

ASSIGNMENT C-PROGRAMING

GLA-UNIVERSITY

SECTION - G ABHISHEK VASHISTH

// Q1. Hello, World! Program

```
#include<stdio.h>
void main()
{

    printf("Hello,World!");

}
```

// Q2. C Program to Print an Integer (Entered by the User)

```
#include<stdio.h>
void main()
{
    int x;

    printf("Enter integer: ");
    scanf("%d",&x);
    printf("Integer: %d",x);

}
```

// Q3. C Program to Add Two Integers.

```
#include<stdio.h>
void main()
{
    int a,b,sum;
    printf("\nEnter 1st no.= ");
```

```
scanf("%d",&a);
printf("\nEnter 2nd no.= ");
scanf("%d",&b);
sum=a+b;
printf("\n\nSum of %d and %d = %d",a,b,sum);
}
```

//Q4. C Program to Multiply Two Floating-Point Numbers.

```
#include<stdio.h>
void main()
{
    float a,b,m;
    printf("\nEnter 1st no.= ");
    scanf("%f",&a);
    printf("\nEnter 2nd no.= ");
    scanf("%f",&b);
    m=a*b;
    printf("\n\nMultiplication of %f and %f = %f",a,b,m);
}
```

// Q5. C Program to Find ASCII Value of a Character.

```
#include<stdio.h>
void main()
{
    char ch;
    printf("Enter the character: ");
    scanf("%c",&ch);
    printf("ASCII value of %c = %d",ch,ch);
}
```

// Q6. C Program to Compute Quotient and Remainder.

```
#include<stdio.h>
void main()
{
    int x,y,q,r;

    printf("Enter Divisor: ");
    scanf("%d",&x);
    printf("\nEnter Dividend: ");
    scanf("%d",&y);

    q = y / x;
    r = y % x;

    printf("\nQuotient: %d",q);
    printf("\nRemainder: %d",r);
}
```

// Q7. C Program to Find the Size of int, float, double and char.

```
#include<stdio.h>
void main()
{
    int a,b,c,d;

    a=sizeof(int);
    b=sizeof(float);
    c=sizeof(double);
    d=sizeof(char);

    printf("\nSizeof(int): %d",a);
    printf("\nSizeof(float): %d",b);
    printf("\nSizeof(double): %d",c);
    printf("\nSizeof(char): %d",d);
}
```

// Q8. C Program to Demonstrate the Working of Keyword long.

```
#include<stdio.h>
void main()
{
    long l;
    printf("Enter the value: ");
    scanf("%ld",&l);
    printf("Value: %ldt",l);
}
```

// Q9. C Program to Swap Two Numbers.

```
#include<stdio.h>
void main()
{
    float x,y;

    printf("\nEnter 1st value: ");
    scanf("%f",&x);
    printf("\nEnter 2nd value: ");
    scanf("%f",&y);
    printf("\nOriginal value: \nx = %f \ny = %f",x,y);

    x=x+y;
    y=x-y;
    x=x-y;

    printf("\nValue after swap: \nx = %f \ny = %f",x,y);
}
```

// Q10. C Program to solve area of square.

```
#include<stdio.h>
void main()
{
```

```
float s,a;

printf("\nEnter side of a square: ");
scanf("%f",&s);

a = s * s;

printf("Area of a square: %f",a);
}
```

// Q11. C Program to find area of triangle using herons formula.

```
#include<stdio.h>
#include<math.h>
void main()
{
    float s,a,b,c,A;

    printf("\nEnter 1st side: ");
    scanf("%f",&a);
    printf("\nEnter 2nd side: ");
    scanf("%f",&b);
    printf("\nEnter 3thd side: ");
    scanf("%f",&c);

    s=(a+b+c)/2;
    A=sqrt(s*(s-a)*(s-b)*(s-c));
    printf("\nArea of a triangle : %f",A);
}
```

//Q12. C program to find area of trapezium.

```
#include<stdio.h>
void main()
{
    float b1,b2,h,a;
```

```
printf("\nEnter base 1 of a trapezium: ");
scanf("%f",&b1);
printf("\nEnter base 2 of a trapezium: ");
scanf("%f",&b2);
printf("\nEnter height of a trapezium: ");
scanf("%f",&h);
```

```
a = h*(b1+b2)/2;
```

```
printf("Area of a trapezium: %f",a);
}
```

// Q13. C program to find volume of sphere.

```
#include<stdio.h>
void main()
{
    float r,v;
    printf("\nEnter radius of a sphere: ");
    scanf("%f",&r);

    v=4*3.14*r*r*r/3;

    printf("\n Volume of a sphere: %f",v);
}
```

// Q14. Write a C program to perform input/output of all basic data types.

```
#include<stdio.h>
void main()
{
    int i;
    char ch;
    double d;
    float f;

    printf("Use of basic data types:");
```

```
printf("\nEnter value(char): ");
scanf("%c",&ch);
printf("\nEnter value(int): ");
scanf("%d",&i);
printf("\nEnter value(double): ");
scanf("%lf",&d);
printf("\nEnter value(float): ");
scanf("%f",&f);
```

```
printf("\nValue(int): %d",i);
printf("\nValue(char): %c",ch);
printf("\nValue(double): %lf",d);
printf("\nValue(float): %f",f);
}
```

// Q15. Write a C program to enter two numbers and find their sum.

```
#include<stdio.h>
void main()
{
    float a,b,sum;
    printf("\nEnter 1st no.= ");
    scanf("%f",&a);
    printf("\nEnter 2nd no.= ");
    scanf("%f",&b);
    sum=a+b;
    printf("\n\nSum of %f and %f = %f",a,b,sum);
}
```

// Q16. Write a C program to enter two numbers and perform all arithmetic operations

```
#include<stdio.h>
void main()
{
    int x1,x2,a,b,c,d,e;
```

```
printf("\nEnter 1st number: ");
scanf("%d",&x1);
printf("\nEnter 2nd number: ");
scanf("%d",&x2);
```

```
a = x1+x2;
b = x1-x2;
c = x1*x2;
d = x1/x2;
e = x1%x2;
```

```
printf("\nArithmetic Operations \n %d + %d = %d \n %d - %d = %d \n %d * %d = %d \n %d / %d = %d \n %d %% %d = %d",x1,x2,a,x1,x2,b,x1,x2,c,x1,x2,d,x1,x2,e);
}
```

// Q17. Write a C program to enter length and breadth of a rectangle and find its perimeter.

```
#include<stdio.h>
void main()
{
    float l,b,p;

    printf("\nEnter the length of a reactangle: ");
    scanf("%f",&l);
    printf("\nEnter the breadth of a reactangle: ");
    scanf("%f",&b);

    p = 2*(l + b);

    printf("\nPerimeter of a rectangle: %f",p);
}
```

// Q18. Write a C program to enter length and breadth of a rectangle and find its area.

```
#include<stdio.h>
void main()
```



```

{
float l,b,a;

printf("\nEnter the length of a reactangle: ");
scanf("%f",&l);
printf("\nEnter the breadth of a reactangle: ");
scanf("%f",&b);

a = l * b;

printf("\nArea of a rectangle: %f",a);
}

```

/* Q19. Write a C program to enter radius of a circle and find its diameter, circumference and area. */

```

#include<stdio.h>
void main()
{
float r,d,circum,area;

printf("\nEnter the radius of a circle: ");
scanf("%f",&r);

d=2*r;
circum=2*3.14*r;
area=3.14*r*r;

printf("\nDiameter of a circle: %f",d);
printf("\nCircumference of a circle: %f",circum);
printf("\nArea of a circle: %f",area);
}

```

/* Q20. Write a C program to enter length in centimeter and convert it into meter and kilometer. */

```
#include<stdio.h>
void main()
{
    float cm,m,km;

    printf("\nEnter the value(centimeters): ");
    scanf("%f",&cm);

    m=cm/100;
    km=cm/100000;

    printf("\nValue in meters: %f",m);
    printf("\nValue in kilometers: %f",km);
}
```

// Q21. Write a C program to enter temperature in Celsius and convert it into Fahrenheit.

```
#include<stdio.h>
void main()
{
    float f,c;

    printf("Enter the temperature in celsius: ");
    scanf("%f",&c);

    f = (c*9/5)+32;

    printf("Temperature in fahrenheit: %f",f);
}
```

// Q22. Write a C program to enter temperature in Fahrenheit and convert to Celsius

```
#include<stdio.h>
void main()
{
    float f,c;
```

```
printf("Enter the temperature in fahrenheit: ");  
scanf("%f",&f);
```

```
c = (f-32)*5/9;
```

```
printf("Temperature in celsius: %f",c);  
}
```

// Q23. Write a C program to convert days into years, weeks and days.

```
#include<stdio.h>
```

```
void main()
```

```
{
```

```
int x,b,y,d,w;
```

```
printf("Enter the days: ");
```

```
scanf("%d",&x);
```

```
y=x / 365;
```

```
b=x % 365;
```

```
w=b / 7;
```

```
d=b % 7;
```

```
printf("\nConversion of %d days in (Year,Weeks,Days): %d years %d weeks %d days",x,y,w,d);
```

```
}
```

// Q24. Write a C program to find power of any number x^y .

```
#include<stdio.h>
```

```
#include<math.h>
```

```
void main()
```

```
{
```

```
float x,y,a;
```

```
printf("\nEnter the value of x ( $x^y$ ): ");
```

```
scanf("%f",&x);
```

```
printf("\nEnter the value of y (x^y): ");
scanf("%f",&y);

a=pow(x,y);

printf("\nValue of x^y: %f",a);
}
```

// Q25. Write a C program to enter any number and calculate its square root.

```
#include<stdio.h>
#include<math.h>
void main()
{
    float x;

    printf("\nEnter the value: ");
    scanf("%f",&x);

    x=sqrt(x);

    printf("\nSquare root: %f",x);
}
```

// Q26. Write a C program to enter two angles of a triangle and find the third angle.

```
#include<stdio.h>
void main()
{
    float a1,a2,a3;

    printf("\nEnter 1st angle of a triangle: ");
    scanf("%f",&a1);
    printf("\nEnter 2nd angle of a triangle: ");
    scanf("%f",&a2);
```

```
a3=180-(a1+a2);
```

```
printf("\n3thd angle of a triangle: %f",a3);  
}
```

// Q27. Write a C program to enter base and height of a triangle and find its area.

```
#include<stdio.h>
```

```
void main()
```

```
{
```

```
float a,b,h;
```

```
printf("\nEnter the base of a triangle: ");
```

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

```
printf("\nEnter the height of a triangle: ");
```

```
scanf("%f",&h);
```

```
a=b*h/2;
```

```
printf("\nArea of a triangle: %f",a);
```

```
}
```

// Q28. Write a C program to calculate area of an equilateral triangle.

```
#include<stdio.h>
```

```
void main()
```

```
{
```

```
float a,s;
```

```
printf("\nEnter the side of an equilateral triangle: ");
```

```
scanf("%f",&s);
```

```
a=1.732*s*s/4;
```

```
printf("\nArea of an equilateral triangle: %f",a);
```

```
}
```

// Q29. Write a C program to enter marks of five subjects and calculate total, average and
// percentage.

```
#include<stdio.h>
void main()
{
    float x1,x2,x3,x4,x5,avg,p,t;

    printf("\nEnter marks of 1st subject: ");
    scanf("%f",&x1);
    printf("\nEnter marks of 2nd subject: ");
    scanf("%f",&x2);
    printf("\nEnter marks of 3rd subject: ");
    scanf("%f",&x3);
    printf("\nEnter marks of 4th subject: ");
    scanf("%f",&x4);
    printf("\nEnter marks of 5th subject: ");
    scanf("%f",&x5);

    t=x1+x2+x3+x4+x5;
    avg=t/5;
    p=(t/500)*100;

    printf("\nTotal marks: %f",t);
    printf("\nAverage marks: %f",avg);
    printf("\nPercentage: %f",p);
}
```

// Q30. Write a C program to enter P, T, R and calculate Simple Interest.

```
#include<stdio.h>
void main()
{
    float p,r,si;
    int t;
```

```
printf("\nEnter principal: ");
scanf("%f",&p);
printf("\nEnter rate: ");
scanf("%f",&r);
printf("\nEnter time: ");
scanf("%d",&t);

si=p*r*t/100;

printf("\nSimple interest: %f",si);
}
```

// Q31. Write a C program to enter P, T, R and calculate Compound Interest.

```
#include<stdio.h>
#include<math.h>
void main()
{
    float p,r,a,ci;
    int t;

    printf("\nEnter principal: ");
    scanf("%f",&p);
    printf("\nEnter rate: ");
    scanf("%f",&r);
    printf("\nEnter time: ");
    scanf("%d",&t);

    a=p*pow((1+r/100),t);
    ci=a-p;

    printf("\nCompound interest: %f",ci);
}
```

// Q32. Write a C program to show the working of escape characters in C programming.

```

#include <stdio.h>
void main()
{

printf("\nHello World\b\b\b\bFun"); // \b escape sequence
    printf("\nHello\n");           // \n escape sequence
    printf("C Programming");
    printf("\nHello \t Friends"); // \t escape sequence
    printf("\nHello Sir");
    printf("\v Welcome to C");     // \v escape sequenc
    printf("\nC\\C++");           // escape sequence to print backslash.
    printf("\nHello progra \r mming"); // \r escape sequence
    printf("\n\ ' Hello World"); // \ ' escape sequence and \" escape sequence to print single
quote and double quote.
printf("\n\" Hello World");

}

```

// Q33. Write a C program to input a mobile number and display 10 digits on the screen.

```

#include<stdio.h>
void main()
{
    unsigned long num;
    printf("\nEnter the mobile no. : ");
    scanf("%lu",&num);
    printf("\nMOBILE NO.: %lu",num);
}

```

/* Q35 Write a program to print the following line (Assume the total value is contained in a variable named cost) The sales total is : \$ 172.53 */

```

#include<stdio.h>
void main()
{

```



```
float cost=172.53;
printf("\nThe sales total is : $%.2f",cost);
}
```

/* Q36. Raju got 6 and half apples from each of Raghu, Sheenu and Akash. He wants to know how many apples he has in total without adding them. Write a program which could help Raju in doing this. */

```
#include<stdio.h>
void main()
{
    float x;
    x=3*6*0.5;
    printf("\nTotal apples Raju have: %f",x);
}
```

// Q37. Write a program that prints the floating point value in exponential format correct to two decimal places.

```
#include<stdio.h>
void main()
{
    float x;
    printf("Enter the float value: ");
    scanf("%f",&x);
    printf("Value in exponent form: %.2e",x);
}
```

/* Q38. The population of a city is 30000. It increases by 20 % during first year and 30% during the second year. Write a program to find the population after two years? */

```
#include<stdio.h>
void main()
```

```

{
int a,p;

a=30000*20/100;
p=30000+a;
a=p*30/100;
p=p+a;

printf("\nPopulation of city: 30000");
printf("\nPopulation of city after 2 year: %d",p);
}

```

/* Q39. Write a program to calculate salary of an employee, given his basic pay (entered by user), HRA=15% of the basic pay and TA=20% of the basic pay.*/

```

#include<stdio.h>
void main()
{
float bs,hr,da,gs;

printf("\nEnter the basic salary = ");
scanf("%f",&bs);

hr=bs*15/100;
da=bs*20/100;
gs=hr+da+bs;

printf("\n\nBasic salary = %f ",bs);
printf("\n\nSalary of an employee = %f ",gs);
}

```

/* Q40. Write a program to find the slope of a line and angle of inclination that passes through two points P and Q with coordinates (xp, yp) and (xq, yq) respectively. */

```

#include<stdio.h>
#include<math.h>

```

```

void main()
{
    float m,a,xp,yp,xq,yq;

    printf("\nEnter x-coordinate of P point: ");
    scanf("%f",&xp);
    printf("\nEnter y-coordinate of P point: ");
    scanf("%f",&yp);
    printf("\nEnter x-coordinate of Q point: ");
    scanf("%f",&xq);
    printf("\nEnter y-coordinate of Q point: ");
    scanf("%f",&yq);

    m = (yq-yp)/(xq-xp);
    a= tanh(m);

    printf("\nSlope of a line: %f",m);
    printf("\nAngle of inclination: %f",a);
}

```

// Q42. Write a program to calculate the frequency (f) of a given wave with wavelength (?)
 // and speed (c), where $c = ? * f$.

```

#include<stdio.h>
void main()
{
    float f,c,w;
    printf("\nEnter the wavelength of wave: ");
    scanf("%f",&w);
    printf("\nEnter the speed of wave: ");
    scanf("%f",&c);
    f=c/w;
    printf("\nFrequency of wave: %.2f",f);
}

```

/* Q43. A car travelling at 30 m/s accelerates steadily at 5 m/s² for a distance of 70 m. What

is the final velocity of the car? [Hint: $v^2 = u^2 + 2as$] */

```
#include<stdio.h>
#include<math.h>
void main()
{
    float v;
    int u=30,a=5,s=70;
    v=sqrt(u*u + 2*a*s);
    printf("\nFinal velocity of car: %.2f m/s",v);
}
```

/* Q44. A horse accelerates steadily from rest at 4 m/s² for 3s.

(a) What is its final velocity?

(b) How far has it travelled?

[Hint: (a) $v = u + at$ (b) $s = ut + at^2$] */

```
#include<stdio.h>
void main()
{
    float v,s;
    int u=0,a=4,t=3;
    s=u*t+a*t*t/2;
    v=u+a*t;
    printf("\nAcceleration of horse: %d",a);
    printf("\nInitial velocity of horse: %d",u);
    printf("\nFinal velocity of horse: %.2f m/s",v);
    printf("\nDistance travelled by horse: %.2f m",s);
}
```

// Q45. Write a C program to read an amount (integer value) and break the amount into
// smallest possible number of bank notes.

```
#include<stdio.h>
void main()
{
```

```
int amt,a,b,c,d,e,f,g,h,i,j,k,l,m;  
printf("\nEnter amount: ");  
scanf("%d",&amt);
```

```
a=amt/2000;  
b=amt%2000;  
c=b/500;  
d=b%500;  
e=d/100;  
f=d%100;  
g=f/50;  
h=f%50;  
i=h/10;  
j=h%10;  
k=j/5;  
l=j%5;  
m=l/1;
```

```
if(a!=0)  
printf("2000 Rs notes: %d",a);  
if(c!=0)  
printf("\n500 Rs notes: %d",c);  
if(e!=0)  
printf("\n100 Rs notes: %d",e);  
if(g!=0)  
printf("\n50 Rs notes: %d",g);  
if(i!=0)  
printf("\n10 Rs notes: %d",i);  
if(k!=0)  
printf("\n5 Rs notes: %d",k);  
if(m!=0)  
printf("\n1 Rs notes: %d",m);  
}
```

/* Q46. Write a C program to convert a given integer (in seconds) to hours, minutes and seconds. */

```
#include<stdio.h>  
void main()
```

```

{

int x,b=0,h=0,s=0,m=0;
printf("Enter the seconds: ");
scanf("%d",&x);

if(x >= 60)
{
    m = x / 60;
    s = x % 60;
    if(m >= 60)
    {
        h = m / 60;
        m = m % 60;
        printf("\nConversion of %d seconds in (Hours,Minutes,Seconds): %d hours %d minutes %d
seconds",x,h,m,s);
    }
    else
        printf("\nConversion of %d seconds in (Hours,Minutes,Seconds): %d minutes %d
seconds",x,m,s);
}
else
    printf("\nConversion of %d seconds in (Hours,Minutes,Seconds): %d seconds",x);

}

```

/* Q47. Write a C program to convert a given integer (in days) to years, months and days, assumes that all months have 30 days and all years have 365 days. */

```

#include<stdio.h>
void main()
{

int x,b=0,y=0,d=0,m=0;
printf("Enter the days: ");
scanf("%d",&x);

if(x>30 && x<365)
{

```

```

    m = x / 30;
    d = x % 30;
    printf("\nConversion of %d days in (Year,Month,Days): %d months %d days",x,m,d);
}
else
{
    if(x >= 365)
    {
        y = x / 365;
        b = x % 365;
        if(b > 30)
        {
            m = b / 30;
            d = b % 30;
            printf("\nConversion of %d days in (Year,Month,Days): %d years %d months %d
days",x,y,m,d);
        }
        else
            printf("\nConversion of %d days in (Year,Month,Days): %d years %d months %d
days",x,y,m,b);
    }

    else
        printf("\nConversion of %d days in (Year,Month,Days): %d days",x,x);
}
}

```