EXPERIMENTS

5	Convert Integer to Character
6	Count Specific Numbers
7	Perform arithmetic functions
8	Check a number for prime or not
9	Evaluate sine and cosine series
10	Solve a Quadratic Equation

Expt 5: Convert an integer to a character

AIM :

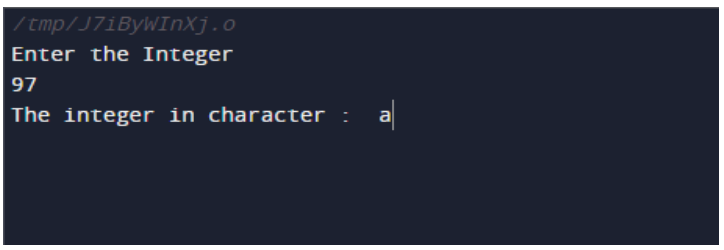
To convert an integer to a character

ALGORITHM:

- Declare a variable as type integer
- Read its value through the keyboard
- The entered number and ASCII value are checked
- If there is a match, display the ASCII value

```
//*************************************************************************** //
Program name : numtochar.c

// Author :Anantha Krishnan R J

// Date Written :09/06/2021

// Date Compiled :09/06/2021

// Aim of the Program :Convert an integer to a character
//***************************************************************************
//***************************************************************************

#include<stdio.h>

int main()

 {

   int n;

   printf("Enter the Integer\n");

   scanf("%d",&n);

   printf("The integer in character %c",n); }
```

OUTPUT :



Expt.6: Count Specific Numbers

AIM:

To count numbers between 1 and 100 which are not divisible by 2, 3 and 5

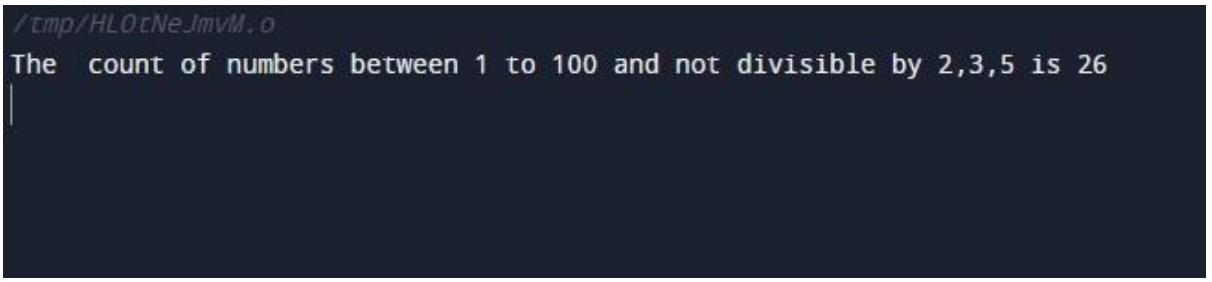
ALGORITHM

- Numbers from 1 to 100 are checked in a loop
- Each time perform mod operation with 2,3 and 5
- If the remainder is not zero, increment the counter
- End loop
- Display the counter, as the result

```
//************************************************************************** //
Program name : Countspec.c

// Author :Anantha Krishnan R J

// Date Written :09/06/2021

// Date Compiled :09/06/2021

// Aim of the Program : To count numbers between 1 and 100 which are not divisible by 2, 3 and 5
//**************************************************************************
//**************************************************************************



#include <stdio.h>

#include <stdlib.h>

 main()
{
   int i,count=0;

   for(i=1;i<=100;i++)
    {
      if(i%2!=0&&i%3!=0&&i%5!=0)
```

```
        {
           count=count+1;
        }
printf("The count of numbers between 1 to 100 and not divisible by 2,3,5 is %d \n",count);

}
```

OUTPUT



Expt 7: perform arithmetic functions

AIM:

To perform various arithmetic functions such as Addition, Subtraction, Multiplication, Division, Remainder Calculation etc.

ALGORITHM

- Display a menu with 5 options and request the user to enter the choice
- Go to suitable sections based on the entered choice
- Prompt the user to enter two numbers
- Perform the relevant operation
- Display the result
- Warn the user with “Invalid Choice”, if the entered choice is wrong

```
//************************************************************************ //
Program name : Arthim.c

// Author :Anantha Krishnan R J

// Date Written :09/06/2021

// Date Compiled :09/06/2021

// Aim of the Program : To perform various arithmetic      functions such as Addition, Subtraction,Multiplication, Division, Remainder Calculation etc
//************************************************************************
//************************************************************************

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

```
int main()
{
   int n1,n2,ans;
   char ch;
   printf(" \n + for addition \n - for substraction \n * for
multiplication \n / for division \n @ for finding the
remainder \n Enter your choice\n ");
   scanf("%c",&ch);
   printf("Enter the first number \n");
   scanf("%d",&n1);
   printf("Enter the second number \n");
   scanf("%d",&n2);


   switch(ch){
      case('+'):
         ans=n1+n2;
         printf("The sum of %d and %d is
%d",n1,n2,ans);
      break;
      case('-'):
         ans=n1-n2;
         printf("The difference of %d and %d is
%d",n1,n2,ans);
      break;
      case('*'):
         ans=n1*n2;
         printf("The product of %d and %d is
%d",n1,n2,ans);
      break;
      case('/'):
         ans=n1/n2;
         printf("The product of %d and %d is
%d",n1,n2,ans);
      break;
      case('@'):
         ans=n1%n2;
         printf("The product of %d and %d is
%d",n1,n2,ans);
      break;
      default :
         printf("Invalid entry \n");


   }
```

```
    return 0;
}
```

OUTPUT

```
/tmp/YF1rHrapt8.o
+ for addition
 - for substraction
 * for multiplication
 / for division
 @ for finding the remainder
  Enter your choice
 /
 Enter the first number
15
Enter the second number
3
The product of 15 and 3 is 5
```

```
/tmp/YF1rHrapt8.o
+ for addition
 - for substraction
 * for multiplication
 / for division
 @ for finding the remainder
  Enter your choice
 *
 Enter the first number
5
Enter the second number
2
The product of 5 and 2 is 10
```

```
/tmp/YF1rHrapt8.o

 + for addition
 - for substraction
 * for multiplication
 / for division
 @ for finding the remainder
  Enter your choice
 -
 Enter the first number
30
Enter the second number
11
The difference of 30 and 11 is 19
```

```
/tmp/YF1rHrapt8.o
+ for addition
- for substraction
* for multiplication
/ for division
@ for finding the remainder
Enter your choice
+
Enter the first number
10
Enter the second number
40
The sum of 10 and 40 is 50
```

Expt 8: check a number for prime or not

AIM:

To check whether the given number is prime or not

ALGORITHM

- Enter the number n
- Perform the „mod‟ operation from 2 to (n-1).
- If remainder is zero, „n‟ is not a prime number.
- If remainder is non-zero, then „n‟ is a prime number

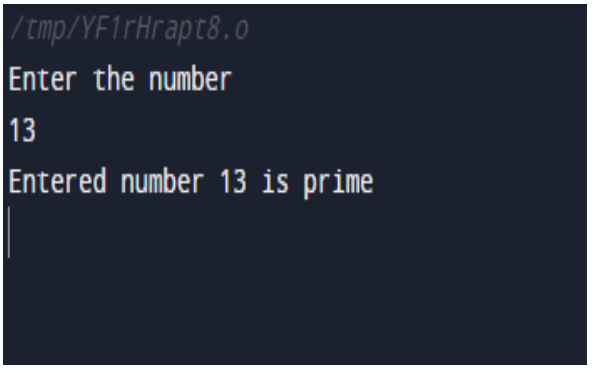
```
//************************************************************************ //
Program name : Checknum.c
// Author :Anantha Krishnan R J
// Date Written : 09/06/2021
// Date Compiled : 09/06/2021
 // Aim of the Program : To check whether the given number is prime or not
//************************************************************************
//************************************************************************
```

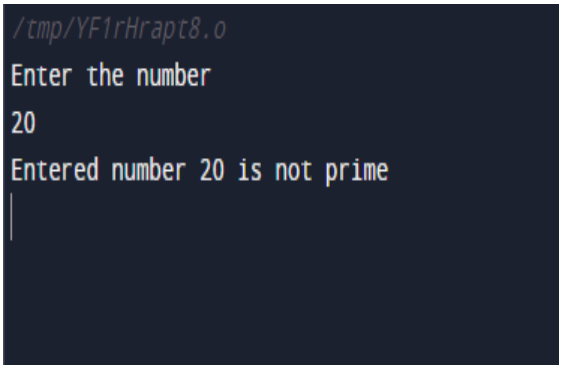
PROGRAM

```
#include  <stdio.h>
#include <stdlib.h>
int main()
{
   int i,n,chk=0;
   printf("Enter the number \n");
```

```
    scanf("%d",&n);
    for(i=2;i<n;i++)
{
        if(n%i==0){
            chk=1;
            break;
 }
    }
if(chk==0)
{
        printf("Entered number %d is prime \n",n);
 }
else
{
        printf("Entered number %d is not prime \n",n);
 }
    return 0;
}
```

OUTPUT





Expt 9: Evaluate sine and cosine series

AIM:

To evaluate sine and cosine series

ALGORITHM

(a) Sine Series

- Input the angle in degrees and number of terms as X and N respectively
- Convert angle to radians and assign it to X
- Assign the 1^{st} term as angle in radians
- Initialize the sum variable as 1^{st} term
- Vary a counter from 2 to N-1 with an increment two (Set the counter as i)
- Set the increment value as Incr
- Update Incr with – Incr *X^2/ (i * (i + 1)
- Add sum with Incr until i = N - 1
- End loop
- Display sum as the result

(b) Cosine Series

- Input the angle in degrees and the number of terms as X and N respectively
- Convert angle to radians
- Initialize the sum variable as 1
- Vary a counter from 2 to N with an increment 2
- Set the counter as i
- Set the increment values as Incr

- Update Incr = Incr *X^2/ (i * (i - 1)
- Add sum with Incr until i = N
- End loop
- Display sum as the result

```
//************************************************************************** //
Program name : sincos.c
// Author : Anantha Krishnan R J
// Date Written : 09/06/2021
// Date Compiled : 09/06/2021
 // Aim of the Program : To evaluate sine and cosine series
//**************************************************************************
//**************************************************************************



#include  <stdio.h>
#include <stdlib.h>
void main()
{
    int i,N;
    float X,nr,dr,Incr,sum=0,val;
   printf("Enter the angle in degree \n");
   scanf("%f",&X);
    printf("Enter the number of terms required \n");
    scanf("%d",&N);
   val=X;
    X=X*(3.14159/180);
```

```
sum=X;
nr=X;
dr=1;
```

```
    val=X;
    X=X*(3.14159/180);
    sum=X;
    nr=X;
    dr=1;
    for(i=2;i<N;i=i+1){
        nr=(nr*(-1)*X*X);
        dr=dr*(i)*(i+1);
        Incr=nr/dr;
        sum=sum+Incr;
    }
    printf("Sin(%f) = %f",val,sum);
}
```

OUTPUT

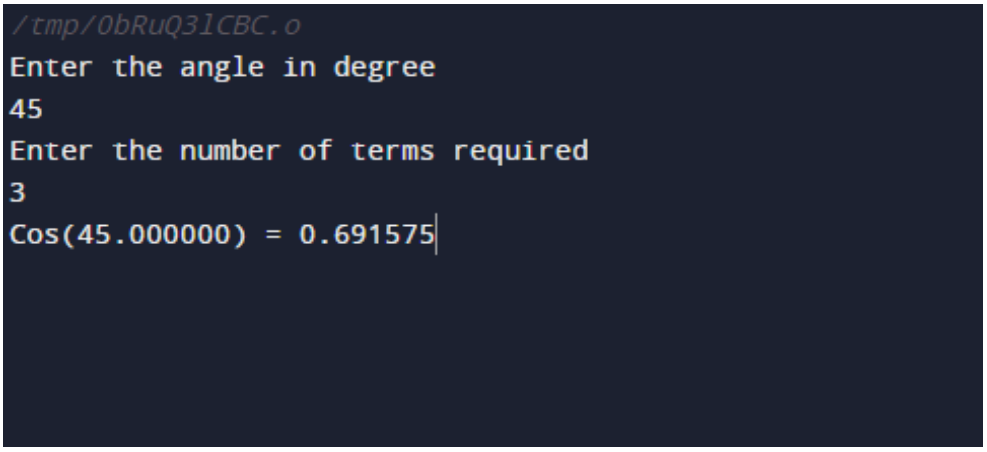
```
/tmp/YF1rHrapt8.o
Enter the angle in degree
50
Enter the number of terms required
8
Sin(0.872664) = 0.015230
```

B)

```
#include  <stdio.h>
#include <stdlib.h>
void main()
{
    int i,n;
```

```
    float x,nr,dr,Inc,sum=0,val;
    printf("Enter the angle in degree \n");
    scanf("%f",&x);
    printf("Enter the number of terms required \n");
    scanf("%d",&n);
    val=x;
    x=x*(3.14159/180);
    sum=1;
    nr=1;
    dr=1;
    for(i=2;i<n;i=i+1){
        nr=(nr*x*x*(-1));
        dr=dr*i*(i-1);
        Inc=nr/dr;
        sum=sum+Inc;
    }
    printf("Cos(%f) = %f",val,sum);
}
```

OUTPUT



Expt 10 : Solve A Quadratic Equation

AIM:

To solve a quadratic equation

ALGORITHM

- Read in the values of the coefficients as A, B and C
- Evaluate D = B^2– 4 * A * C
- Check if D>0

  If Yes , the 1^{st} root = R1 = -B + $\sqrt{D}$ /2A

  2^{nd} root = R2 = -B + $\sqrt{D}$ /2A

- If D=0

  R = -B /2A,

  Display roots

- If D < 0

  Display the roots as imaginary

```
//************************************************************************** //
Program name : quadeq.c

// Author : Anantha Krishnan R J

// Date Written : 09/06/2021

// Date Compiled : 09/06/2021

 // Aim of the Program : To solve a quadratic equation

//**************************************************************************
//**************************************************************************
```

```
#include  <stdio.h>
#include <stdlib.h>
#include  <math.h>
int main()
{
    float a,b,c,d,r1,r2;
    printf("Enter the value of A \n");
    scanf("%f",&a);
    printf("Enter the value of B \n");
    scanf("%f",&b);
    printf("Enter the value of C \n");
    scanf("%f",&c);
    d=(b*b)-(4*a*c);
    if(d>0){
        r1=(-b+sqrt(d))/(2*a);
        r2=(-b-sqrt(d))/(2*a);
        printf("The roots of the equation are %.2f , %.2f \n",r1,r2);
    }
else if(d==0){
        printf("Root of the equation is %.2f",-b/2*a);
                    }
else{
        printf("Roots are imaginary");
     }

   return 0;
```

}

OUTPUT

```
/tmp/ObRuQ3lCBC.o
Enter the value of A
3
Enter the value of B
5
Enter the value of C
10
Roots are imaginary
```

```
/tmp/ObRuQ3lCBC.o
Enter the value of A
1
Enter the value of B
4
Enter the value of C
2
The roots of the equation are -0.59 , -3.41
```