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22/9/2020 Week-2 1BM19CS006

3) Write C/Java program to accept a number n from the user and print n rows of O/P as given below if n=4.

```
1
2  3
4  5  6
7  8  9  10.
```

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

O/P Enter n = 4.

```
1
2  3
4  5  6
7  8  9  10.
```

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4) Write a C/Java program to accept CIE (50) marks and SEE marks (100) of a student and print his/her grade. Use if else if ladder.

```
#include <stdio.h>
int main()
{
  int cie, see; float total;
  printf ("Enter cie and see : \n");
  scanf ("%d %d", &cie, &see);
  total = cie + (see/2);
  if (total >= 90 && total <=100)
    printf ("Grade : S \n");
  else if (total >=80 && total <=90)
  printf ("Grade:A \n");
  else if (total >=70 && total <=80)
  printf ("Grade : B \n");
  else if ( total >=60 && total <=70)
  printf ("Grade : C \n");
  else if ( total >= 50 && total <= 60)
  printf ("Grade : D \n");
  else if ( total >=40 && total <=50)
  printf ("Grade : E \n");
  else if (total <40)
  printf ("Grade : F");
  return 0;
}
```

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5) Write a C program to print the prime nos between given 2 integers (inclusive). Accept 2 integers from user.

```
#include<stdio.h>
int main()
{
 int i, j, num1, num2, flag;
 printf("Enter 2 numbers : ");
 scanf("%d %d", &num1, &num2);
 printf("Prime numbers between %d and %d
      are: \n", num1, num2);
 for(i=num1+1; i<=num2; i++)
{
  flag=0;
 for(j=2; j<=i/2; j++)
{
 if(i%j==0)
 {
  flag=1;
  break;
 }
 if(flag==0)
  printf("%d ",i);
}
 return 0;
}
```

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4) Write a C program which prints the area & vol of any one of the given shapes. ~~given~~ Accept the choice of shape, appropriate IP from user; calculate & display area & vol of the same.
Cyl, cone, sphere -

```
#include <stdio.h>
#include <math.h>
void main()
{
 int r, h, choice;
 float area, vol;
 printf("1. Cylinder \n 2. Cone \n 3. Sphere");
 printf("Enter choice");
 scanf("%d", &choice);
 switch(choice)
 { case1: printf("Enter r and h of cylinder:");
   scanf("%d %d", &r, &h);
  area = 2*3.14*r*h + 2*3.14*r*r;
  vol = 3.14*r*r*h;
   break;
 case 2: printf("Enter r and h of cone:");
 scanf("%d %d", &r, &h);
 area = ~~3*~~ 3.14*r*(r* + sqrt(h*h+r*r));
vol = (3.14*r*r*h)/3;
 break;
```

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```
case 3: printf("Enter r of sphere: ");
scanf("%d", &r);
area = 4*3.14*r*r;
vol = (4*3.14*r*r*r)/3;
break;
}
printf("Area is %f \n Volume is %f", area, vol);
}
```

7) #include <stdio.h>
void main()
{
int n, i, m, min, x, c1, c2, c3;
struct student {
int ec;
char name[50];
} a[50];
printf("Enter no of students: \n");
scanf("%d", &n);
for(i=0; i<n; i++)
{
printf("Enter %d student name and course
1. Internet of Things \n 2. Advanced Java
and J2EE \n 3. Advanced Data
Structures \n", i+1);
scanf("%s %d", a[i].name, &a[i].ec);

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```
if (a[i].ec == 1)
    c1++;
if (a[i].ec == 2)
    c2++;
if (a[i].ec == 3)
    c3++;
}
if (c1 <= c2 && c1 <= c3)
    min = c1;
if (c2 <= c1 && c2 <= c3)
    min = c2;
if (c3 <= c1 && c3 <= c2)
    min = c3;
printf ("Enter course number \n");
scanf ("%d", &x);
printf ("Names of students opting for x \n");
for (i=0; i<n; i++)
{
    if (a[i].ec == x)
        printf ("%s \n", a[i].name);
}
printf ("number of students in
    course 1 : %d \n", c1);
printf ("Number of students in course 2: %d
    \n", c2);
printf ("Number of students in course 3: %d
    \n", c3);
```

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```
if (c1<=3 && c2>=3 && c3>=3)
{ printf ("Course1 won't be floated. Select
   from other 2 courses\n");
  m=1;
}
if (c1>=3 && c2<3 && c3>=3)
{ printf ("Course 2 won't be floated. Select from
   other 2 courses\n");
   m=2;
}
 if (c3>=3 && c2>=3 && c3<3)
{ printf ("Course 3 won't be floated. Select from
   other 2 courses\n");
    m=3;
 }
 else
{ if (min==c1)
  { printf ("Select from courses 2 and 3\n");
    m=1;
  }
 else if (min==c2)
 { printf ("Select from courses 1 and 3\n");
    m=2;
 }
 else if (min==c3)
 { printf ("Select from courses 1 and 2\n");
    m=3;
 }
```

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```
if (m==1)
{
  for (i=0; i<n; i++)
{ if (a[i].ec==1)
  {
    printf ("Enter new course, name=%s \n",
            a[i].name);
  scanf ("%d", &a[i].ec);
}}}
if (m==2)
{
  for (i=0; i<n; i++)
{ if (a[i].ec==2)
  {
    printf ("Enter new course, name=%s \n",
    a[i].name);
  scanf ("%d", &a[i].ec);
}}}
if (m==3)
{
  for (i=0; i<n; i++)
{
  printf if (a[i].ec==3)
  {
    printf ("Enter new course, name=%s \n",
    a[i].name);
  scanf ("%d", &a[i].ec);
}}}
```

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```
printf("Students in course 1: \n");
for(i=0; i<n; i++)
{
    if(a[i].ec == 1)
printf("%s \n", a[i].name);
}
printf("Students in course 2: ");
for(i=0; i<n; i++)
{
if(a[i].ec == 2)
printf("%s \n", a[i].name);
}
printf("Students in course 3: ");
for(i=0; i<n; i++)
{
if(a[i].ec == 3)
printf("%s \n", a[i].name);
}
}
```