store
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# Week - 2 Programs

3) Write C program to accept a number n from the user and print n rows of output as show.

```
#include <stdio.h>
int main()
{
    int i, j, n;
    int num;
    num = 1;
    printf("Enter the value of n:\n");
    scanf("%d", &n);
    for(i=0; i<n; i++)
    {
        for(j=0; j<=i; j++)
        {
            printf("num :%d\t", num);
            num += 1;
        }
        printf("\n");
    }
    return 0;
}
```

4) Write a C program to accept the CIE marks (out of 50) and SEE marks (out of 100) of a student and print his/her grade.

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

int main()
{
```

```
int cie, see, sum;
sum=0;
char grade;
printf("Enter your CIE marks : \n");
scanf("%d", &cie);
printf("Enter your SEE marks : \n");
scanf("%d", &see);
sum = cie + (see/2);
if(sum >= 90 && sum <= 100)
    grade = "S";
else if (sum >= 80 && sum <= 89)
    grade = "A";
else if (sum >= 70 && sum <= 79)
    grade = "B";
else if (sum >= 60 && sum <= 69)
    grade = "C";
else if (sum >= 50 && sum <= 59)
    grade = "D";
else if (sum >= 40 && sum <= 49)
    grade = "E";
else
    grade = "F";
printf("You achieved %c grade \n", grade);
return 0;
}
```

5) Write a C program to print the prime numbers between given two integers

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

int main()
{
    int a, b, n, i, j, flag;
```

```
printf("Enter the first number : \n");
scanf("%d", &a);
printf("Enter the second number. \n");
scanf("%d", &b);
if (a < b)
{
    for(i=a; i<=b; i++)
    {
        flag = 0;
        for(j=2; j<= i/2; j++)
        {
            if((i%j) == 0)
            {
                flag = 1;
                continue;
            }
        }
        if (flag != 1)
            printf("%d\n", i);
    }
}
else
    printf("The first number should be lesser
            than the second ! \n");
return 0;
}
```

6) Write a C program that prints the area and volume of any one of the given shapes : Cylinder, Cone or Sphere :-

→

```
void cylinder();
void cone();
void sphere();
```

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

int main()
{
    int choice;
    do
    {
        printf("------MENU------\n");
        printf("1. Cylinder\n");
        printf("2. Cone\n");
        printf("3. Sphere\n");
        printf("4. EXIT\n");
        printf("Enter the number of your choice:\n");
        scanf("%d", &choice);
        switch(choice)
        {
            case 1: cylinder();
                    break;
            case 2: cone();
                    break;
            case 3: sphere();
                    break;
            case 4: printf("EXITING.....\n");
                    break;
            default:
                    printf("Enter the correct number
                            from the list\n");
        }
    }
    while(choice!=4);
    return 0;
}
```

```
void cylinder()
{
    float pi = 3.1415;
    float r, h, area, vol;
    printf("Enter the radius of cylinder \n");
    scanf("%f", &r);
    printf("Enter the height of cylinder \n");
    scanf("%f", &h);
    area = (2*pi*r*h) + (2*pi*(r*r));
    vol = (pi*(r*r)*h);
    printf("The area is : %0.3f \n", area);
    printf("The volume is : %0.3f \n", vol);
}

void cone()
{
    float pi = 3.1415;
    float r, h, area, vol;
    printf("Enter the radius of the cone \n");
    scanf("%f", &r);
    printf("Enter the height of the cone \n");
    scanf("%f", &h);
    area = (pi*r)*(r + sqrt((r*r)+(h*h)));
    vol = (pi*(r*r)*h)/3;
    printf("The area is : %0.3f \n", area);
    printf("The volume is : %0.3f \n", vol);
}
void sphere()
{
    float pi = 3.1415;
    float r, area, vol;
    printf("Enter the radius of the sphere \n");
    scanf("%f", &r);
    area = 4*pi*(r*r);
    vol = (4/3)*pi*(r*r*r);
```

```
    printf("The area of the sphere is : %.3f \n", area);
    printf("The volume is : %.3f \n", vol);
}
```

7) Write a C program to count the number of students registered for 3 elective courses ---.

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

int main()
{
    char name[5][20];
    int ele[5];
    int i, j, x, ctr1, ctr2, ctr3;
    ctr1 = ctr2 = ctr3 = 0;
    for (i=0; i<5; i++)
    {
        printf("Enter name of student %d \n", i+1);
        scanf("%s", name[i]);
        printf("--- CHOICE OF ELECTIVES --- \n");
        printf("1. Internet of Things \n");
        printf("2. Advanced Java and J2EE \n");
        printf("3. Advanced Data Structures \n");
        printf("Enter your choice! \n");
        scanf("%d", &ele[i]);
    }
    printf("---- CHOICE OF ELECTIVES ---- \n");
    printf("1. Internet of Things \n");
    printf("2. Advanced Java and J2EE \n");
    printf("3. Advanced Data Structures \n");
    printf("Enter the elective for which you
            want to display the students! \n");
    scanf("%d", &x);
```

```
printf("\n\n");
for(i=0; i<5; i++)
{
    if(elc[i] == x)
        printf("Name %d : %s\n", i+1, name[i]);
}
for(i=0; i<5; i++)
{
    if(elc[i] == 1)
        ctr1++;
    else if(elc[i] == 2)
        ctr2++;
    else
        ctr3++;
}
printf("\n");
printf("The number of students in Elective 1 are: %d\n", ctr1);
printf("The number of students in Elective 2 are: %d\n", ctr2);
printf("The number of students in Elective 3 are: %d\n", ctr3);
printf("\n");
if(ctr1 < 2)
{
    printf("Course 1 has been floated\n");
    for(i=0; i<5; i++)
    {
        if(elc[i] == 1)
            printf("%d. Advanced Java and J2EE\n");
```

```
        printf("3. Advanced Data Structures \n");
        printf("Enter your choice!");
        scanf("%d", &ele[i]);
    }
  }
 }
 else if (ctr2 < 2)
 { printf("Course 2 has been floated \n");
   for(i=0; i<5; i++)
   {
     if(ele[i] == 2)
     {
        printf("1. Internet of Things \n");
        printf("2. Advanced Data Structures \n");
        printf("Enter your choice! \n");
     }
   }
 }
 else
 {
   printf("Course 3 has been floated \n");
   for(i=0; i<5; i++)
   {
     if(ele[i] == 3)
     {
        printf("1. Internet of Things \n");
        printf("2. Advanced Java & J2EE \n");
        printf("Enter your choice!");
        scanf("%d", &ele[i]);
     }
   }
 }
 ctr1 = ctr2 = ctr3 = 0;
```

```
for (i=0; i<5; i++)
{
  if (elc[i] == 1)
    ctr1++;
  else if (elc[i] == 2)
    ctr2++;
  else
    ctr3++;
}
printf("\n");
printf("The number of students in elective 1
        are : %d\n", ctr1);
printf("The number of students in elective 2
        are : %d \n", ctr2);
printf("The number of students in elective 3
        are : %d \n", ctr3);
printf("\n");

if (ctr1 != 0)
{
  printf("--- The students in Elective 1 --\n");
  for (i=0; i<5; i++)
  {
    if (elc[i] == 1)
      printf("Name %d : %s \n", i+1,
             name[i]);
  }
}
if (ctr2 != 0)
{
  printf("The students in Elective 2 \n");
  for (i=0; i<5; i++)
  {
    if (elc[i] == 2)
      printf("Name %d : %s \n", i+1,
             name[i]);
  }
}
```

```
if (ctr3 != 0)
{
    printf("--- The Students in Elective 3 ---\n");
    for(i=0; i<5; i++)
    {
        if (elc[i] == 3)
            printf("Name %d : %s\n", i+1,
                                    name[i]);
    }
}
return 0;
}
```