1. Write a C program to check Least significant Bit and Most Significant Bit is set or

unset.

**#include <stdio.h>**

**#define BITS sizeof(int) \* 8**

**void main()**

**{**

**int num,msb;**

**printf("Enter any number: ");**

**scanf("%d", &num);**

**{**

**if(num & 1)**

**printf("LSB of %d is set (1).", num);**

**else**

**printf("LSB of %d is unset (0).", num);**

**}**

**msb = 1 << (BITS - 1);**

**{**

**if((num & msb) == 1)**

**printf("MSB of %d is set (1).", num);**

**else**

**printf("MSB of %d is unset (0).", num);**

**}**

**}**

**2. Write a C program to find the factorial of a given number.**

#include <stdio.h>

void main()

{

int i, fact = 1, num;

printf("Enter the number \n");

scanf("%d", &num);

if (num <= 0)

fact = 1;

else

{

for (i = 1; i <= num; i++)

{

fact = fact \* i;

}

}

printf("Factorial of %d = %d\n", num, fact);

}

**3. WAP to Swapping nibbles in a byte.**

#include <stdio.h>

unsigned char swapNibbles(unsigned char x)

{

return ( (x & 0x0F)<<4 | (x & 0xF0)>>4 );

}

void main()

{

unsigned char x = 0xAB;

printf("%x", swapNibbles(x));

}

**4. WAP for Counting number of one’s and zero’s in an integer.**

#include<stdio.h>

void main()

{

int r, ones=0, zeroes=0,n;

printf("Enter a Number ");

scanf("%d",&n);

while(n!=0)

{

r=n%10;

if(r==1)

ones++;

if(r==0)

zeroes++;

n=n/10;

}

printf("\nNumber of ones are %d", ones);

printf("\nNumber of zeroes are %d", zeroes);

}

**5. WAP to find whether the given number is palindrome or not.**

#include <stdio.h>

void main()

{

int n,r, rev=0,temp;

printf("Enter a number\n");

scanf("%d", &n);

temp = n;

while (n>0)

{

r= n%10;

n=n/10;

rev=rev\*10+r;

}

if (temp==rev)

printf("\n given number is palindrome");

else

printf("\n given number isn't palindrome");

}

**6. WAP to find whether a year is leap year or not.**

#include <stdio.h>

void main()

{

int year;

printf("enter a year:");

scanf("%d",&year);

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

{

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

}

else

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

}

**7. WAP to convert a binary number to a decimal number.**

#include <stdio.h>

int binaryToDecimal(long binarynum)

{

int decimalnum = 0, temp = 0, remainder;

while (binarynum!=0)

{

remainder = binarynum % 10;

binarynum = binarynum / 10;

decimalnum = decimalnum + remainder\*pow(2,temp);

temp++;

}

}

void main()

{

long binarynum;

printf("Enter a binary number: ");

scanf("%ld", &binarynum);

printf("Equivalent decimal number is: %d", binaryToDecimal(binarynum));

}

**8. WAP to print a Fibonacci series**

#include <stdio.h>

void main()

{

int a=0,b=1,fib,n;

printf("enter a number\n");

scanf("%d",&n);

printf("%d\n%d\n",a,b);

fib=a+b;

while(fib<=n)

{

printf("%d\n",fib);

a=b;

b=fib;

fib=a+b;

}

}

**9. WAP to check whether entered number is Armstrong number or not**

#include <stdio.h>

void main()

{

int number, sum=0, rem=0,tempNumber;

printf("Enter an integer number: ");

scanf("%d", &number);

tempNumber=number;

while(tempNumber!=0)

{

rem=tempNumber%10;

sum=sum + (rem\*rem\*rem);

tempNumber/=10;

}

if(sum==number)

printf("%d is an Armstrong number.",number);

else

printf("%d is not an Armstrong number.",number);

}

**10.Access values into an array and arrange them in Ascending and Descending order.**

#include <stdio.h>

void main()

{

int a[100],n,i,j,temp;

printf("Array size: ");

scanf("%d",&n);

printf("Elements: ");

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

{

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

}

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

{

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

{

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

{

temp = a[i];

a[i] = a[j];

a[j] = temp;

}

}

}

printf("\n\nAscending : ");

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

{

printf(" %d ", a[i]);

}

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

{

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

{

if (a[j] < a[i])

temp = a[i];

a[i] = a[j];

a[j] = temp;

}

}

}

printf("\n\nDescending : ");

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

{

printf(" %d ", a[i]);

}

}

**11. Write a C program to create Simple Calculator using switch case.**

#include <stdio.h>

void main()

{

char op;

float num1, num2, result=0.0f;

printf("Enter [number 1][+ - \* /] [number 2]\n");

scanf("%f %c %f", &num1, &op, &num2);

switch(op)

{

case '+':

result = num1 + num2;

break;

case '-':

result = num1 - num2;

break;

case '\*':

result = num1 \* num2;

break;

case '/':

result = num1 / num2;

break;

default:

printf("Invalid operator");

}

printf("%.2f %c %.2f = %.2f", num1, op, num2, result);

}

**12.WAP to find second largest number in an array.**

#include<stdio.h>

void main()

{

int a[50];

int n,i,large,secondlarge;

printf("\n Enter number of elements: ");

scanf("%d",&n);

printf("\n Enter the elements: ");

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

{

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

}

large=secondlarge=a[0];

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

{

if(large<a[i])

{

secondlarge=large;

large=a[i];

}

else if(secondlarge<a[i] && a[i]!=large)

{

secondlarge=a[i];

}

}

printf("\n The Second Largest Element in the given Array: %d", secondlarge);

}

**13.WAP to print prime numbers using if condition and Bitwise operators only.**

#include<stdio.h>

void main(){

int num,i,count,n;

printf("Enter max range: ");

scanf("%d",&n);

for(num = 1;num<=n;num++){

count = 0;

for(i=2;i<=num/2;i++){

if(num%i==0){

count++;

break;

}

}

if(count==0 && num!= 1)

printf("%d ",num);

}

}

**14. Perform all arithmetic operations using functions.**

#include <stdio.h>

void main()

{

int a,b;

int sum, difference, product, modulo;

float quotient;

printf("Enter a,b:");

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

sum = a+b;

difference = a-b;

product = a\*b;

quotient = (float)a/b;

modulo = a%b;

printf("\nSum = %d", sum);

printf("\nDifference = %d", difference);

printf("\nMultiplication = %d", product);

printf("\nDivision = %.3f", quotient);

printf("\nRemainder = %d", modulo);

}

**15.Write a function for reading the array elements and return array elements to main**

**function.**

void printArray(int arr[], int size)

{

int i;

printf("Array elements are: ");

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

{

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

}

}

void main()

{

int arr[5];

printArray(arr, 5);

}