SCIENTIFIC CALCULATOR

A Mini Project Report Submitted

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BACHELOR OF TECHNOLOGY

In

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(Formerly Uttar Pradesh Technical University,Lucknow)

Jan,2022

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We hereby declare that the work presented in this report entitled “DIGITAL DISPLAY”, was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute.

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Name Student :FAIZ MOHAMMAD

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CERTIFICATE

Certified that Mohd. Amaan khan (2000560100068) have carried out the Project work presented in this report entitled "Scientific calculator" for the award of Bachelor of Technology from Dr. APJ Abdul Kalam Technical University, Lucknow under my supervision. The thesis embodies results of original work, and studies are carried out by the student himself and the contents of the report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

Signature

(Name of Supervisor)

(Designation)

(Address)

Date:

Signature

Dr. Anurag Shrivastava

Professor & Head

Computer Science & Engineering
BBDNIIT, Lucknow

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We want to express deepest gratitude to everyone who has helped us in completing this study successfully.First, we express the deepest gratitude to our project supervisor **prof. Sameer Awasthi** for the unwavering support, guidance & important contributions by the way of suggestions for improvement during our project work.

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Last but not the least there is a deepest gratitude towards our parents and friends whose support and blessing help us to complete the project successfully.

FAIZ MOHAMMAD
(2000560100068)

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CHAPTER 1

1. INTRODUCTION C:

WHAT IS C ?

. C is a general-purpose high level language.

. The C programming language is a computer programming language that was developed to do system programming for the operating system UNIX and is an imperative programming language.

WHY C?

. C is a general-purpose programming language and can efficiently work on enterprise applications, games, graphics, and applications requiring calculations, etc.

. C language has a rich library which provides a number of built-in functions.

. C language has a rich library which provides a number of built-in functions.

. It also offers dynamic memory allocation.

. C is highly portable language i.e. code written in one machine can be moved to other which is very important and powerful feature.

. C supports low level features like bit level programming and direct access to memory using pointer which is very useful for managing resource efficiently.

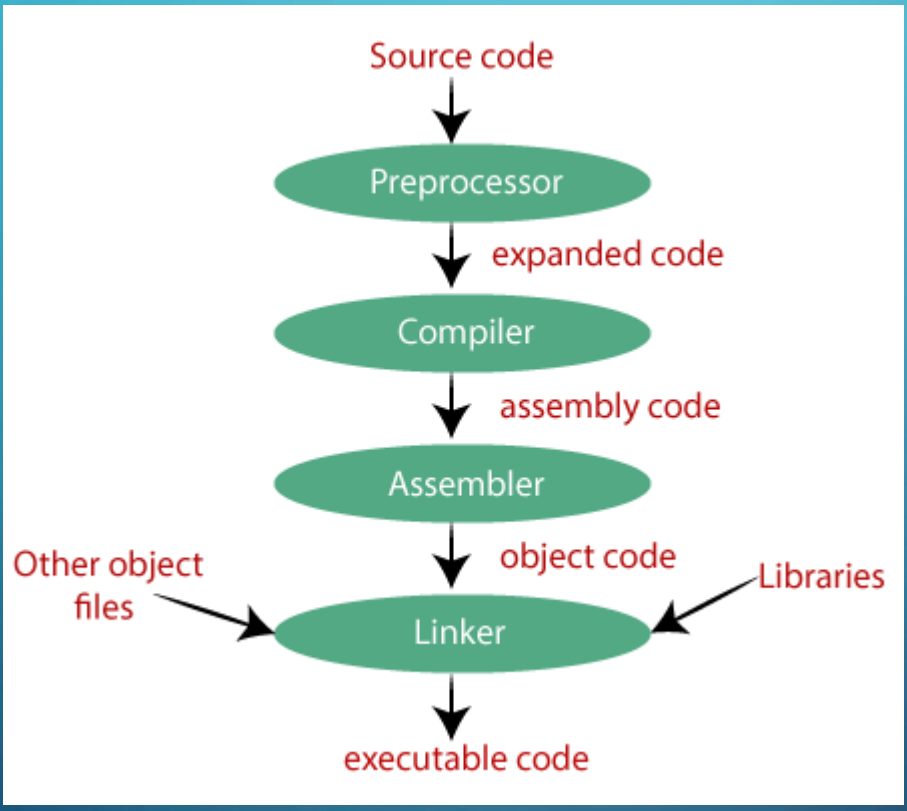
. Why not c?

. C is a Procedural Oriented language, whereas C++ is an Object-Oriented Programming language.

.C supports only Pointers whereas C++ supports both pointers and references.

. C does not allow you to use function overloading whereas C++ allows you to use function overloading.

. How Does C Work ?



History:

C History and Versions

. The C programming language came out of Bell Labs in the early 1970s.

. According to the Bell Labs paper The Development of the C Language by Dennis Ritchie.

. The C programming language was devised in the early 1970s as a system implementation language for the nascent Unix operating system.

. Derived from the typeless language BCPL, it evolved a type structure; created on a tiny machine as a tool to improve a meager programming environment.

. The development of C was to become the basis for Unix.

. In 1978, Brian Kernighan and Dennis Ritchie published The C Programming Language.

C Version List

VERSION	STANDARD	PUBLICATION DATE
K&R	n/a	1978-02-22
C89	ANSI X3.159-1989	1989-12-14
C90	ISO/IEC 9899:1990	1990-12-20
C95	ISO/IEC 9899/AMD1:1995	1995-03-30
C99	ISO/IEC 9899:1999	1999-12-16
C11	ISO/IEC 9899:2011	2011-12-15

CHAPTER:- 2

INTRODUCTION OF SCIENTIFIC CALCULATOR

A scientific calculator is a calculator **designed to help you calculate science, engineering, and mathematics problems**. It has special buttons for parentheses, trigonometric functions, exponents, inverses of trigonometric functions, and π. Every scientific calculator follows different rules. A calculator is a device that **performs arithmetic operations on numbers**. The simplest calculators can do only addition, subtraction, multiplication, and division. More sophisticated calculators can handle exponent ial operations, roots, logarithm s, trigonometric functions, and hyperbolic functions. Calculators **allow the students access to mathematical concepts and experiences from which they were**

CHAPTER: 3

OBJECTIVE

A digital calculator is a type of electronic calculator, usually but not always handheld, designed to calculate problems in science, engineering, and mathematics. They have completely replaced slide rules in traditional applications, and are widely used in both education and professional settings.
Calculators can **save a whole lot of computational time**
Using a calculator in classes can help students save a whole lot of computational time on basic arithmetical calculations. This makes it easier for them to stress more on important math concepts rather than stressing more on basic arithmetical calculations

CHAPTER:-4

CODING:-

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
#define PI 3.141
#define MAX 180
#include<stdlib.h>
#include<string.h>
int x=0,result=0;
void add(void);
void sub(void);
void mul(void);
void div(void);
void clear(void);
void sine(void);
void cosine(void);
void sec(void);
void cosec(void);
void tangent(void);
void cotangent(void);
void cube(void);
void square(void);
void sqroot(void);
void mod(void);
int menu(void);
void main()
```

```
{
char name[20],password[20];
int r;
clrscr();
printf("enter the name of canditate:");
gets(name);
printf("enter the password:");
gets(password);
r=strcmp(name,password);
getch();
while(1)
{
 clrscr();
  textcolor(BLUE);
 cprintf("\n\nresult  : %d\n",result);
 scanf("%d",&result);
 getch();

switch(menu())
{
case 1:
   add();
   x=1;
   break;
case 2:
  sub();
  x=1;
  break;
case 3:
  mul();
  x=1;
  break;
case 4:
   div();
   x=1;
   break;
```

```
case 5:
    mod();
    x=1;
    break;
case 6:
    clear();
    x=0;
    break;
case 7:
     sine();
     break;
case 8:
     cosine();
     break;
case 9:
     tangent();
     break;
case 10:
     cotangent();
     break;
case 11:
      sec();
      break;
case 12:
     cosec();
     break;
case 14:
     cube();
     break;
case 15:
     square();
     break;
case 16:
      sqroot();
      break;
```

```
case 13:
      exit(0);
default:
      printf("WRONG CHOICE :   SELECT AGAIN:  \n");
      break;
}
getch();
} }
 int menu(void)
{

    int m;
     printf("\n# # # # # # # # # # # # # # # # # # # # ");
     printf("\n# 1        add                        # ");
     printf("\n# 2        sub                        # ");
     printf("\n# 3        mul                        # ");
     printf("\n# 4        div                        # ");
     printf("\n# 5        mod                        # ");
     printf("\n# 6       clear                       # ");
     printf("\n# 7        sin                        # ");
     printf("\n# 8        cos                        # ");
     printf("\n# 9        tan                        # ");
     printf("\n# 10        cot                       # ");
     printf("\n# 11        sec                       # ");
     printf("\n# 12       cosec                      # ");
     printf("\n# 13        exit                      # ");
     printf("\n# 14         ***                      # ");
     printf("\n# 15        **                        # ");
     printf("\n# 16        sqrt                      # ");
     printf("\n# # # # # # # # # # # # # # # # # # # # ");
     printf("\n\nenter a option:  ");
     scanf("%d",&m);
    return m;
    }
```

```
void add()
{
int a,b;
     if(x)
     { textcolor(GREEN);
     cprintf("enter a number :  ");
     scanf("%d",&a);
     result=result+a;
     printf("result =%d",result);
}
else
{     textcolor(GREEN);
     printf("enter two number:     ");
     scanf("%d%d",&a,&b);
     result=a+b;
     cprintf("result   =  %d",result);
     }
 }
 void sub()
{
int a,b;
      if(x)
      {textcolor(GREEN);
      printf("enter a number:      ");
      scanf("%d",&a);
      result=result-a;
      cprintf("result  =  %d",result);
      }
      else
      {textcolor(GREEN);
      printf("enter two number:     ");
      scanf("%d%d",&a,&b);
      result=a-b;
      cprintf("result   =%d",result);
      }
 }
```

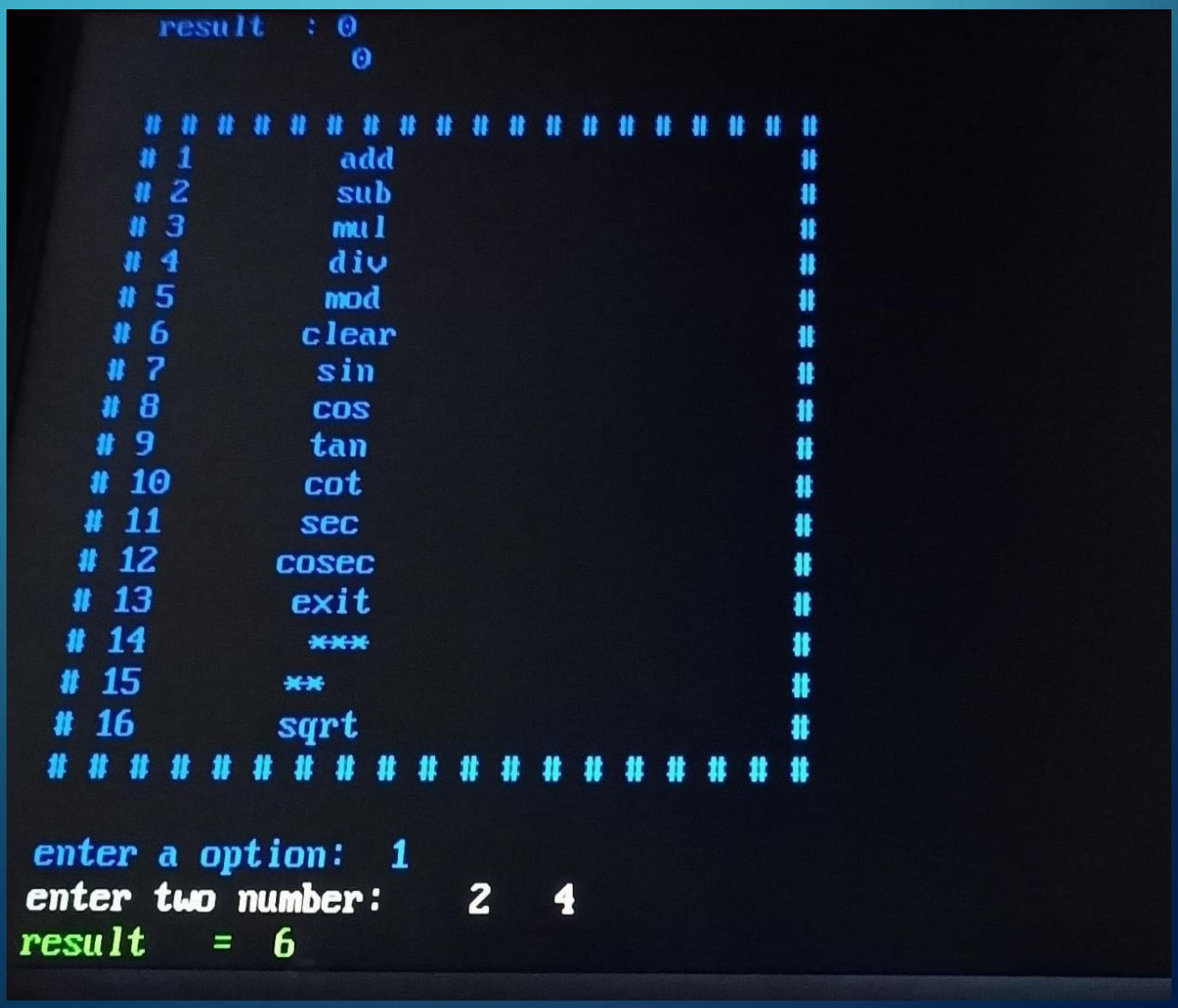
```
void mul()
{
        int a,b;
        if(x)
        {textcolor(GREEN);
        printf("enter a number:   ");
        scanf("%d",&a);
        result=result*a;
        cprintf("result    =%d",result);
        }
        else
        {textcolor(GREEN);
        printf ("enter two number :   ");
        scanf("%d%d",&a,&b);
        result=a*b;
        cprintf("result   = %d",result);
        }
}
void div()
{
float a,b,finalresult;
          if(x)
             {   textcolor(GREEN);
             printf("enter a number:  ");
             scanf("%f",&a);
             result=result/a;
             cprintf("result  =%d",result);
             }
         else
             { textcolor(GREEN);
             printf("enter two number:  ");
             scanf("%f%f",&a,&b);
             result=a/b;
             cprintf("result   = %f",result);
             }
}
```

```
void mod()
{
int a,b;
 if(x)
 {  textcolor(GREEN);
  printf("enter  a number :   ");
  scanf("%d",&a);
  result=result%a;
  cprintf("result  =   %d",result);
  }
  else
  {textcolor(GREEN);
  printf("enter two number:   ");
  scanf("%d%d",&a,&b);
  result=a%b;
  cprintf("result  = %d",result);
 }
 }
 void clear()
 {
 printf("DATA IS CLEARED: \n");
 result=0;
 x=0;
       }
    void sine()
    {
      textcolor(RED);
    int angle;
    float m,n;
    cprintf("enter the angle:  ");
    scanf("%d",&angle);
           n=(PI/MAX)*angle;
           m=sin(n);
       cprintf("value: %f",m);
 }
```

```
void cosine()
        {textcolor(RED);
        int angle;
        float m,n;
        cprintf("enter the angle:  ");
        scanf("%d",&angle);
          n=(PI/MAX)*angle;
          m=cos(n);
          cprintf("value   :  %f",m);
          }
          void tangent()
          {textcolor(RED);
          int angle;
          float m,n;
          cprintf("enter the angle:  ");
          scanf("%d",&angle);
            n=(PI/MAX)*angle;
            m=tan(n);
            cprintf("value   :   %f ",m);
            }
            void cotangent()
            {textcolor(RED);
            int angle;
            float m,n;
            cprintf("enter the angle:  ");
            scanf("%d",&angle);
               n=(PI/MAX)*angle;
               m=1/tan(n);
               cprintf("value : %f",m);
               }
```

```
void sec()
        {textcolor(RED);
    int angle;
    float m,n;
    cprintf("enter the angle:  ");
    scanf("%d",&angle);
      n=(PI/MAX)*angle;
      m=1/cos(n);
      cprintf("value : %f",m);
          }
     void cosec()
     { textcolor(RED);
    int angle;
    float m,n;
    cprintf("enter the angle:  ");
    scanf("%d",&angle);
      n=(PI/MAX)*angle;
      m=1/sin(n);
      cprintf("value : %f",m);
      }
void cube()
{ textcolor(RED);
int m,n;
printf("enter the number:");
scanf("%d",&n);
m=n*n*n;
cprintf("result=%d",m);
}
```

```
void square()
     { textcolor(RED);
  int m,n;
  printf("enter the number:");
  scanf("%d",&n);
  m=n*n;
  cprintf("result=%d",m);
  }
  void sqroot()
    {textcolor(RED);
  int m,n;
  printf("enter the number:");
  scanf("%d",&n);
  m=sqrt(n);
  cprintf("result=%d",m);
  }
```



CONCLUSION

In the end , I would like to concluded that my aim to make this Project was to research in the field of C Programming.
some scope of improvement also there .

REFERENCES

- **C: The Complete Reference**

The Complete Reference 4th Edition is Herbert Schildt is an ideal C++ reference. It teaches C as a subset of C++.

- **Head First C: A Brain-Friendly Guide**

Head First C written by Griffiths David provides you in-depth knowledge about the C language.

- **Expert C Programming: Deep Secrets**

Expert C programming is a book written by Peter Van Der Linden is a second book which offers many advanced tips and tricks