**Assignment -1**

NAME: MHETRE ASMITA VIJAYKUMAR

Experimental training course on

c-programming

//1. Accept dimensions of a cylinder and print the surface area and volume (Hint: surface area = 2pr 2 + 2prh, volume = pr 2 h)

#include<stdio.h>

int main()

{

float r,h;

float area ,volume;

printf("enter the values of r and h:\n");

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

area =(2\*3.14\*r)\*(r+h);

volume=(3.14\*r\*r\*h);

printf("surface area of cylinder=%f", area);

printf("\nvolume=%f",volume);

return 0;

}

//2. Accept temperatures in Fahrenheit (F) and print it in Celsius(C) and Kelvin (K) (Hint: C=5/9(F-32), K = C + 273.15)

#include<stdio.h>

int main()

{

float F,C,K;

printf("enter temperature in farenhit ");

scanf("%f",&F);

C=((F-32)\*5)/9;

K=(C+273);

printf("temperature in celcius= %f",C);

printf("\ntemperature in kelvin is= %f",K);

return 0;

}

/\*3. Accept initial velocity (u), acceleration (a) and time (t).

Print the final velocity (v) and the distance (s) travelled. (Hint: v = u + at, s = u + at2 ) \*/

#include<stdio.h>

int main()

{

float u,a,t,v,s;

printf(" enter inital velocity= ",u);

scanf("%f",&u);

printf("enter acceleration=",a);

scanf("%f",&a);

printf("enter time=",t);

scanf("%f",&t);

v=(u+a\*t);

s=(u\*t+a\*t\*t/2);

printf("final velocity=%f",v);

printf("\ndistance travelled=%f",s);

return 0;

}

/\*4. Accept inner and outer radius of a ring and print the perimeter and area of the ring

(Hint: perimeter = 2 p (a+b) , area = p (a2 -b2 ) ) \*/

#include<stdio.h>

int main()

{

float a,b,perimeter,area;

printf(" enter inner radius=",a);

scanf("%f",&a);

printf("enter outer radius=",b);

scanf("%f",&b);

perimeter=(2\*22/7\*(a+b));

area=(22/7\*(a\*a-b\*b));

printf("The perimeter of the ring=%f",perimeter);

printf("\nThe area of the ring=%f",area);

return 0;

}

/\*5. Accept two numbers and print arithmetic and harmonic mean of the two numbers

(Hint: AM= (a+b)/2 , HM = ab/(a+b) ) \*/

#include<stdio.h>

int main()

{

float a,b,AM,HM;

printf("enter two numbers=",a,b);

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

AM=(a+b)/2;

HM=a\*b/(a-b);

printf("The arithmatic mean of two numbers=%f",AM);

printf("\nThe Harmonic mean of two numbers=%f",HM);

return 0;

}

/\*6. Accept three dimensions length (l), breadth(b) and height(h) of a cuboid and print surface area and volume

(Hint : surface area=2(lb+lh+bh ), volume = lbh ) \*/

#include<stdio.h>

int main()

{

float l,b,h;

float area,volume;

printf("enter the value of length=",l);

scanf("%f",&l);

printf("enter the value of breadth=",b);

scanf("%f",&b);

printf("enter the value of height=",h);

scanf("%f",&h);

area=2\*(l\*b+b\*h+b\*h);

volume=(l\*b\*h);

printf("hence the surface area of cuboid is=%f", area);

printf("\nhence the volume of cuboid is =%f",volume);

return 0;

}

//7. Accept a character from the keyboard and display its previous and next character in order.

// Ex. If the character entered is ‘d’, display “The previous character is c”, “The next character is e”

#include<stdio.h>

int main()

{

char p;

// here p represents any charecter

printf("enter an alphabet=");

scanf("%c",&p);

printf("The previous charecter is=%c",p-1);

printf("\nThe next charecter is=%c",p+1);

return 0;

}

//8. Accept a character from the user and display its ASCII value.

#include<stdio.h>

int main()

{

char a;

printf("enter the charecter=");

scanf("%c",&a);

printf(" the ASCII value of %c=",a);

return 0;

}

/\*9. Write a program to accept an integer and check if it is even or odd. \*/

#include<stdio.h>

int main()

{

int a;

printf("enter the number:");

scanf("%d",&a);

if(a%2==0)

{

printf("\nthe given inetger is an even number:%d",a);

}

else

{

printf("\n the given number is an odd number:%d",a);

}

}

/\*10. Write a program to accept three numbers and check whether the first is between the other two numbers.

Ex: Input 20 10 30. Output: 20 is between 10 and 30 \*/

#include<stdio.h>

int main()

{

float a1,a2,a3;

printf("enter the three numbers:");

scanf("%f%f%f",&a1,&a2,&a3);

if(a1>a2&&a1<a3)

{

printf("\n the number %f is in between other two %f and %f ",a2,a1,a3);

}

else

if(a1<a2&&a1>a3)

{

printf("n the number %f is not in between other two %f and %f",a2,a1,a3);

}

}

// 11. Write a program to accept a number and check if it is divisible by 5 and 7

#include<stdio.h>

int main()

{

int a;

printf("enter the number ");

scanf("%d",&a);

if(a%5==0,a%7==0)

{

printf(" then given number %d is divisible by 5 and 7 ",a);

}

else

{

printf(" then given number %d is not divisible by 5 and 7 ",a);

}

}

/\*12. Accept a character as input and check whether the character is a digit.

(Check if it is in the range ‘0’ to ‘9’ both inclusive)\*/

#include<stdio.h>

int main()

{

char c;

printf("enter the charecter=");

scanf("%c",&c);

if(0<=c<=9)

{

printf("it is digit",c);

}

else

{

printf("it is not digit",c);

}

}

/\*13. Write a program, which accepts annual basic salary of an employee and

calculates and displays the Income tax as per the following rules.

Basic: < 1,50,000 Tax = 0 1,50,000 to 3,00,000 Tax = 20% > 3,00,000 Tax = 30%\*/

#include<stdio.h>

int main()

{

float a,tax;

printf("enter the annual basic salary of an employee: ");

scanf("%f",&a);

if(a<1,50,000)

{

printf("payable tax for an employee is = 0");

}

else if(1,50,000<=a&&a<=3,00,00)

{

tax=(0.2\*a);

printf("\n payable tax for an employee is%f =",tax);

}

else(a>3,00,000);

{

tax=(0.3\*a);

printf("\n payable tax for an employee is =%f",tax);

}

}

//14. Accept a lowercase character from the user and check whether the character is a vowel or consonant. (Hint: a,e,i,o,u are vowels)

#include<stdio.h>

void main()

{

char ch;

printf("enter the charecter in lowercase=");

scanf("%c",&ch);

switch(ch)

{

case 'a':

printf("\n the charecter entered is vowel %c",ch);

break;

case 'e':

printf("\n the charecter entered is vowel %c",ch);

break;

case 'i':

printf("\n the charecter entered is vowel %c",ch);

break;

case 'o':

printf("\n the charecter entered is vowel %c",ch);

break;

case 'u':

printf("\n the charecter entered is vowel %c",ch);

break;

default:

{

printf(" \n The charecter entered is consonant %c",ch);

break;

//14. Accept a lowercase character from the user and check whether the character is a vowel or consonant. (Hint: a,e,i,o,u are vowels)

#include<stdio.h>

void main()

{

char ch;

printf("enter the charecter in lowercase=");

scanf("%c",&ch);

switch(ch)

{

case 'a':

printf("\n the charecter entered is vowel %c",ch);

break;

case 'e':

printf("\n the charecter entered is vowel %c",ch);

break;

case 'i':

printf("\n the charecter entered is vowel %c",ch);

break;

case 'o':

printf("\n the charecter entered is vowel %c",ch);

break;

case 'u':

printf("\n the charecter entered is vowel %c",ch);

break;

default:

{

printf(" \n The charecter entered is consonant %c",ch);

break;

/\*15. Write a program to check whether given character is a digit or a character in lowercase or uppercase alphabet.

(Hint ASCII value of digit is between 48 to 58 and Lowercase characters have ASCII values in the range of 97 to122, uppercase is between 65 and 90) \*/

#include<stdio.h>

int main()

{

char ch;

printf("Enter the charecter=");

scanf("%c",&ch);

if('0'>=ch&&ch<='9')

{

printf("The entered charecter is digit");

}

else if('a'>=ch&&ch<='z')

{

printf("The entered charecter is in lowercase");

}

else if('A'>=ch&&ch<='z')

{

printf("The entered charecter is in uppercase");

}

else

{

printf("you have entered special charecter");

}

return 0;

}