price :");

    scanf("%f",&n2);

    if(n1==n2)

      printf("No loss and No Profit");

    if(n2>n1)

     {

         d=(((n2-n1)/n2))\*100;

         printf("Got %.2f %% Profit",d);

     }

    if(n1>n2)

    {

         d= (((n1-n2)/n1))\*100;

         printf("Got %.2f %% Loss",d);

    }

    return 0;

}

**Output**

Enter Cost Price :4

Enter Selling Price :6

Got 33.33 % Profit

1. **Write a program to take marks of 5 subjects from the user. Assume marks are given out of 100 and passing marks is 33. Now display whether the candidate passed the examination or failed.**

**Code**

#include<stdio.h>

int main() {

    int n1,n2,n3,n4,n5;

    printf("Enter Subject Marks(N1) :");

    scanf("%d",&n1);

    printf("Enter Subject Marks(N2) :");

    scanf("%d",&n2);

    printf("Enter Subject Marks(N3) :");

    scanf("%d",&n3);

    printf("Enter Subject Marks(N4) :");

    scanf("%d",&n4);

    printf("Enter Subject Marks(N5) :");

    scanf("%d",&n5);

    if(n1>33 && n2>33 && n3>33 && n4>33 && n5>33)

      printf("PASSED!! Congrats ");

    else

      printf("Failed!! Better Luck Next Time ");

    return 0;

}

**Output**

Enter Subject Marks(N1) :55

Enter Subject Marks(N2) :66

Enter Subject Marks(N3) :77

Enter Subject Marks(N4) :88

Enter Subject Marks(N5) :66

PASSED!! Congrats

1. **Write a program to check whether a given alphabet is in uppercase or lowercase.**

**Code**

#include<stdio.h>

int main() {

    char n;

    printf("Check whether a given alphabet is in uppercase or lowercase : \n");

    printf("Enter a alphabet :");

    scanf("%c",&n);

    if ( n>='A' && n<='Z')

      printf("Upper Case Alphabet");

    else if (n>='a' && n<='z')

      printf("Lower Case Alphabet");

    else

      printf("Wrong Input");

    return 0;

}

**Output**

Enter a alphabet :A

Upper Case Alphabet

1. **Write a program to check whether a given number is divisible by 3 and divisible by 2.**

**Code**

#include<stdio.h>

int main() {

    int n;

    printf("Enter a Number :");

    scanf("%d",&n);

    if(n%3==0 && n%2==0)

    printf("Number is divisible by 3 and 2");

    else

     printf("Number is not divisible by 3 and 2");

    return 0;

}

**Output**

Enter a Number :6

Number is divisible by 3 and 2

1. **Write a program to check whether a given number is divisible by 7 or divisible by 3.**

**Code**

#include<stdio.h>

int main() {

    int n;

    printf("Enter a Number :");

    scanf("%d",&n);

    if(n%7==0 || n%3==0)

     printf("Number is divisible by 7 or 3");

    else

     printf("Number is not divisible by 7 or 3");

    return 0;

}

**Output**

Enter a Number :6

Number is divisible by 7 or 3

1. **Write a program to check whether a given number is positive, negative or zero.**

**Code**

#include<stdio.h>

int main() {

    int n;

    printf("Enter a Number :");

    scanf("%d",&n);

    if(n>0)

     printf("Number is Positive");

    else if (n==0)

     printf("Number is Zero");

    else

     printf("Number is Negative");

    return 0;

}

**Output**

Enter a Number :-1

Number is Negative

1. **Write a program to check whether a given character is an alphabet (uppercase), an alphabet (lower case), a digit or a special character.**

**Code**

#include<stdio.h>

int main() {

    char n;

    printf("Check whether a given alphabet is in uppercase or lowercase : \n");

    printf("Enter a (alphabet/digit/specialcharacter) :");

    scanf("%c",&n);

    if ( n>='A' && n<='Z')

      printf("Upper Case Alphabet");

    else if (n>='a' && n<='z')

      printf("Lower Case Alphabet");

    else if ((n>=48 && n<=57) || (n>=0 && n<=47) || (n>=58 && n<=64) || (n>=91 && n<=96) || (n>=123 && n<=127))

      printf("It is a Digit or a Special Character");

    else

      printf("wrong input may be Control Charaters");

    return 0;

}

**Output**

Enter a (alphabet/digit/specialcharacter) :1

It is a Digit or a Special Character

1. **Write a program which takes the length of the sides of a triangle as an input. Display whether the triangle is valid or not.**

**Code**

**Output**

#include<stdio.h>

#include<math.h>

int main() {

    int a,b,c,d;

    printf("In a Triangle : \n");

    printf("Enter side (a) :");

    scanf("%d",&a);

    printf("Enter side (b) :");

    scanf("%d",&b);

    printf("Enter side (c) :");

    scanf("%d",&c);

    if (a + b <= c || a + c <= b || b + c <= a)

      printf("Triangle is not valid");

    else

      printf("Triangle is valid");

    return 0;

}

**Output**

In a Triangle :

Enter side (a) :7

Enter side (b) :3

Enter side (c) :2

Triangle is not valid

1. **Write a program which takes the month number as an input and display number of days in that months**

**Code**

#include<stdio.h>

int main() {

    int n;

    printf("Enter Month Number :");

    scanf("%d",&n);

    if(n==1 || n==3 || n==5 || n==7 || n==8 || n==10 || n==12)

     printf("Month Has 31 Days");

    else if (n==2)

     printf("Month Has 29 Days");

    else if(n==4 || n==6 || n==9 || n==11)

     printf("Month Has 30 Days");

    else

     printf("Wrong input Enter Month number b/w (1-12)");

    return 0;

}

**Output**

Enter Month Number :2

Month Has 29 Days