//Assignment - 3 Decision Control Statements

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

#include<stdio.h>

int main()

{

    int x;

    printf("Enter a Number:-");

    scanf("%d",&x);

    if(x>0)

    printf("Positive\n");

    else

    printf("Non-Positive\n");

    return 0;

}

//2. Write a program to check whether a given number is divisible by 5 or not

#include<stdio.h>

int main()

{

    int x;

    printf("Enter a Number:-");

    scanf("%d",&x);

    if(x%5==0)

    printf("Divisible by 5\n");

    else

    printf("Not Divisible by 5\n");

    return 0;

}

/\*3. Write a program to check whether a given number is an even number or an odd

number.\*/

#include<stdio.h>

int main()

{

    int x;

    printf("Enter a Number:-");

    scanf("%d",&x);

    if(x%2==0)

    printf("The number %d is even\n",x);

    else

    printf("The Number %d is odd\n",x);

    return 0;

}

/\*4. Write a program to check whether a given number is an even number or an odd

number without using % operator.\*/

#include<stdio.h>

int main()

{

    int x;

    printf("Enter a Number:-");

    scanf("%d",&x);

    if(x&1)

    printf("The number %d is odd\n",x);

    else

    printf("The Number %d is even\n",x);

    return 0;

}

//5. Write a program to check whether a given number is a three-digit number or not.

#include<stdio.h>

int main()

{

    int x;

    printf("Enter a Three digit Number:-");

    scanf("%d",&x);

    if(x>99 && x<1000)

    printf("The number %d is Three Digit\n",x);

    else

    printf("The Number %d is Not Three Digit\n",x);

    return 0;

}

//6. Write a program to print greater between two numbers. Print one number of both are

//the same.

#include<stdio.h>

int main()

{

    int a,b;

    printf("Enter Two Numbers:-");

    scanf("%d%d",&a,&b);

    if(a>b)

    printf("%d is Greater",a);

    else if (b>a)

    {

        printf("%d is Greater",b);

    }

    else

    printf("Both Numbers are equal\n");

    return 0;

}

/\*7. Write a program to check whether roots of a given quadratic equation are real &

distinct, real & equal or imaginary roots \*/

#include<stdio.h>

int main()

{

    int a,b,c;

    printf("Write Coefficient of x^2,Co-efficient of x^1 and co-efficient of x^0:-");

    scanf("%d%d%d",&a,&b,&c);

    double Disc=b\*b-4\*a\*c;

    if(Disc>0)

    printf("The Roots of the Given Quadratic eqution are real and distinct ");

    else if (Disc<0)

    {

        printf("The Roots of the Given Quadratic eqution are imaginary ");

    }

    else

    printf("The Roots of the Given Quadratic eqution are real and equal\n");

    return 0;

}

/\*8. Write a program to check whether a given year is a leap year or not.\*/

#include<stdio.h>

int main()

{

    int year;

    printf("Enter Year:-");

    scanf("%d",&year);

    if(year%100==0)

        if(year%400==0)

            printf("%d is Leap Year",year);

            else

            printf("%d is not Leap Year",year);

    else if(year%4==0)

        printf("%d is a Leap Year",year);

        else

            printf("%d is Not Leap Year\n");

    return 0;

}

/\*9. Write a program to find the greatest among three given numbers. Print number once

if the greatest number appears two or three times.\*/

#include<stdio.h>

int main()

{

    int a,b,c;

    printf("Enter Three Numbers:-");

    scanf("%d%d%d",&a,&b,&c);

    if(a>b && a>c)

        printf("%d is Larger",a);

        else if(b>c)

            printf("%d is Larger\n",b);

            else

            printf("%d is Larger",c);

    return 0;

}

/\*10. 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.\*/

#include<stdio.h>

int main()

{

    float sp,cp;

    printf("Enter Cost Price and Selling Price:-");

    scanf("%f%f",&cp,&sp);

    if(sp>cp)

        printf("Percentage Profit=%f",(sp-cp)/cp\*100);

        else if(sp<cp)

            printf("Percentage Profit=%f",(cp-sp)/cp\*100);

            else

            printf("Percentage Profit=%f",(sp-cp)/cp\*100);

    return 0;

}

/\*11. 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.\*/

#include<stdio.h>

int main()

{

    int a,b,c,d,e,f;

    printf("Enter 5 Subject Marks");

    scanf("%d%d%d%d%d",&a,&b,&c,&d,&e);

    if(a>33 && b>33 && c>33 && d>33 && e>33)

        printf("Student is Pass");

        else

            printf("Student is Fail");

    return 0;

}

/\*12. Write a program to check whether a given alphabet is in uppercase or lowercase.\*/

#include<stdio.h>

int main()

{

    char c;

    printf("Enter Character:-");

    scanf("%c",&c);

    if('A'<=c && c<='Z')

        printf("%c is in Uppercase",c);

        else if('a'<=c && c<='z')

            printf("%c is in Lowercase",c);

        return 0;

}

/\*13. Write a program to check whether a given number is divisible by 3 and divisible by 2.\*/

#include<stdio.h>

int main()

{

    int num;

    printf("Enter Number:-");

    scanf("%d",&num);

    if(num%2==0 && num%3==0)

    printf("%d is divisible by 2 and 3",num);

    else

    printf("%d is not divisible by 2 and 3",num);

      return 0;

}

/\*14. Write a program to check whether a given number is divisible by 7 or divisible by 3.\*/

#include<stdio.h>

int main()

{

    int num;

    printf("Enter Number:-");

    scanf("%d",&num);

    if(num%7==0 || num%3==0)

    printf("%d is divisible by 3 or 7",num);

    else

    printf("%d is not divisible by 3 or 7",num);

      return 0;

}

/\*15. Write a program to check whether a given number is positive, negative or zero.\*/

#include<stdio.h>

int main()

{

    int num;

    printf("Enter Number:-");

    scanf("%d",&num);

    if(num>0)

    printf("%d is positive",num);

    else if(num<0)

    printf("%d is Negative",num);

    else

    printf("% d is Zero",num);

      return 0;

}

/\*16. Write a program to check whether a given character is an alphabet (uppercase), an

alphabet (lower case), a digit or a special character.\*/

#include<stdio.h>

int main()

{

    char c;

    printf("Enter a Character:-");

    scanf("%c",&c);

    if('A'<c && c<'Z')

    printf("%c is alphabet(uppercase)",c);

    else if('a'<c && c<'z')

    printf("%c is alphabet(Lowercase)",c);

    else if('0'<c && c<'9')

    printf("%c is digit",c);

    else

    printf("%c is Special Character\n",c);

      return 0;

}

/\*17. Write a program which takes the length of the sides of a triangle as an input. Display

whether the triangle is valid or not.\*/

#include<stdio.h>

int main()

{

    int a,b,c;

    printf("Enter Three Sides Of A triangle:-");

    scanf("%d%d%d",&a,&b,&c);

    if(a+b>c && b+c>a && c+a>b)

    printf("Triangle is Valid\n");

    else

    printf("Trianle is Not Valid\n");

      return 0;

}

/\*18. Write a program which takes the month number as an input and display number of

days in that month\*/

#include<stdio.h>

int main()

{

    int month;

    printf("Enter month number:-");

    scanf("%d",&month);

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

    printf("31 days\n");

    else if(month==2)

    printf("28/29 Days\n");

    else

    printf("30 days");

      return 0;

}