**********AssignmentNo:1**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q.1 write a menu driven program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon users choice.

```
#include<stdio.h>
int main()
{
float fh,cl;
int choice;
printf("\n1:Convert temperature from fahrenheit to celsius");
printf("\n2:Convert temperature from celsius to fahrenheit");
printf("\n Enter your choice 1or2:");
scanf("%d",&choice);
if(choice==1)
{
printf("\n Enter temperature in fahrenheit");
scanf("%f",&fh);
cl=(fh-32)/1.8;
printf("\n temperature in celsius:%2f",cl);
}
else if(choice==2)
{
printf("\n Enter temperature in celcius");
scanf("%f",&cl);
fh=(cl*1.8)+32;
printf("\n temperature in fahrenheit:%2f",fh);
}
else
{
printf("\n invalid choice!!");
}
return 0;
}
```

**********Output**********

```
/$ gcc Fcelsius.c -o d
ubuntu@ubuntu-desktop:~/$ ./d

1:Convert temperature from fahrenheit to celsius
2:Convert temperature from celsius to fahrenheit
Enter your choice 1or2:1
 Enter temperature in fahrenheit 3.4
 temperature in celsius:-15.888889ubuntu@ubuntu-d
```

**********AssignmentNo:2**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q.2.WAP to calculate total marks,percentage and grade of a student.Marks obtained in each of the three subjects are to be input by the user. Assign grades according to the following criteria:

Grade A:Percentage>=80
Grade B:Percentage>=70 and <80
Grade C:Percentage>=60 and <70
Grade D:Percentage>=40 and <60
Grade E:Percentage<40

```
#include<stdio.h>
void main()
{
int m1,m2,m3,total;
float per;
printf("\n Enter a marks");
scanf("%d%d%d",&m1,&m2,&m3);
total=m1+m2+m3;
printf("total marks is %d\n",total);
per=total*100/300;
printf("per is:%f\n",per);
if(per>=80)
{
printf("Grade is A\n");
}
else if(per>=70&&per<80)
{
printf("Grade is B\n");
}
else if(per>=60&&per<70)
{
printf("Grade is C\n");
}
else if(per>=40&&per<60)
{
printf("Grade is D\n");
}
else if(per<40)
{
printf("Grade E\n");
}
}
```

**********Output**********

```
~/$ gedit 3subject.c
ubuntu@ubuntu-desktop:~/$ gcc 3subject.c -o d
ubuntu@ubuntu-desktop:~/$ ./d

 Enter a marks50
80
67
total marks is 197
per is:65.000000
Grade is C
```

****

**********Assignment No: 3**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q Write menu-driven program using user-defined function to find the raea of rectangle ,square, circle and triangle by accepting sutiable input parameters from user.

```
#include<stdio.h>
const float PI=3.1415927;
float areaC(float radius);
//float circle(float radius);
float areaR(float length,float width);
float areaT(float base,float height);
float areaS(float side);
void main()
{
int choice,radius,l,w,b,h,s;
//float area;
printf("Input 1 for area of circle\n: ");
printf("Input 2 for area of rectangle\n: ");
printf("Input 3 for area of traingle\n: ");
printf("Input 4 for area of square\n: ");
printf("Input your choice: ");
scanf("%d",&choice);
switch(choice)
{
  case 1:
printf("Input radius of circle: ");
scanf("%d",&radius);
printf("Area %.3f",areaC(radius));
break;
  case 2:
printf("Input length and width of rectangle: ");
scanf("%d%d",&l,&w);
printf("Area %.3f",areaR(l,w));
break;
  case 3:
printf("Input base and height of triangle: ");
scanf("%d%d",&b,&h);
printf("Area %.3f",areaT(b,h));
break;
    case 4:
printf("Input side of square: ");
scanf("%d",&s);
```

```
printf("Area %.3f",areaS(s));
break;
  default:
printf("Enter valid choice: ");
        }
}
float areaC(float radius)
{
return PI*radius*radius;
}

float areaR(float length,float width)
{
return length*width;
}
float areaT(float base,float height)
{
return 0.5*base*height;
}
float areaS(float side)
{
return side*side;
}
```

**********Output**********

```
Input 1 for area of circle
: Input 2 for area of rectangle
: Input your choice: 1
Input radius of circle: 2.34
Area 12.566ubuntu@ubuntu-desktop:~/$ gedit area.c
Input 1 for area of circle
: Input 2 for area of rectangle
: Input your choice: 2
Input length and width of rectangle: 23 4
Area 92.000
ubuntu@ubuntu-desktop:~/$ gedit area.c
ubuntu@ubuntu-desktop:~/$ gcc area.c -o a
ubuntu@ubuntu-desktop:~/$ ./a
Input 1 for area of circle
: Input 2 for area of rectangle
: Input 3 for area of traingle
: Input your choice: 3
Enter valid choice: ubuntu@ubuntu-desktop:~/$ ./a

ubuntu@ubuntu-desktop:~/$ gedit area.c
```

```
ubuntu@ubuntu-desktop:~/$ gcc area.c -o a
ubuntu@ubuntu-desktop:~/$ ./a
Input 1 for area of circle
: Input 2 for area of rectangle
: Input 3 for area of traingle
: Input your choice: 3
Input base and height of traingle: 4 3
Area 6.000ubuntu@ubuntu-desktop:~/$ gedit area.c


ubuntu@ubuntu-desktop:~/$ ./a
Input 1 for area of circle
: Input 2 for area of rectangle
: Input 3 for area of traingle
: Input 4 for area of square
: Input your choice: 4
Input side of square: 5
Area 25.000ubuntu@ubuntu-desktop:~/$ gedit area.c
ubuntu@ubuntu-desktop:~/$ gedit area.c
ubuntu@ubuntu-desktop:~/$ gcc area.c -o a
ubuntu@ubuntu-desktop:~/$ ./a
Input 1 for area of circle
: Input 2 for area of rectangle
: Input 3 for area of traingle
: Input 4 for area of square
: Input your choice: 5
Enter valid choice:
```

****

**********Assignment No:4**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q. WAP to display the first n terms of fibonacci sequence.

```
#include<stdio.h>
void main()
{
int i,n,t1=0,t2=1,nextterm;
printf("Enter the no.of term:");
scanf("%d",&n);
printf("Fibonacci Series:");
for(i=1;i<=n;i++)
{
printf("%d,\n",t1);
nextterm=t1+t2;
t1=t2;
t2=nextterm;
}
}
```

**********Output**********

```
$ gedit Fibonacci.c
ubuntu@ubuntu-desktop:~/$ gcc Fibonacci.c -o d
ubuntu@ubuntu-desktop:~/$ ./d
Enter the no.of term:1
Fibonacci Series:0,
ubuntu@ubuntu-desktop:~/$ ./d
Enter the no.of term:4
Fibonacci Series:0,
1,
1,
2,
```

****

**********Assignment No:5**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q.WAP to print palindrome numbers between given range.

```
#include<stdio.h>
int main()

{
  int num, rem, reverse_num, temp, start, end;

  printf("Enter the lower limit: ");
  scanf("%d",&start);

  printf("Enter the upper limit: ");
  scanf("%d",&end);

  printf("Palindrome numbers between %d and %d are: ",start,end);
  for(num=start;num<=end;num++){
    temp=num;
    reverse_num=0;
    while(temp){
      rem=temp%10;
      temp=temp/10;
      reverse_num=reverse_num*10+rem;
    }
    if(num==reverse_num)
      printf("%d ",num);
  }
  return 0;
}
```

**********Output**********

```
ubuntu@ubuntu-desktop:~/fyarati$ gcc palindrome.c
ubuntu@ubuntu-desktop:~/fyarati$ ./a.out
Enter the lower limit: 10
Enter the upper limit: 50
Palindrome numbers between 10 and 50 are: 11 22 33 44
```

****

**********Assignment No:6**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q WAP to find sum of the following series for n terms:1-2/2!+3/3!----n/n!.

```
#include<stdio.h>
double sumseries(double);
int main()
{
double numbers,sum;
printf("\n enter the value:");
scanf("%lf",&numbers);
sum=sumseries(numbers);
printf("\n sum of the above series=%lf",sum);
}
double sumseries(double m)
{
double sum2=0,f=1,i;
for(i=1;i<=m;i++)
{
f=f*i;
sum2=sum2+(i/f);
}
return(sum2);
}
```

**********Output**********

```
ubuntu@ubuntu-desktop:~/$ gedit val.c
ubuntu@ubuntu-desktop:~/$ gcc val.c -o val
ubuntu@ubuntu-desktop:~/$ ./d
bash: ./d: No such file or directory
ubuntu@ubuntu-desktop:~/$ ./val

 enter the value:10

 sum of the above series=2.718282
```

****

**********AssignmentNo:7**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q.WAP to sort given array in ascending as well as descending order.

```
#include<stdio.h>
void main()
{
      int a[20],n,i,j;
  printf("Array Size:");
  scanf("%d",&n);
  printf("Elements:");
      for(i=0;i<n;i++)
      {
              scanf("%d",&a[i]);

       }
              for(int i=0;i<n;i++)
              {
                 for(int j=0;j<n;j++)
                      {
                    if(a[j]>a[i])
                       {
                              int tmp=a[i];
                              a[i]=a[j];
                              a[j]=tmp;
                         }
                       }
              }

      printf("\n\n Ascending:");
      for(int i=0;i<n;i++)
              {
                      printf("\n%d",a[i]);
              }


            for(int i=0;i<n;i++)
            {
              for(int j=0;j<n;j++)
                {
                       if(a[j]<a[i])
                       {
                          int tmp=a[i];
                          a[i]=a[j];
                          a[j]=tmp;
                       }
                  }
              }
                       printf("\n\n Descending:");
```

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

**********Output**********

```
ubuntu@ubuntu-desktop:~$ gcc array.c -o a
ubuntu@ubuntu-desktop:~$ ./a
Array Size:4
Elements:1
54
58
2


 Ascending:
1
2
54
58

 Descending:
58
54
2
1
```

****

**********AssignmentNo:8**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q. WAP to calculate the sum and product of two compatile matrices.

```
#include<stdio.h>

void main()
{
    int a[3][3], b[3][3], c[3][3]={0}, d[3][3]={0};
    int i,j,k,m,n,p,q;
    printf("Enter no. of rows and columns in matrix A: ");
    scanf("%d%d",&m,&n);
    printf("Enter no. of rows and columns in matrix B: ");
    scanf("%d%d",&p,&q);
    if(m!=p || n!=q)
    {
        printf("Matrix Addition is not possible");
        return;
    }
    else if(n!=p)
    {
        printf("Matrix Multiplication is not possible");
        return;
    }
    else
    {
        printf("Enter elements of matrix A: ");
        for(i=0;i<m;i++)
            for(j=0;j<n;j++)
                scanf("%d", &a[i][j]);
        printf("Enter elements of matrix B: ");
```

```
        for(i=0;i<p;i++)
                for(j=0;j<q;j++)
                        scanf("%d", &b[i][j]);
        //Matrix Addition
        for(i=0;i<m;i++)
                for(j=0;j<n;j++)
                        c[i][j] = a[i][j] + b[i][j];
        printf("\nResult of Matirx Addition:\n");
        for(i=0;i<m;i++)
        {
                for(j=0;j<n;j++)
                        printf("%d ", c[i][j]);
                printf("\n");
        }
        //Matrix Multiplication
        for(i=0;i<m;i++)
                for(j=0;j<q;j++)
                        for(k=0;k<p;k++)
                                d[i][j] += a[i][k]*b[k][j];
        printf("\nResult of Matirx Multiplication:\n");
        for(i=0;i<m;i++)
        {
                for(j=0;j<q;j++)
                        printf("%d ", d[i][j]);
                printf("\n");
        }
    }

}
```

**********Output**********

```
ubuntu@ubuntu-desktop:~/$ gcc matrixfinal.c
ubuntu@ubuntu-desktop:~/$ ./a.out
Enter no. of rows and columns in matrix A:  3  3
Enter no. of rows and columns in matrix B: 3  3
```

Enter elements of matrix A: 5 4 3 6 7 8 2 4

7

Enter elements of matrix B: 5 6 2 1 4 2 3 2 7

Result of Matirx Addition:

10 10 5

7 11 10

5 6 14

Result of Matirx Multiplication:

38 52 39

61 80 82

35 42 61

****

**********AssignmentNo:9**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q.WAP to check whether a given number is prime or notusing nested function by introducting factorial fuction . ‘‘P is prime number using recursive function

```
#include<stdio.h>
int main()
{
int n,i,flag=0;
printf("Enter a value \n");
scanf("%d",&n);
for(i=2;i<=n/2;i++)
{
if(n%i==0)
{
flag=1;
break;
}
}
if(n==1)
{
printf("1 is neither prime not composit \n");
}
else
{
if(flag==0)
printf("%d is a prime \n",n);
else
printf("%d is not a prime \n",n);
}
return 0;
}
```

**********Output**********

output :
Enter a value
3
3 is a prime

Enter a value
4
4 is not a prime

**********AssignmentNo:10**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q.WAP to calculate factorial of given number using recursive function.

```
#include<stdio.h>
long int multiplynumber(int n);
int main()
{
int n;
printf("Enter the value");
scanf("%d",&n);
printf("Factorial of%d=%ld",n,multiplynumber(n));
return 0;
}
long int multiplynumber(int n)
{
if(n>=1)
return n* multiplynumber(n-1);
else
return 1;
}
```

**********Output**********

```
~$ gedit factorial.c
ubuntu@ubuntu-desktop:~$ gcc factorial.c -o d
ubuntu@ubuntu-desktop:~$ ./d
Enter tha value46
factorial of 46=0ubuntu@ubuntu-desktop:~$
```

****

**********AssignmentNo:11**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q.WAP to dynamically allocate memory of n items to an integer pointer ,display their sum and average.

```
#include <stdio.h>
#include<stdlib.h>
int main()
{
int i,n;
int *arr,sum=0,avg;
printf("Enter the total number of elements you want to enter");
scanf("%d",&n);
arr=(int*)malloc(n*sizeof(i+1));
for(i=0;i<n;i++)
{
printf("Enter element%d:",(i+1));
scanf("%d",arr+i);
sum+=*(arr+i);
}
printf("Sum is%d\n",sum);
avg=sum/n;
printf("Avg is %d\n",avg);
free(arr);
return 0;
}
```

**********Output**********

```
ubuntu@ubuntu-desktop:~/$ gedit ave.c
ubuntu@ubuntu-desktop:~/$ gcc ave.c -o ave
ubuntu@ubuntu-desktop:~/$ ./ave
Enter the total number of elements you want to enter20
Enter element1:30
Enter element2:40
Enter element3:50
Enter element4:60
Enter element5:70
Enter element6:80
Enter element7:90
Enter element8:10
Enter element9:22
Enter element10:33
Enter element11:44
Enter element12:55
Enter element13:66
Enter element14:77
Enter element15:88
Enter element16:99
Enter element17:12
Enter element18:13
```

Enter element19:14
Enter element20:15
Sum is968
Avg is 48

****

**********AssignmentNo:12**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q.WAP to swap two numbers using functions (call by reference).

```
#include<stdio.h>
void swap(int*a,int*b);
int main()
{
int x,y;
printf("Enter the value of x&Y\n");
scanf("%d%d",&x,&y);
printf("Before swapping\n x=%d\n y=%d\n",x,y);
swap(&x,&y);
printf("After swapping\n x=%d\n y=%d\n",x,y);
return 0;
}
void swap(int*a,int*b)
{
int temp;
temp=*b;
*b=*a;
*a=temp;
}
```

**********Output**********

```
ubuntu@ubuntu-desktop:~/$ gcc dec.c -o d
ubuntu@ubuntu-desktop:~/$ ./d
Enter the value of x&Y
10 20
Before swapping
 x=10
 y=20
After swapping
 x=20
 y=10
```

****

**********AssignmentNo:13**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q. WAP to dynamically allocate memory of n items to a character array ,end it with '/0'and count numbers of vowels, consonants and spaces in it.

```
#include<stdio.h>
void main()
{
char line[200];
int i,vowels=0,consonants=0,digits=0,spaces=0;
printf("enter a line of spring:");
fgets(line,sizeof(line),stdin);
for(i=0;line[i]!='\0';i++)
{
if(line[i]=='a'||line[i]=='e'||line[i]=='i'||line[i]=='o'||line[i]=='u'||line[i]=='A'||line[i]=='E'||line[i]=='I
'||line[i]=='O'||line[i]=='U')
{
vowels++;
}
else if(line[i]>='a'&&line[i]=='z'||(line[i]>='a'&&line[i]<='Z'))
{
consonants++;
}
else if(line[i]>'o'&&line[i]<='9')
{
digits++;
}
else if(line[i]=='0')
{
spaces++;
}
printf("\nvowels=%d",vowels);
printf("\nconsonants=%d",consonants);
printf("\ndigits=%d",digits);
printf("\nspaces=%d",spaces);
}
}
```

**********Output**********

****

**********AssignmentNo:14**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q.WAP to using user defined data type structure to store information of a student roll no,name,percentage. Create array of 10 students and display students having percentage>70.

```
#include<stdio.h>
#include<string.h>
struct student
{
int rollno;
char  First_name[60];
char Last_Name[50];
float per;
};
int main()
{
	int i;
	struct student st[10];
	printf("Enter Records of 10 students");
	for(i=0;i<10;i++)
		{
			printf("\nEnter Rollno:");
			scanf("%d",&st[i].rollno);
			printf("\nEnter First Name:");
			scanf("%s",st[i].First_name);
			printf("\nEnter Last Name:");
			scanf("%s",st[i].Last_Name);
			printf("\nEnter Percentage:");
			scanf("%f",&st[i].per);
		}
	printf("\nStudent information List:");
	for(i=0;i<10;i++)
	{
		if(st[i].per>70)
		{
			printf("\nRollno:%d,First Name:%s,Last
Name:%s,Percentage:%f",st[i].rollno,st[i].First_name,st[i].Last_Name,st[i].per);
		}
	}
return 0;
}
```

**********Output**********

```
ubuntu@ubuntu-desktop:~/$ gcc student.c -o s1
ubuntu@ubuntu-desktop:~/$ ./s1
Enter Records of 10 students
Enter Rollno:101

Enter First Name:
```

Enter Last Name:patil

Enter Percentage:72

Enter Rollno:102

Enter First Name:amey

Enter Last Name:Wagh

Enter Percentage:65

Enter Rollno:103

Enter First Name:poonam

Enter Last Name:Jagtap

Enter Percentage:75

Enter Rollno:104

Enter First Name:Amir

Enter Last Name:Mane

Enter Percentage:54

Enter Rollno:106

Enter First Name:Amit

Enter Last Name:Mane

Enter Percentage:69

Enter Rollno:107

Enter First Name:Tara

Enter Last Name:Patil

Enter Percentage:87

Enter Rollno:108

Enter First Name:Amita

Enter Last Name:Deshmukh

Enter Percentage:63

Enter Rollno:109

Enter First Name:geeta

Enter Last Name:Patil

Enter Percentage:63

Enter Rollno:110

Enter First Name:Ram

Enter Last Name:Mane

Enter Percentage:87

Enter Rollno:110

Enter First Name:Lajari

Enter Last Name:Kulkarni

Enter Percentage:54

Student information List:
Rollno:101,First Name:,Last Name:patil,Percentage:72.000000Rollno:103,First Name:poonam,Last Name:Jagtap,Percentage:75.000000 Rollno:107,First Name:Tara,Last Name:Patil,Percentage:87.000000 Rollno:110,First Name:Ram,Last Name:Mane,Percentage:87.00000

****

**********AssignmentNo:15**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q.WAP to copy contain of text file into another text file.

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
FILE *fptr1, *fptr2;
char filename[100], c;
printf("Enter the filename to open for reading \n");
scanf("%s", filename);
fptr1=fopen(filename, "r");
if(fptr1==NULL)
    {
            printf("Cannot open file %s\n",filename);
            exit(0);
    }
    printf("Enter the filename to open for writing \n");
    scanf("%s",filename);
    fptr2=fopen(filename,"w");
    if(fptr2==NULL)
        {
        printf("Cannot open file %s \n", filename);
        exit(0);
        }
        c=fgetc(fptr1);
        while(c!=EOF)
        {
            fputc(c,fptr2);
            c=fgetc(fptr1);
        }
printf("\nContents copied to %s", filename);
fclose(fptr1);
fclose(fptr2);
return 0;
}
```

**********Output**********

```
ubuntu@ubuntu-desktop:~/$ gcc dynamic.c -o d
ubuntu@ubuntu-desktop:~/$ ./d
Enter the filename to open for reading
demo.txt
Enter the filename to open for writing
demo1.txt
Contents copied to demo1.txt
```

****

**********Assignment No:16**********

Name: **Roll No:**

Std: Bsc I **Date:**

Sign:

****

Q.WAP to count numbers of lines and character of given text file.

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
FILE *file;
char path[100];
char ch;
int characters,words,lines;
printf("Enter source file path:");
scanf("%s",path);
file=fopen(path,"r");
if(file==NULL)
{
printf("\nUnable to open file.\n");
printf("Please check if file exists and you have read privilege.\n");
exit(EXIT_FAILURE);
}
characters=words=lines=0;
while((ch=fgetc(file))!=EOF)
{
characters++;
if(ch=='\n'|| ch=='\0')
lines++;
if(ch==' '||ch=='\t'||ch=='\n'||ch=='\0')
words++;
}
if(characters>0)
{
words++;
lines++;}
printf("\n");
printf("Total characters=%d\n",characters);
printf("Total words=%d\n",words);
printf("Total lines=%d\n",lines);
fclose(file);
return 0;}
```

**********Output**********

```
ubuntu@ubuntu-desktop:~/$ gcc count.c -o c1
ubuntu@ubuntu-desktop:~/$ ./c1
Enter source file path: filedemo.txt
Total characters=78
Total words=6
Total lines=4
```

****