JSS COLLEGE FOR WOMEN

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Chamarajanagar-571313

I BCA

PROGRAMMING IN C

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I BCA I Semester

Part A:

1. Program to read radius of a circle and to find area and circumference

```
#include<stdio.h>
#include<conio.h>
#define PI 3.14
void main()
{
      float radius,area,circum;
      clrscr();
      printf("Enter the Radius of the Circle\n");
      scanf("%f",&radius);
      area=PI*radius*radius;
      circum=2*PI*radius;
      printf("Area of Circle is %.2f\n",area);
      printf("Circumference of Circle is %.2f\n",circum);
      getch();
}
```

Output:

```
Enter the Radius of the Circle
2
Area of Circle is 12.56
Circumference of Circle is 12.56
```

2. Program to read three numbers and find the biggest of three

```
#include<stdio.h>
#include<conio.h>
void main()
{
      int a,b,c,large;
      clrscr();
      printf("Enter the Value of a,b and c\n");
      scanf("%d%d%d",&a,&b,&c);
      large=(a>b&&a>c)?a:((b>c)?b:c);
      printf("Largest of Three Number is %d\n",large);
      getch();
}
```

Output

```
Enter the Value of a,b and c
5
9
2
Largest of Three Number is 9
```

3. Program to demonstrate library functions in math.h

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
	int x=64,y=-108,z=8,n=3;
	float a=1.6,c=-2.8;
	clrscr();
	printf("Ceil value of a %.2f\n",ceil(a));
	printf("Ceil value of c =%.2f\n",ceil(c));
	printf("Floor value of a =%.2f\n",floor(a));
	printf("Floor value of c =%.2f\n",floor(c));
	printf("Square root of %d is %.2f\n",x,sqrt(x));
	printf("The Absolute value of %d is %d\n",y,abs(y));
	printf( "The Power Value of %d and %d is%.2f",z,n,pow(z,n));
	getch();
}
```

Output

```
Ceil value of a 2.00
Ceil value of c =-2.00
Floor value of a =1.00
Floor value of c =-3.00
Square root of 64 is 8.00
The Absolute value of -108 is 108
The Power Value of 8 and 3 is512.00
```

4. Program to check for prime

```
#include<stdio.h>
#include<conio.h>
void main()
{
	int num,i,flag=0;
	clrscr();
	printf("Enter the Number\n");
	scanf("%d",&num);
	if(num<=1)
	{
		printf("%d is not a Prime Number\n",num);
		exit(1);
	}
	for(i=2;i<=num/2;i++)
	{
		if(num%i==0)
		{
			flag=1;
			break;
		}
	}
	if(flag==0)
	{
		printf("%d is a Prime Number\n",num);
```

```
	}
	else
	{
		printf("%d is a not Prime Number\n",num);
	}
	getch();

}
```

Output

```
Enter the Number
8
8 is a not Prime Number
```

```
Enter the Number
5
5 is a Prime Number
```

5. Program to generate n primes

```
#include<stdio.h>
#include<conio.h>
void main()
{
	int number,flag,i,j;
	clrscr();
	printf("Enter the Number\n");
	scanf("%d",&number);
	if(number<=1)
	{
		printf("%d  is not a primne Number\n",number);
		getch();
		exit(1);
	}
	Printf("Prime Numbers are. . . \n");
	for(i=2;i<=number;i++)
	{
		flag=0;
		for(j=2;j<=i/2;j++)
		{
			if(i%j==0)
			{
				flag=1;
				break;
			}
		}
		if(flag==0)
		{
			printf("%d\t",i);
		}
	}
	getch();
}
```

Output

```
Enter the Number
10
Prime Numbers are...
2       3       5       7
```

6. Program to read a number, find the sum of the digits, reverse the number and check it for palindrome

```
#include<stdio.h>
#include<conio.h>
void main()
{       int num,rev=0,temp,digit,sumdigit=0;
      clrscr();
      printf("Enter the Number\n");
      scanf("%d",&num);
      temp=num;
      while(num!=0)
      {
            digit=num%10; //fetch digits from Number
            sumdigit+=digit;
            rev=rev*10+digit;
            num/=10;
      }
      printf("Given Number is %d\n",temp);
      printf("Sum of Digits of %d= %d\n",temp,sumdigit);
      printf("The Reverse of Number is %d\n",rev);
      if(temp==rev)
      {
            printf("The Given Number is Palidrome\n");
      }
      else
      {
            printf("The Given Number is Not Palindrome\n");
      }
      getch();
}
```

Output

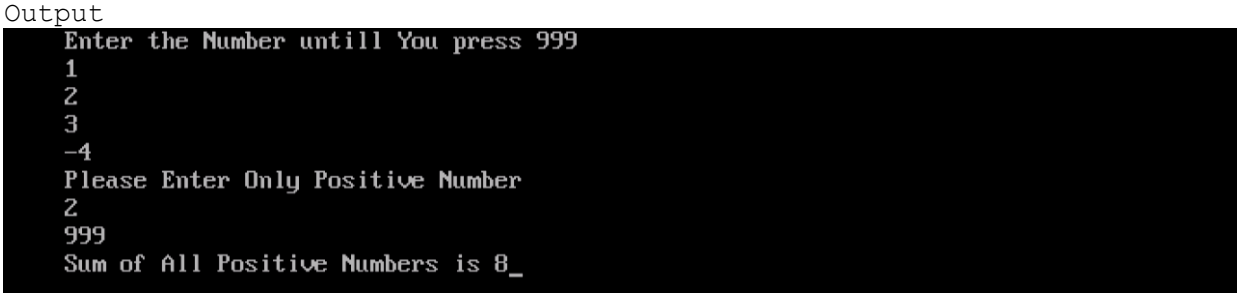
```
Enter the Number
123
Given Number is 123
Sum of Digits of 123= 6
The Reverse of Number is 321
The Given Number is Not Palindrome
```

```
Enter the Number
121
Given Number is 121
Sum of Digits of 121= 4
The Reverse of Number is 121
The Given Number is Palidrome
```

7. Program to read numbers from keyboard continuously till the user presses 999 and to find the sum of only positive numbers

```
#include<stdio.h>
#include<conio.h>
void main()
{
	int number,sum=0;
	clrscr();
	printf("Enter the Number untill You press 999\n");
	scanf("%d",&number);
	while(number!=999)
	{
		if(number>0)
		{
			sum=sum+number;
		}
		else
		{
			printf("Please Enter Only Positive Number\n");
		}
		scanf("%d",&number);
	}
	printf("Sum of All Positive Numbers is %d",sum);
	getch();
}
```

Output



8. Program to read percentage of marks and to display appropriate message (Demonstration of else-if ladder)

```
#include<stdio.h>
#include<conio.h>
void main()
{
	int pt;
	clrscr();
	printf("Enter the Percentage of Student\n");
	scanf("%d",&pt);
	if(pt>=85 && pt<=100)
	{
		printf("Distinction\n");
	}
	else if(pt>=70&&pt<=84)
	{
		printf("First Class\n");
```

```
        }
        else if(pt>=60&&pt<=69)
        {
              printf("Second class\n");
        }
        else if (pt>=50&&pt<=59)
        {
              printf("Third class\n");
        }
        else if(pt>=40&&pt<=49)
        {
              printf("Just Pass\n");
        }
        else
        {
              printf("Fail\n");
        }
        getch();
}
```

Output

```
Enter the Percentage of Student
89
Distinction
```

```
Enter the Percentage of Student
78
First Class
```

```
Enter the Percentage of Student
67
Second class
```

```
Enter the Percentage of Student
56
Third class
```

```
Enter the Percentage of Student
46
Just Pass
```

```
Enter the Percentage of Student
39
Fail
```

9. Program to find the roots of quadratic equation (demonstration of switch Case statement)

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
      float a,b,c,x1,x2,disc,real,img;
      int flag;
      clrscr();
      printf("Enter the Value of a,b and c\n");
      scanf("%f%f%f",&a,&b,&c);
      if(a==0||b==0||c==0)
      {
            printf("Error :Roots Cannot Be Determined\n");
            exit(1);
      }
      disc=b*b-4*a*c;
      if(disc<0)
      {
            flag=1;
      }
      else if(disc>0)
      {
            flag=2;
      }
      else
      {
            flag=3;
      }
      switch(flag)
      {
            case 1:printf("Imaginary Roots\n");
                   real=-b/(2*a);
                   img=(sqrt(abs(disc)))/(2*a);
                   printf("Root1 =%f  +i  %f\n",real,img);
                   printf("Root2 =%f  -i  %f\n",real,img);
                   break;
            case 2:printf("Roots are real and Distinct\n");
                   x1=(-b+sqrt(disc))/(2*a);
                   x2=(-b-sqrt(disc))/(2*a);
                   printf("Root1 is %f\n",x1);
                   printf("Root2 is %f\n",x2);
                   break;
            case 3:printf("Roots are real and Equal\n");
                   x1=-b/(2*a);
                   x2=x1;
                   printf("Root1=%f\n",x1);
                   printf("Root2=%f\n",x2);
                   break;
      }
      getch();
}
```

Output

```
Enter the Value of a,b and c
1
2
1
Roots are real and Equal
Root1=-1.000000
Root2=-1.000000
```

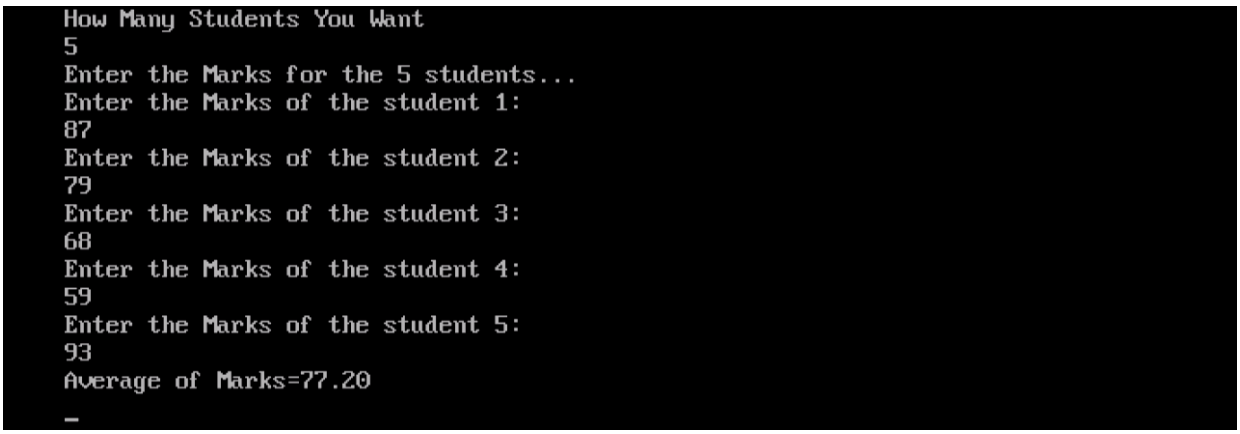
```
Enter the Value of a,b and c
1
4
5
Imaginary Roots
Root1 =-2.000000  +i  1.000000
Root2 =-2.000000  -i  1.000000
```

```
Enter the Value of a,b and c
1
5
4
Roots are real and Distinct
Root1 is -1.000000
Root2 is -4.000000
```

10. Program to read marks scored by n students and find the average of marks (Demonstration of single dimensional array)

```
#include<stdio.h>
#include<conio.h>
void main()
{
      int marks[10],i,n;
      float sum=0.0,avg;
      clrscr();
      printf("How Many Students You Want\n");
      scanf("%d",&n);
      printf("Enter the Marks for the %d students...\n",n);
      for(i=0;i<n;i++)
      {
            printf("Enter the Marks of the student %d:\n",i+1);
            scanf("%d",&marks[i]);
      }
      for(i=0;i<n;i++)
      {
            sum=sum+marks[i];
      }
      avg=sum/n;
      printf("Average of Marks=%.2f\n",avg);
      getch();
}
```

Output



11. Program to remove Duplicate Element in a single dimensional Array

```
#include<stdio.h>
#include<conio.h>
void main()
{
      int a[10],i,j,k,n;
      clrscr();
      printf("Enter the Size of the array\n");
      scanf("%d",&n);
      printf("Enter the Elements of the Array\n");
      for(i=0;i<n;i++)
      {
            scanf("%d",&a[i]);
      }
      printf("Elements of the Array are\n");
      for(i=0;i<n;i++)
      {
            printf("%d\n",a[i]);
      }
      for(i=0;i<n;i++)
      {
            for(j=i+1;j<n;j++)
            {
                  if(a[i]==a[j])
                  {
                      for(k=j;k<n;k++)
                      {
                        a[k]=a[k+1];
                      }
                      j=j-1;
                      n=n-1;
                  }
            }
      }
       printf("Final Array after removing the duplicate element
is...\n");
        for(i=0;i<n;i++)
        {
      printf("%d\n",a[i]);
        }
        getch();
```

```
}
```

Output

```
Enter the Elements of the Array
1
2
3
2
3
4
5
4
Elements of the Array are
1
2
3
2
3
4
5
4
Final Array after removing the duplicate element  is...
1
2
3
4
5
```

12. Program to perform addition and subtraction of Matrices

```
 #include<stdio.h>
#include<conio.h>
void main()
{
      int a[10][10],b[10][10],c[10][10],d[10][10],n,m,i,j;
      clrscr();
      printf("Enter the Order of the matrix\n");
      scanf("%d%d",&n,&m);
      printf("Enter the element of thr Matrix A\n");
      for(i=0;i<n;i++)
      {
            for(j=0;j<m;j++)
            {
                  scanf("%d",&a[i][j]);
            }
      }
      printf("Enter the element of thr Matrix B\n");
      for(i=0;i<n;i++)
      {
            for(j=0;j<m;j++)
            {
                  scanf("%d",&b[i][j]);
            }
      }
      printf("Elements of the Matrix  A is\n");
      for(i=0;i<n;i++)
      {
```

```
            for(j=0;j<m;j++)
            {
                  printf("%d\t",a[i][j]);
            }
            printf("\n");
      }
      printf("Elements of the Matrix  B is\n");
      for(i=0;i<n;i++)
      {
            for(j=0;j<m;j++)
            {
                  printf("%d\t",b[i][j]);
            }
            printf("\n");
      }

      for(i=0;i<n;i++)
      {
            for(j=0;j<m;j++)
            {
                  c[i][j]=a[i][j]+b[i][j];
                  d[i][j]=a[i][j]-b[i][j];
            }
      }
      printf("Addition of Two Matrices is\n");
      for(i=0;i<n;i++)
      {
            for(j=0;j<m;j++)
            {
                  printf("%d\t",c[i][j]);
            }
            printf("\n");
      }

      printf("Substraction of two Matrices is\n");
      for(i=0;i<n;i++)
      {
            for(j=0;j<m;j++)
            {
                  printf("%d\t",d[i][j]);
            }
            printf("\n");
      }
      getch();
}
```

Output

```
2
2
Enter the element of thr Matrix A
8
8
8
8
Enter the element of thr Matrix B
4
4
4
4
Elements of the Matrix  A is
8       8
8       8
Elements of the Matrix  B is
4       4
4       4
Addition of Two Matrices is
12      12
12      12
Substraction of two Matrices is
4       4
4       4
```

PART B

1. Program to find the length of a string without using built in function

```
#include<stdio.h>
#include<conio.h>
void main()
{
      char str[25];
      int i,slen=0;
      clrscr();
      printf("Enter The String\n");
      gets(str);
      for(i=0; str[i]!='\0';i++)
      {
            slen=slen+1;
      }
      printf("The Length of the string %s=%d\n",str,slen);
      getch();
}
```

Output

```
Enter The String
JssCollege
The Length of the string JssCollege=10
_
```

2. Program to demonstrate string functions

```
#include<stdio.h>
#include<conio.h>
void main()
{
      char a[20],b[20],c[20],d[20];
      clrscr();
      printf("Enter the String\n");
      gets(a);
      printf("Enter the another String\n");
      gets(b);
      strcpy(c,a);
      strcpy(d,b);
      printf("Copied String to  C %s\n",c);
      printf("Copied String to D %s\n",d);
      printf("The Length of String a is %d\n",strlen(a));
      printf("The Uppercase of String a is =%s\n",strupr(a));
      printf("The Reverse of string a is =%s\n",strrev(a));
      printf("Concatednated String of c and d is %s\n",strcat(c,d));
      if(strcmp(a,b)==0)
      {
            printf("Both the Strigs are Equal\n");
      }
      else
      {
            printf("Both the string are not Equal\n");
      }
      getch();
}
```

Output

```
Enter the String
Jss
Enter the another String
College
Copied String to  C Jss
Copied String to D College
The Length of String a is 3
The Uppercase of String a is =JSS
The Reverse of string a is =SSJ
Concatednated String of c and d is JssCollege
Both the string are not Equal
```

3. Program to demonstrate pointers in C

```
 #include<stdio.h>
#include<conio.h>
void main()
{
      int n=20,*ptr;
      clrscr();
      printf("Address of n=%p\n",&n);
      printf("value of n=%d\n",n);
      ptr=&n;
      printf("Address of Pointer ptr=%p\n",ptr);
      printf("Content of Pointer ptr=%d\n",*ptr);
      n=30;
      printf("Address of Pointer ptr=%p\n",ptr);
      printf("Content of Pointer ptr=%d\n",*ptr);
      *ptr=50;
      printf("Address of Pointer ptr=%p\n",ptr);
      printf("Content of Pointer ptr=%d\n",*ptr);
      getch();


}
```

Output

```
Address of n=FFF4
value of n=20
Address of Pointer ptr=FFF4
Content of Pointer ptr=20
Address of Pointer ptr=FFF4
Content of Pointer ptr=30
Address of Pointer ptr=FFF4
Content of Pointer ptr=50
_
```

4. Program to check a number for prime by defining isprime( ) function

```
 #include<stdio.h>
#include<conio.h>
int checkPrime(int);
void main()
{
      int num;
      clrscr();
      printf("Enter the Number\n");
      scanf("%d",&num);
      if(checkPrime(num)==0)
      {
            printf("%d is a prime Number\n",num);
      }
      else
      {
            printf("%d is not a prime number\n",num);
      }
      getch();
}
int checkPrime(int n)
{
      int flag=0,i;
      for(i=2;i<=n/2;i++)
      {
            if(n%i==0)
            {
                  flag=1;
                  break;
            }
      }
return flag;
}
```

Output

```
Enter the Number
5
5 is a prime Number
```

```
Enter the Number
9
9 is not a prime number
```

5. Program to read, display and to find the trace of a square matrix

```
#include<stdio.h>
#include<conio.h>
void main()
{
      int n,a[10][10],sum=0,i,j;
      clrscr();
      printf("Enter the Order of the Matrix\n");
      scanf("%d",&n);
      printf("Enter the Element of the Matrix A\n");
      for(i=0;i<n;i++)
      {
            for(j=0;j<n;j++)
            {
                  scanf("%d",&a[i][j]);
            }
      }
      printf("Elements of the Matrix A are\n");
      for(i=0;i<n;i++)
      {
            for(j=0;j<n;j++)
            {
                  printf("%d\t",a[i][j]);
            }
            printf("\n");
      }
      for(i=0;i<n;i++)
      {
            sum=sum+a[i][i];
      }
      printf("The Trace of Matrix A is %d\n",sum);
      getch();
}
```

Output

```
Enter the Order of the Matrix
2
Enter the Element of the Matrix A
1
2
3
4
Elements of the Matrix A are
1       2
3       4
The Trace of Matrix A is 5
```

6. Program to read, display and add two m x n matrices using functions

```
#include<stdio.h>
#include<conio.h>
void readMatrix(int[10][10],int);
void printMatrix(int[10][10],int);
void add_sub_Matrix(int[10][10],int[10][10],int[10][10],int[10][10],int);
void main()
{
      int n;
      int a[10][10],b[10][10],c[10][10],d[10][10];
      clrscr();
      printf("Enter the Order of the Matrix\n");
      scanf("%d",&n);
      printf("Enter the Element of the Matrix A\n");
      readMatrix(a,n);
      printf("Enter the Element of the Matrix B\n");
      readMatrix(b,n);
      printf("Matrix A is\n");
      printMatrix(a,n);
      printf("Matrix B is\n");
      printMatrix(b,n);
      add_sub_Matrix(a,b,c,d,n);
      printf("\n Sum of Two Matrice\n");
      printMatrix(c,n);
      printf("\nDifference of Two Matrices is\n");
      printMatrix(d,n);
      getch();
}
void readMatrix(int x[10][10],int n)
{
      int i,j;
      for(i=0;i<n;i++)
      {
            for(j=0;j<n;j++)
            {
                  scanf("%d",&x[i][j]);
            }
      }
}
void printMatrix(int y[10][10],int n)
{
      int i,j;
      for(i=0;i<n;i++)
      {
            for(j=0;j<n;j++)
            {
                  printf("%d\t",y[i][j]);
            }
            printf("\n");
      }
}
void add_sub_Matrix(int a[][10],int b[][10],int c[][10],int d[][10],int
n)
{
      int i,j;
      for(i=0;i<n;i++)
```

```
        {
                for(j=0;j<n;j++)
                {
                        c[i][j]=a[i][j]+b[i][j];
                        d[i][j]=a[i][j]-b[i][j];

                }
        }
}
```

Output

```
Enter the Element of the Matrix A
8
8
8
8
Enter the Element of the Matrix B
4
4
4
4
Matrix A is
8       8
8       8
Matrix B is
4       4
4       4

 Sum of Two Matrice
12      12
12      12

Difference of Two Matrices is
4       4
4       4
```

7. Program to read, display and multiply two m x n matrices using functions

```
#include<stdio.h>
#include<conio.h>
void readMatrix(int[10][10],int);
void printMatrix(int[10][10],int);
void mulMatrix(int[10][10],int[10][10],int[10][10],int);
void main()
{
      int n;
      int a[10][10],b[10][10],c[10][10];
      clrscr();
      printf("Enter the Order of the Matrix\n");
      scanf("%d",&n);
      printf("Enter the Element of the Matrix A\n");
      readMatrix(a,n);
      printf("Enter the Element of the Matrix B\n");
      readMatrix(b,n);
      printf("Matrix A is\n");
      printMatrix(a,n);
      printf("Matrix B is\n");
      printMatrix(b,n);
      mulMatrix(a,b,c,n);
      printf("\n Multification  of Two Matrice\n");
      printMatrix(c,n);
      getch();
}
void readMatrix(int x[10][10],int n)
{
      int i,j;
      for(i=0;i<n;i++)
      {
            for(j=0;j<n;j++)
            {
                  scanf("%d",&x[i][j]);
            }
      }
}
void printMatrix(int y[10][10],int n)
{
      int i,j;
      for(i=0;i<n;i++)
      {
            for(j=0;j<n;j++)
            {
                  printf("%d\t",y[i][j]);
            }
            printf("\n");
      }
}
void mulMatrix(int a[][10],int b[][10],int c[][10],int n)
{
      int i,j,k;
      for(i=0;i<n;i++)
      {
            for(j=0;j<n;j++)
            {          c[i][j]=0;
                  for(k=0;k<n;k++)
```

```
                    {
                          c[i][j]=c[i][j]+a[k][j]*b[i][k];
                    }

              }
       }
}
```

Output

```
Enter the Order of the Matrix
2
Enter the Element of the Matrix A
1
2
3
4
Enter the Element of the Matrix B
1
2
3
4
Matrix A is
1       2
3       4
Matrix B is
1       2
3       4

 Multification  of Two Matrice
7       10
15      22
```

8. Program to read a string and to find the number of alphabets, digits, vowels, consonants, spaces and special characters.

```
#include<stdio.h>
#include<conio.h>
void main()
{
      char str[100];
      int i,alpha=0,dig=0,spchar=0,vowels=0,consonant=0,space=0;
      clrscr();
      printf("Enter a String \n");
      gets(str);
      for(i=0;str[i]!='\0';i++)
      {
            if((str[i]>=65 &&str[i]<=90)||(str[i]>=97&&str[i]<=122))
            {
                  alpha=alpha+1;

      if(str[i]=='a'||str[i]=='e'||str[i]=='i'||str[i]=='o'||str[i]=='u'|
|str[i]=='A'||str[i]=='E'||str[i]=='I'||str[i]=='O'||str[i]=='U')
                  {
                        vowels++;
                  }
                  else
                  {
                        consonant++;
                  }
```

```
            }
            else if(str[i]>=48 &&str[i]<=57)
            {
                  dig++;
            }
            else if(str[i]==' '||str[i]=='\0' ||str[i]=='\n')
            {
                  space++;
            }
            else
            {
                  spchar++;
            }

      }
      printf("Total Number of Alphabets        =%d\n",alpha);
      printf("Total Digits               =%d\n",dig);
      printf("Special Characters         =%d\n",spchar);
      printf("Total Vowels                     =%d\n",vowels);
      printf("Number of Consonants             =%d\n",consonant);
      printf("Number of Spaces                 =%d\n",space);
      getch();
}
```

Output

```
Enter a String
JSS College for Women Chamarajanagar @ 571313
Total Number of Alphabets        =32
Total Digits                     =6
Special Characters               =1
Total Vowels                     =12
Number of Consonants             =20
Number of Spaces                 =6
```

9. Program to Reverse a String using Pointer

```
#include<stdio.h>
#include<conio.h>
void main()
{
      char str[30],*startptr,*endptr,ch;
      int i,slen;
      clrscr();
      printf("Enter a String\n");
      gets(str);
      slen=strlen(str);
      startptr=str;
      endptr=str;
      for(i=0;i<slen-1;i++)
      {
            endptr=endptr+1;
      }
      for(i=0;i<slen/2;i++)
      {
            ch=*endptr;
```

```
            *endptr=*startptr;
            *startptr=ch;
            startptr=startptr+1;
            endptr=endptr-1;
      }
      printf("The Reversed String is :%s",str);
      getch();
}
```

Output

```
Enter a String
JSS COLLEGE
The Reversed String is :EGELLOC SSJ_
```

10. Program to Swap Two Numbers using Pointers

```
#include<stdio.h>
#include<conio.h>
void swap(int*,int*);
void main()
{
      int a,b;
      clrscr();
      printf("Enter the Value of a and b\n");
      scanf("%d%d",&a,&b);
      printf("Before Swapping\n");
      printf("Value of a= %d\nValue of b = %d\n",a,b);
      swap(&a,&b);
      printf("After Swapping\n");
      printf("Value of a= %d\nValue of b =%d\n",a,b);
      getch();
}
void swap(int *ptr1,int *ptr2)
{
      int temp;
      temp=*ptr1;
      *ptr1=*ptr2;
      *ptr2=temp;
}
```

Output

```
Enter the Value of a and b
4
5
Before Swapping
Value of a= 4
Value of b = 5
After Swapping
Value of a= 5
Value of b =4
```

11. Program to demonstrate student structure to read & display records of n students.

```
#include<stdio.h>
#include<conio.h>
void main()
{
      struct student
      {
            char name[30];
            int rollno;
            int marks;
            int  percentage;
      };
      struct student s[30];
      int i,n;
      clrscr();
      printf("Enter the Number of Records You want to store\n");
      scanf("%d",&n);
      for(i=0;i<n;i++)
      {
            printf("Enter the Name, RollNo, Marks and Percentage of
Student %d\n",i+1);

      scanf("%s%d%d%d",s[i].name,&s[i].rollno,&s[i].marks,&s[i].percentag
e);
      }
      printf("Students Records\n");
      for(i=0;i<n;i++)
      {
            printf("\nName        =%s\n",s[i].name);
            printf("RolloNo     =%d\n",s[i].rollno);
            printf("Marks       =%d\n",s[i].marks);
            printf("Percentage  =%d\n",s[i].percentage);
      }
      getch();


}
```

Output

```
Enter the Number of Records You want to store
2
Enter the Name, RollNo, Marks and Percentage of Student 1
Vinay
112
456
76
Enter the Name, RollNo, Marks and Percentage of Student 2
Umesh
118
567
92
Students Records

Name        =Vinay
RolloNo       =112
Marks         =456
Percentage    =76

Name        =Umesh
RolloNo       =118
Marks         =567
Percentage    =92
```

12. Program to demonstrate the difference between structure & union.

```
#include<stdio.h>
#include<conio.h>
void main()
{
      struct s
      {
            int a;
            float b;
            char text[20];
      };
      union u
      {
            int a;
            float b;
            char text[20];
      };
      struct s s1={23,45.8,"JSSCWCH"};
      union u u1={45};
      printf("Struture Data\n");
      printf("a     =%d\n",s1.a);
      printf("b     =%f\n",s1.b);
      printf("text  =%s\n",s1.text);
      printf("Union Data\n");
      printf("a     =%d\n",u1.a);
      printf("b     =%f\n",u1.b);
      printf("text  =%s\n",u1.text);
      printf("Size of Struct and Union\n");
      printf("Size of Structure :%d\n",sizeof(s1));
      printf("Size of Union     %d\n",sizeof(u1));
      printf("Accessing Member of Struct and Union\n");
      printf("Accessing all Members at a time\n");
      s1.a=25;
      s1.b=45.6;
      strcpy(s1.text,"JSS");
      printf("Struture Data\n");
      printf("a     =%d\n",s1.a);
      printf("b     =%f\n",s1.b);
      printf("text  =%s\n",s1.text);
      u1.a=124;
      u1.b=560 ;
      printf("Union Data\n");
      printf("a     =%d\n",u1.a);
      printf("b     =%f\n",u1.b);
      printf("text  =%s\n",u1.text);
      printf("Accessing One Member  of structure and union\n");
      printf("strucuture data\n");
      s1.a=194;
      printf("a     =%d\n",s1.a);
      s1.b=2.4;
      printf("b     =%f\n",s1.b);
      strcpy(s1.text,"Porgramming in C");
      printf("text   =%s\n",s1.text);
      printf("union data\n");
      u1.a=194;
      printf("a     =%d\n",u1.a);
      u1.b=21.6;
```

```
        printf("b      =%f\n",u1.b);
        strcpy(u1.text,"Porgramming in C");
        printf("text    =%s\n",u1.text);
        getch();
}
```

Output

```
Struture Data
a      =23
b      =45.799999
text   =JSSCWCH
Union Data
a      =45
b      =0.000000
text   =-
Size of Struct and Union
Size of Structure :26
Size of Union     20
Accessing Member of Struct and Union
Accessing all Members at a time
Struture Data
a      =25
b      =45.599998
text   =JSS
Union Data
a      =0
b      =560.000000
text   =

Accessing Member of Struct and Union
Accessing all Members at a time
Struture Data
a      =25
b      =45.599998
text   =JSS
Union Data
a      =0
b      =560.000000
text   =
Accessing One Member  of structure and union
strucuture data
a      =194
b      =2.400000
text    =Porgramming in C
union data
a      =194
b      =21.600000
text    =Porgramming in C
```

Note: Student has to execute a minimum of 10 programs in each part to complete the Lab course

Evaluation Scheme for Lab Examination

Assessment Criteria		Marks
Program – 1 from Part B	Flowchart / Algorithm	02
	Writing the Program	04
	Execution and Formatting	04
Program -2 from Part B	Flowchart/Algorithm	02
	Writing the Program	04
	Execution and Formatting	04
Viva Voce based on C Programming		02
Practical Record		03
Total		**25**

****