**Assignment - 3 C, C++ and DSA in Depth with Job Assistance in Hindi**

**Decision Control Statements**

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

#include<stdio.h>

int main()

{

int a;

printf("Enter a number: \n");

scanf("%d",&a);

if(a<=0)

printf("The given number %d is non-positive",a);

else

printf("The given number %d is positive",a);

return 0;

}

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

#include<stdio.h>

int main()

{

int a;

printf("Enter a number: \n");

scanf("%d",&a);

if (a%5==0)

printf("The given number %d is divisible by 5",a);

else

printf("The given number %d is not divisible by 5",a);

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 a;

printf("Enter a number: \n");

scanf("%d",&a);

if ((a%2)==0)

printf("The given number %d is even",a);

else

printf("The given number %d is odd",a);

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 a;

printf("Enter a number: \n");

scanf("%d",&a);

if ((a&1)==1)

printf("The given number %d is odd",a);

else

printf("The given number %d is even",a);

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 a;

printf("Enter a number: \n");

scanf("%d",&a);

if ((a>99) && (a<1000))

printf("The given number %d is three digit number",a);

else

printf("The given number %d is not a three digit number",a);

return 0;

}

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

the same.

#include<stdio.h>

int main()

{

int a,b;

printf("Enter two numbers: \n");

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

if (a>b)

printf("Number %d is greater",a);

else if(a<b)

printf("Number %d is greater",b);

else

printf("Both numbers are equal",a);

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()

{

// ax^2 + bx + c = 0

double a,b,c,discriminant;

printf("Enter coefficients a, b and c:");

scanf("%lf %lf %lf",&a, &b, &c);

//Discriminant = b^2

discriminant = b\*b-4\*a\*c;

if (discriminant >0){

printf("Real and distinct\n");

}

else if(discriminant ==0){

printf("Real and equal\n");

}

else printf("Imaginary");

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 Leap Year;\n");

scanf("%d",&year);

if (((year%4==0)&&(year%100!=0))||(year%400==0))

printf("%d is a leap year\n",year);

else

printf("%d is not a leap year\n",year);

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:\n");

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

if((a>b)&&(a>c))

printf("%d is greatest\n",a);

else if ((b>a)&&(b>c))

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

else

printf("%d is greatest\n",c);

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

printf("Greatest number is repeated");

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()

{

int cp,sp;

printf("Enter cost price and selling price:\n");

scanf("%d %d",&cp,&sp);

if(sp-cp>0)

printf("The profit is %d percent",(((sp-cp)\*100)/cp));

else if (cp-sp>0)

printf("The loss is %d percent",(((cp-sp)\*100)/cp));

else

printf("There is no profit or loss");

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()

{

float s1,s2,s3,s4,s5;

printf("Enter marks of students for each subject:\n");

scanf("%f%f%f%f%f",&s1,&s2,&s3,&s4,&s5);

if((s1>33)&&(s2>33)&&(s3>33)&&(s4>33)&&(s5>33))

printf("The student is passed\n");

else

printf("The student is failed\n");

return 0;

}

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

#include<stdio.h>

int main()

{

char check;

printf("Enter a character\n");

scanf("%c",&check);

if((check>=65)&&(check<=90))

printf("Upper Case");

if((check>=97)&&(check<=122))

printf("Lower Case");

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 number;

printf("Enter a number;");

scanf("%d",&number);

if((number%3==0)&&(number%2==0))

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

else

printf("The number is not divisible by 3 and 2",number);

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 number;

printf("Enter a number;");

scanf("%d",&number);

if ((number%7==0)&&(number%3==0))

printf("The number %d is divisible by 7 and 3",number );

else if(number%7==0)

printf("The number %d is divisible by 7",number);

else if (number%3==0)

printf("The number %d is divisible by 3",number);

else

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

return 0;

}

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

#include<stdio.h>

int main()

{

int a;

printf("Enter a number: \n");

scanf("%d",&a);

if(a>0)

printf("The given number %d is positive",a);

else if(a<0)

printf("The given number %d is negative",a);

else

printf("The given number %d is zero",a);

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 check;

printf("Enter a character\n");

scanf("%c",&check);

if((check>=48)&&(check<=57))

printf("Digit");

else if((check>=65)&&(check<=90))

printf("Upper Case");

else if((check>=97)&&(check<=122))

printf("Lower Case");

else

printf("Special Character");

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 s1,s2,s3;

printf("Enter lengths of sides of a triangle:\n");

scanf("%d%d%d",&s1,&s2,&s3);

if(((s1+s2)>s3)&&((s2+s3)>s1)&&((s3+s1)>s1))

printf("The triangle is valid");

else

printf("The triangle is invalid");

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()

{

//Jan - 31, Feb - 28 or 29, March - 31, April = 30, May - 31, June - 30, July - 31, Aug - 31, Sept - 30, Oct - 31, Nov - 30, Dec - 31

int m;

printf("Enter month number\n");

scanf("%d",&m);

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

printf("Number of days is 31");

else if ((m==2))

printf("Number of days is 28 or 29");

else

printf("Number of days is 30");

return 0;

}