VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JnanaSangama", Belgaum -590014, Karnataka.

C PROGRAMMING LAB RECORD

Submitted by

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Under the Guidance of
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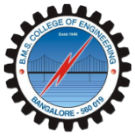
BMSCE

in partial fulfillment for the award of the degree of
BACHELOR OF ENGINEERING
in
COMPUTER SCIENCE AND ENGINEERING



B.M.S. COLLEGE OF ENGINEERING
(Autonomous Institution under VTU)
BENGALURU-560019
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B.M.S. COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DECALARATION

I,AAAA , student of 2nd Semester, B.E, Department of Computer Science and Engineering, B. M. S. College of Engineering, Bangalore, hereby declare that, this laboratory work for "C Programming" course has been carried out by us under the guidance of Prof. Rekha G S ,Assistant Professor, Department of CSE, B. M. S. College of Engineering, Bangalore during the academic semester April-2021-June-2021

We also declare that to the best of our knowledge and belief, the development reported here is not from part of any other report by any other students.

vishnu kumar(1BM20CS190)

1. C program to convert degree fahrenheit into celsius.

```
#include<stdio.h>
int main()
{
    float fah , cel ;
    printf("Enter the temp in degree Fahrenheit\n");
    scanf("%f" , &fah);
    cel = ((fah - 32) *5) / 9 ;
    printf("Temp in Celsius is :- %0.2f \n " , cel);
    return 0 ;
}
```

Output 1

```
Enter the temp in degree Fahrenheit
120
Temp in Celsius is :- 48.89
```

2.c program to find the area of a triangle gives its sides as input using function

```
#include <stdio.h>
#include <math.h>
int areacalculate(int a,int b,int c)
{
float s , area , s1;
s1=a+b+c;
s = s1/2;
area = sqrt(s*(s-a)*(s-b)*(s-c));
printf("Area of Triangle of given sides is
%0.2f",area);
return 0;
}
int main(){

int a1,b1,c1;
printf("Enter three side of triangle\n");
scanf("%d %d %d",&a1,&b1,&c1);
```

```
areacalculate(a1,b1,c1);
return 0;
}
```

Output 2

```
Enter three side of triangle
3 6 8
Area of Triangle of given sides is 7.64
```

3. C program to find all possible roots of a quadratic equation.

```
#include<stdio.h>
#include<math.h>
int roots(int a , int b , int c )
{
    float d , r1, r2 , imaginary ;
    d = (b*b) - (4*a*c);
    if(d>0){
        r1 = (-b + sqrt(d)) / (2*a);
        r2 = (-b -sqrt(d)) / (2*a) ;
        printf("Roots are Real and Distinct and
roots are %0.2f , %0.2f" , r1 , r2);

    }
    else if(d==0){
        r1 = ((-b)/(2*a));
        printf("Roots are real and equal and roots
are %0.2f , %0.2f" , r1 , r2);
```

```
    }
       else if(d<0){
        r1 = (-b)/(2*a);
        imaginary = sqrt(-d)/(2*a);
        printf("Roots are imaginary and distinct and
roots are %0.2f + %0.2fi , %0.2f - %0.2fi", r1 ,
imaginary , r1 , imaginary);

    }

    return 0;
}
int main ()
{
    int a , b , c ;
    printf("Enter the value of a, b , c");
    scanf("%d %d %d" , &a,&b,&c);
    roots(a,b,c);
}
```

Output 3

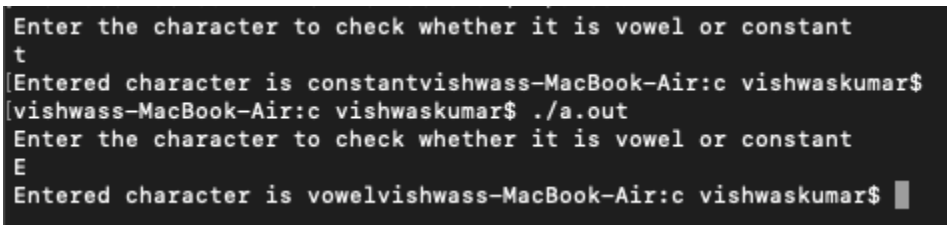

Enter the value of a, b , c4 7 9
Roots are imaginary and distinct and roots are 0.00 + 1.22i , 0.00 - 1.22i

4.c program to determine whether the entered character is a vowel or constant using switch statement

```
#include<stdio.h>
int vowel(char c )
{
    switch(c)
    {
        case 'A':
        case 'E':
        case 'I':
        case 'O':
        case 'U':
        case 'a':
        case 'e':
        case 'i':
        case 'o':
        case 'u':
        printf("Entered character is vowel");
```

```
        break;
        default:
        printf("Entered character is constant");
        break;

    }
    return 0 ;

}
int main()
{
    char c ;
    printf("Enter the character to check whether it
is vowel or constant \n");
    scanf("%c" , &c);
    vowel(c);
    return 0;

}
```

Output 4


Enter the character to check whether it is vowel or constant
t
Entered character is constantvishwass-MacBook-Air:c vishwaskumar$
vishwass-MacBook-Air:c vishwaskumar$ ./a.out
Enter the character to check whether it is vowel or constant
E
Entered character is vowelvishwass-MacBook-Air:c vishwaskumar$

5.program to print even number from M to N.

```
#include<stdio.h>
int check(int m , int n)
{
    int i;
    printf("Even number from range %d-%d is:- \n"
, m , n);
    for(i = (m%2?m+1:m) ; i <= n ; i+=2){
        printf("%d \n" , i);
    }

    return 0;

}
int main()
{
    int m , n ;
    printf("Enter the range to get the even number
m - n \n");
```

```
    scanf("%d %d" , &m , &n);
    check(m , n);
    return 0;

}
```

Output 5

```
Even number from range 1-10 is:-
2
4
6
8
10
```

6.c program to calculate the sum of squares of first n odd numbers.

```
#include<stdio.h>
int oddsqr(int n)
{
    int sumodd = 0 ;
    for (int i = 1 ; i<=2*n ; i++)
    {
        if(i%2 != 0)
        {
            sumodd += i*i ;

        }

    }
    return sumodd;

}
```

```
int main()
{
    int n, sum;
    printf("Enter the value of N ");
    scanf("%d" , &n);
    sum = oddsqr(n);
    printf("sum of the square of first %d odd
numbers is : %d" , n ,sum);
    return 0;
}
```

Output 6

```
Enter the value of N 10
sum of the square of first 10 odd numbers is : 1330
```

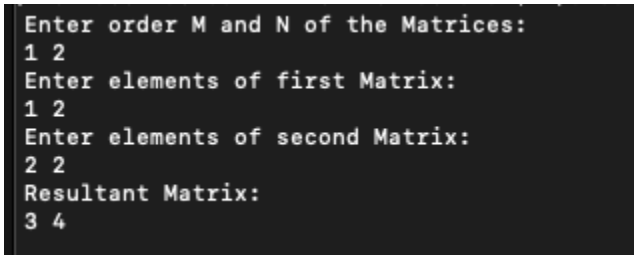
7.c program to perform addition of two matrices

```
#include <stdio.h>
// printf(), scanf()
#include <stdlib.h>
// EXIT_SUCCESS

const int MAX_SIZE = 100;

int main() {

int M, N;
printf("Enter order M and N of the Matrices: ");
scanf("%d %d", &M, &N);

int m1[MAX_SIZE][MAX_SIZE];
printf("Enter elements of first Matrix:\n");
for (int i = 0; i < M; ++i) {
for (int j = 0; j < N; ++j) {
```

```
scanf("%d", &m1[i][j]);
}
}

int m2[MAX_SIZE][MAX_SIZE];
printf("Enter elements of second Matrix:\n");
for (int i = 0; i < M; ++i) {
for (int j = 0; j < N; ++j) {
    scanf("%d", &m2[i][j]);
}
}

// add the matrices
int result[MAX_SIZE][MAX_SIZE];
for (int i = 0; i < M; ++i) {
for (int j = 0; j < N; ++j) {
result[i][j] = m1[i][j] + m2[i][j];
}
}

printf("Resultant Matrix:\n");
```

```
for (int i = 0; i < M; ++i) {
for (int j = 0; j < N; ++j) {
printf("%d ", result[i][j]);
}
printf("\n");
}
printf("\n");

return EXIT_SUCCESS;
}
```

Output 7


Enter order M and N of the Matrices:
1 2
Enter elements of first Matrix:
1 2
Enter elements of second Matrix:
2 2
Resultant Matrix:
3 4

8.c program to copy one string to another string and find its length

```
#include<stdio.h>
int len(char str[20])
{
    int i=0 , count = 0;
    while(str[i] != '\0')
    {
        count += 1;
        i++;

    }
    return count;

}
int main()
{
    char str1[20] , str2[20];
```

```
    int i=0 , j= 0;
    printf("Enter the string to the copied \n");
    scanf("%s",str1);
    while(str1[i] != '\0')
    {
        str2[j] = str1[i];
        i++;
        j++;

    }str2[j] = '\0';
    printf("Original string is %s\n", str1);
    printf("Copied string is %s\n", str2);
    printf("Length ofthe string is %d\n", len(str1));
    return 0;
}
```

Output 8

```
Enter the string to the copied
vishnu
Original string is vishnu
Copied string is vishnu
Length ofthe string is 6
```

9.C program to create student student , read two student details(student roll number, name, section, department, fees and results i.e , total marks obtained) and print the student details who has scored the highest

```
#include<stdio.h>
struct student{
    int rollnumber;
    char name[20];
    char section[20];
    char dept [10];
    float fees;
    int totalmarks;

};
int main ()
{
     struct student stud1,stud2;
```

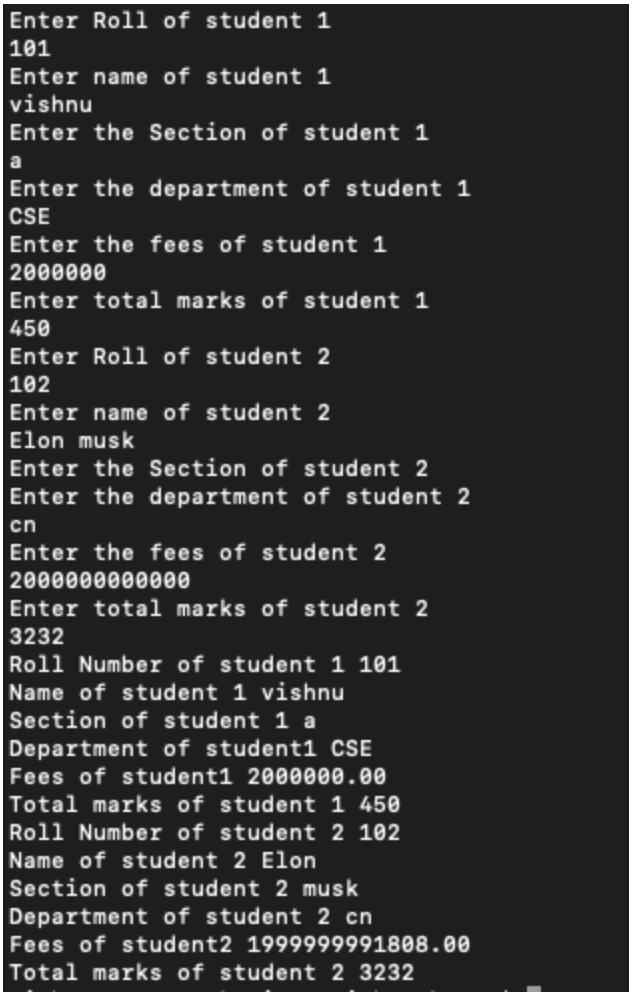
```
        printf("Enter Roll of student 1\n");
        scanf("%d",&stud1.rollnumber);
        printf("Enter name of student 1\n");
        scanf("%s",stud1.name);
        printf("Enter the Section of student 1\n");
        scanf("%s",stud1.section);
        printf("Enter the department of student
1\n");
        scanf("%s",stud1.dept);
        printf("Enter the fees of student 1\n");
        scanf("%f",&stud1.fees);
        printf("Enter total marks of student 1\n");
        scanf("%d",&stud1.totalmarks);
        printf("Enter Roll of student 2\n");
        scanf("%d",&stud2.rollnumber);
        printf("Enter name of student 2\n");
        scanf("%s",stud2.name);
        printf("Enter the Section of student 2\n");
        scanf("%s",stud2.section);
        printf("Enter the department of student
2\n");
```

```
        scanf("%s",stud2.dept);
        printf("Enter the fees of student 2\n");
        scanf("%f",&stud2.fees);
        printf("Enter total marks of student 2\n");
        scanf("%d",&stud2.totalmarks);
        printf("Roll Number of student 1
%d\n",stud1.rollnumber);
        printf("Name of student 1
%s\n",stud1.name);
        printf("Section of student 1
%s\n",stud1.section);
        printf("Department of student1
%s\n",stud1.dept);
        printf("Fees of student1
%0.2f\n",stud1.fees);
        printf("Total marks of student 1
%d\n",stud1.totalmarks);
        printf("Roll Number of student 2
%d\n",stud2.rollnumber);
        printf("Name of student 2
%s\n",stud2.name);
```

```
        printf("Section of student 2
%s\n",stud2.section);
        printf("Department of student 2
%s\n",stud2.dept);
        printf("Fees of student2
%0.2f\n",stud2.fees);
        printf("Total marks of student 2
%d\n",stud2.totalmarks);
        if(stud1.totalmarks>stud2.totalmarks)
        {
                printf("Student 1 secured highest
marks");
        }
        else if(stud1.totalmarks==stud2.totalmarks)
        {
                printf("Student 1 and 2 secured same
marks");
} else
{
                printf("Student 2 secured highest
marks");
```

```
}
return 0;
}
```

Output 9


Enter Roll of student 1
101
Enter name of student 1
vishnu
Enter the Section of student 1
a
Enter the department of student 1
CSE
Enter the fees of student 1
2000000
Enter total marks of student 1
450
Enter Roll of student 2
102
Enter name of student 2
Elon musk
Enter the Section of student 2
Enter the department of student 2
cn
Enter the fees of student 2
2000000000000
Enter total marks of student 2
3232
Roll Number of student 1 101
Name of student 1 vishnu
Section of student 1 a
Department of student1 CSE
Fees of student1 2000000.00
Total marks of student 1 450
Roll Number of student 2 102
Name of student 2 Elon
Section of student 2 musk
Department of student 2 cn
Fees of student2 1999999991808.00
Total marks of student 2 3232

10.C program to perform arithmetic operation (addition, substraction, mutiplication , division and remainder) on two integers using pointers

```
#include<stdio.h>
int operations(int *, int *, int *, int *, int*, float
*, int *);
int main()
{
    int a,b;
    int add,sub,multiplication,rem;
    float division;
    printf("Enter the two numbers operations: ");
    scanf("%d %d",&a,&b);
    operations(&a, &b, &add, &sub,
&multiplication,
&division, &rem);
    printf("Addition :%d\n",add);
    printf("Subtraction :%d\n",sub);
    printf("Division :%0.2f\n",division);
```

```
    printf("Multiplication :%d\n",multiplication);
    printf("Remainder :%d\n",rem);
    return 0;
}
int operations(int *a, int *b, int *add, int *sub, int
*multiplication, float *division, int *rem)
{
    *add=*a+*b;
    *sub=*a-*b;
    *multiplication=*a**b;
    *division=(float)(*a)/(*b);
    *rem=(*a)%(*b);
return 0;
 }
```

Output 10

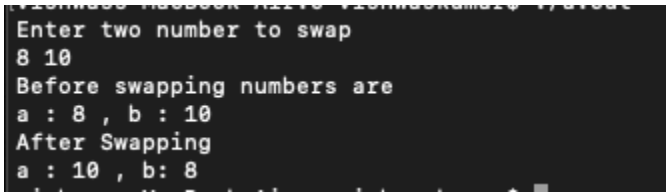
```
Enter the two numbers operations: 20 1
Addition :21
Subtraction :19
Division :20.00
Multiplication :20
Remainder :0
```

11.C program in swapping two numbers.

```
#include<stdio.h>
int swapptr(int * , int *);
int main()
{
    int a , b ;
    printf("Enter two number to swap\n");
    scanf("%d %d", &a, &b);
    printf("Before swapping numbers are \n");
    printf("a : %d , b : %d\n" , a , b);
    swapptr(&a , &b);
    printf("After Swapping\n");
    printf("a : %d , b: %d \n" , a , b);
    return 0;

}
int swapptr(int *a , int *b)
{
    int *temp;
```

```
    *temp = *a;
    *a = *b;
    *b = *temp;
    return 0;

}
```

Output 11


Enter two number to swap
8 10
Before swapping numbers are
a : 8 , b : 10
After Swapping
a : 10 , b: 8

12.C program how to read from the keyword, write it to a file called BMSCE.txt , again read the same data from the BMSCE file , and display it on the screen/console.

```
#include<stdio.h>
int main()
{
   char feedback[40];
     FILE *fp;
     fp=fopen("BMSCE.txt","w");
     printf("Write something about BMSCE\n");
     fgets(feedback,200,stdin);
     fputs(feedback,fp);
     fclose(fp);
     fp=fopen("BMSCE.txt","r");
     printf("Data read from the file:\n");
     while(fgets(feedback,200,fp) != NULL)
     {
          printf("%s",feedback);
```

```
    }
return 0;
}
```

Output 12

```
Write something about BMSCE
it's the best college of india
Data read from the file:
it's the best college of india
```