**Q1. Write a C program to perform input/output of all the basic data types**.

**Program :-**

#include<stdio.h>

int main()

{

int a,b;

printf("Enter the value of a\n");

scanf("%d",&a);

printf("Enter the value of b\n");

scanf("%d",&b);

**Q2. Write a C program to enter two numbers and find their sum.**

**Program :-**

#include<stdio.h>

int main()

{

int num1, num2, sum;

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

scanf("%d %d", &num1, &num2);

sum = num1 + num2;

printf("Sum of %d and %d is: %d", num1, num2, sum);

return 0;

}

**Q3. Write a C program to enter two numbers and perform all arithmetic operations.**

**Program :-**

#include<stdio.h>

int main()

{

int a,b,sum,sub,mul,div;

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

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

sum=a+b;

sub=a-b;

mul=a\*b;

div=a/b;

printf("Sum of %d and %d is: %d\n", a, b, sum);

printf("Sub of %d and %d is: %d\n", a, b, sub);

printf("mul of %d and %d is: %d\n", a, b, mul);

printf("div of %d and %d is: %d\n", a, b, div);

return 0

}

**Q4. Write a C program to enter length and breadth of a rectangle and find its perimeter.**

**Program :-**

#include<stdio.h>

int main()

{

int l,b,perimeter;

printf("Enter length and breadth of rectangle\n");

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

perimeter = 2\*(l+b);

printf("perimeter of rectangle =%d",perimeter);

return 0;

}

**Q5. Write a C program to enter length and breadth of a rectangle and find its area.**

**Program :-**

#include<stdio.h>

int main()

{

int l,b,area;

printf("Enter length and breadth of rectangle\n");

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

area = l\*b;

printf("area of rectangle =%d",area);

return 0;

}

**Q6. Write a C program to enter radius of a circle and find its diameter, circumference and area.**

**Program:-**

#include<stdio.h>

int main()

{

float r,dimeter,circumference,area;

printf("Enter the radius of circle\n");

scanf("%f",&r);

dimeter = 2\*r;

circumference = 2\*3.14\*r;

area = 3.14\*r\*r;

printf("dimeter of circle=%f\n",dimeter);

printf("circumference of circle=%f\n",circumference);

printf("area of circle=%f\n",area);

return 0;

}

**Q7. Write a C program to enter length in centimeter and convert it into meter and kilometer.**

**Program:-**

#include<stdio.h>

int main()

{

float cm,m,km;

printf("Enter the length in cm\n");

scanf("%f",& cm);

m = cm / 100.0;

km=cm / 1000000.0;

printf("length in m=%f\n",m);

printf("length in km=%f\n",km);

return 0;

}

**Q8. Write a C program to enter temperature in Celsius and convert it into Fahrenheit.**

**Program:-**

#include<stdio.h>

int main()

{

float C,F;

printf("enter the tempreture in celsius\n");

scanf("%f",&C);

F=1.8\*C+32;

printf("tempreture in fahrenheit = %f\n",F);

return 0;

}

**Q9. Write a C program to enter temperature in Fahrenheit and convert to Celsius.**

**Program:-**

#include<stdio.h>

int main()

{

float C,F;

printf("enter the tempreture in fahrenheit\n");

scanf("%f",&F);

C = (F-32)/1.8;

printf("tempreture in celsius = %f\n",C);

return 0;

}

**Q10. Write a C program to convert days into years, weeks.**

**Program:-**

#include<stdio.h>

int main()

{

float days,year,week;

printf("Enter the value of days\n");

scanf("%f",& days);

year=days/365;

week=days/7;

printf("year of days=%f\n",year);

printf("week of days=%f\n",week);

return 0;

}

**Q11. Write a C program to find power of any number x^y.**

**Program:-**

#include<stdio.h>

#include<math.h>

int main()

{

int base,expo,power;

printf("Enter the value of base: ");

scanf("%d",&base);

printf("Enter the value of exponent: ");

scanf("%d",&expo);

power=pow(base,expo);

printf("%d ^ %d = %d",base,expo,power);

return 0;

}

**Q12. Write a C program to enter any number and calculate its square root.**

**Program:-**

#include<stdio.h>

#include<math.h>

int main()

{

float a, b;

printf("enter the number\n");

scanf("%f",&a);

b= sqrt(a);

printf("square root of %f is = %f",a,b);

return 0;

}

**Q13. Write a C program to enter two angles of a triangle and find the third angle.**

**Program:-**

#include<stdio.h>

int main()

{

float a,b,c;

printf("Enter a and b angle of triangle:\n");

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

c = 180 - (a+b);

printf("third angle of triangle: %.2f ",c);

return 0;

}

**Q14. Write a C program to enter base and height of a triangle and find its area.**

**Program:-**

#include<stdio.h>

int main()

{

float a,b,area;

printf("Enter height and base of triangle:\n");

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

area = 0.5\*(a\*b);

printf("area of triangle =%f",area);

return 0;

}

**Q15. Write a C program to calculate area of an equilateral triangle.**

**Program:-**

#include<stdio.h>

int main()

{

float x,area;

printf("Enter the value length of a line\n");

scanf("%f",&x);

area = (1.7320/4)\*x\*x;

printf("area of equilateral triangle is=%f",area);

return 0;

}

**Q16. Write a C program to enter marks of five subjects and calculate total, average and percentage.**

**Program:-**

#include<stdio.h>

int main()

{

float maths,physics,chemistry,hindi,english,total,avg,persent,max\_marks;

printf("Enter the marks of maths\n");

scanf("%f",&maths);

printf("Enter the marks of physics\n");

scanf("%f",&physics);

printf("Enter the marks of chemistry\n");

scanf("%f",&chemistry);

printf("Enter the marks of hindi\n");

scanf("%f",&hindi);

printf("Enter the marks of english\n");

scanf("%f",&english);

printf("Enter the max marks of subjects\n");

scanf("%f",&max\_marks);

total=maths+physics+chemistry+hindi+english;

printf("the total marks of subjects=%f\n",total);

avg=total/5;

printf("avgrage marks of subjects=%f\n",avg);

persent=(total/max\_marks)\*100;

printf("persent out of %f marks =%f\n",max\_marks ,persent);

return 0;

}

**Q17. Write a C program to enter P, T, R and calculate Simple Interest.**

**Program:-**

#include<stdio.h>

int main()

{

float P,R,T,SI;

// P= initial principal balance

// R= interest rate

// T= time in year

// SI= simple interest

printf("Enter the value of P\n");

scanf("%f",&P);

printf("Enter the value of R\n");

scanf("%f",&R);

printf("Enter the value of T\n");

scanf("%f",&T);

SI=(P\*R\*T)/100;

printf("simple interest=%0.2f\n",SI);

return 0;

}

**Q18. Write a C program to enter P, T, R and calculate Compund Interest.**

**Program:-**

#include<stdio.h>

#include<math.h>

int main()

{

float P,R,T,CI;

// P= initial principal balance

// R= interest rate

// T= time in year

// CI= compund interest

printf("Enter the value of P\n");

scanf("%f",&P);

printf("Enter the value of R\n");

scanf("%f",&R);

printf("Enter the value of T\n");

scanf("%f",&T);

CI = P\*(pow((1+R/100),T))-1;

printf("compund interest=%0.2f\n",CI);

return 0; }

**1D Array**

**Q1. Write a C program to read and print elements of array.**

#include<stdio.h>

int main()

{

int arr[15],i,j,n;

printf("Please enter the length of array\n");

scanf("%d",&n);

printf("please Enter the elemant of array\n");

for(i=0;i<n;i++)

{

scanf("%d",&arr[i]);

}

for(i=0;i<n;i++)

{

printf("arr[%d] = %d\n",i,arr[i]);

}

}

**Q2. Write a C program to print all the negative elements in the array.**

#include<stdio.h>

int main()

{

int arr[15],i,j,n;

printf("Please enter the length of array\n");

scanf("%d",&n);

printf("please Enter the elemant of array\n");

for(i=0;i<n;i++)

{

printf("arr[%d] = ",i);

scanf("%d",&arr[i]);

}

printf("printing the all negetive elements");

for(i=0;i<n;i++)

{

if(arr[i]<0)

printf("arr[%d] = %d\n",i,arr[i]);

}

}

**Q3. Write a C program to find sum of all array elements.**

#include<stdio.h>

int main()

{

int marks[4],n,sum=0;

printf("enter the length of array :");

scanf("%d",&n);

for(int i=0;i<n;i++)

{

printf("enter the %d number :",i+1);

scanf("%d",&marks[i]);

sum+=marks[i];

}

printf("sum of all array elements = %d",sum);

return 0;

}

**Q4. Write a C program to find maximum and minimum elements in an array.**

#include<stdio.h>

int main()

{

int value[5],n;

int temp;

printf("enter the length of array :");

scanf("%d",&n);

for(int i=0;i<n;i++)

{

printf("value[%d] = ",i);

scanf("%d",&value[i]);

}

for(int i=0;i<n;i++)

{

for(int j=i+1;j<n;j++)

{

if(value[i]>value[j])

{

temp=value[i];

value[i]=value[j];

value[j]=temp;

}

}

}

printf("\n");

printf("minimun elemant of an array is= %d\n",value[0]);

printf("maximum elemant of an array is= %d",value[n-1]);

return 0;

}

**Q5. Write a C program to find second largest elements in an array.**

#include<stdio.h>

int main()

{

int value[5],n,temp;

printf("enter the length of array :");

scanf("%d",&n);

for(int i=0;i<n;i++)

{

printf("value[%d] = ",i);

scanf("%d",&value[i]);

}

for(int i=0;i<n;i++)

{

for(int j=i+1;j<n;j++)

{

if(value[i]>value[j])

{

temp=value[i];

value[i]=value[j];

value[j]=temp;

}

}

}

printf("\n");

printf("second largest elemant of an array is= %d",value[n-2]);

return 0;

}

**Q6. Write a C program to count total number of even and odd elements in an array.**

#include<stdio.h>

int main()

{

int arr[15],i,len,a=0,b=0;

printf("enter the size of array\n");

scanf("%d",&len);

printf("print the array elemants\n");

for(i=0;i<len;i++)

{

scanf("%d",&arr[i]);

}

for(i=0;i<len;i++)

{

arr[i]%2==0?a++:b++;

}

printf("the number of even elements = %d\n",a);

printf("the number of odd elements = %d\n",b);

}

**Q7. Write a C program to count total number of negative elements in an array.**

#include<stdio.h>

int main()

{

int arr[15],i,j,n;

printf("Please enter the length of array\n");

scanf("%d",&n);

printf("please Enter the elemant of array\n");

for(i=0;i<n;i++)

{

printf("arr[%d] = ",i);

scanf("%d",&arr[i]);

}

printf("printing the all negetive elements");

for(i=0;i<n;i++)

{

if(arr[i]<0)

printf("arr[%d] = %d\n",i,arr[i]);

}

}

**Q8. Write a C program to copy all elements from an array to another array.**

#include<stdio.h>

int main()

{

int arr1[15],i,n,arr2[15];

printf("enter the size of array\n");

scanf("%d",&n);

printf("print the original array elemants\n");

for(i=0;i<n;i++)

{

printf("arr1[%d] = ",i);

scanf("%d",&arr1[i]);

}

for(i=0;i<n;i++)

{

arr2[i]=arr1[i];

}

printf("printing the copeid array\n");

for(i=0;i<n;i++)

{

printf("arr2[%d] = %d\n",i,arr2[i]);

}

}