

Practice - 2

HEMANG SINGH
18M19CS061

6) C- Program which prints the area & the Volume of any shape of user's choice.

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

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

```
int main()
```

```
{
```

```
float r, h, area, volume;
```

```
int opt;
```

```
char ch;
```

```
const float pi = 3.14;
```

```
do {
```

```
printf("For which shape do you want to  
Calculate Area & Volume : ");
```

```
printf(" 1- Cylinder 2- Cone  
3- Sphere ");
```

```
scanf("%d", &opt);
```

```
switch(opt) {
```

```
case 1:
```

```
printf("Enter the radius of  
Cylinder : ");
```

```
scanf("%f", &r);
```

```
printf("Enter the height of  
Cylinder : ");
```

```
scanf("%f", &h);
```

```
area = (2 * pi * r * h) + (2 * pi * r * r);
```

```
volume = pi * r * r * h;
```

```
printf("Area : %f", area);
```

```
printf("Volume : %f", volume);
```

```
break;
```

Case 2 :

```
printf("Enter the radius of Cone : ");
scanf("%f", &r);
printf("Enter the height of Cone : ");
scanf("%f", &h);
area Volume = pi * r * r * (h/3);
area = pi * r * (r + Sqrt((h*h + r*r)));
printf("Area : %f", area);
printf("Volume : %f", volume);

break;
```

Case 3 :

```
printf("Enter the radius of sphere:");
scanf("%f", &r);
```

```
printf("Area : %f", area);
```

```
area = 4 * pi * r * r;
```

```
Volume = (4/3) * pi * r * r * r;
```

```
printf("Area : %f", area);
```

```
printf("Volume : %f", volume);
```

```
break;
```

default :

```
printf("Enter a valid option!!");
break;
```

}

```
printf("Do you want to repeat the operation Y/N : ");
```

```
scanf("%s", &ch);
```

```
} while (ch == 'y' || ch == 'Y');
```

```
return 0;
```

}

7) C- Prog to count the no. of std. registered for three courses.

```
#include <stdio.h>
struct Student {
    char name[20];
    int choice;
    int choice1;
} st[100];

int main()
{
    int i, n;
    int c1 = 0;
    int c2 = 0;
    int c3 = 0;
    printf("Enter the number of students : \n");
    scanf("%d", &n);
    for (i = 0; i < n; i++)
    {
        printf("Enter the name of the students: \n");
        scanf("%s", &st[i].name);
        printf("\n\n The following are the elective\n the student can choose : \n");
        printf("\n 1. IOT \n 2. Adv. Java \n 3\n 3. Adv. Data DS \n");
        scanf("%d", &st[i].choice);

        if (st[i].choice == 1) {
            printf(" %s choose IOT course\n", st[i].name);
            c1++;
        }
    }
}
```

```

else if (st[i].choice == 2) {
    printf(" %s choose Adv. Java Course\n",
           st[i].name);
    c2++;
}
else if (st[i].choice == 3) {
    printf(" %s choose Adv. D.S\n", st[i].name);
    c3++;
}
else printf(" \n Invalid option");

```

```

}
printf(" \n The total number of students opting
for IOT are : %d\n", c1);

```

```

printf(" \n The Total number of students opting
for Adv. Java are : %d ", c2);

```

```

printf(" \n The total no. of students opting
for Adv. D.S : %d\n", c3);

```

```

printf(" \n \t \t *** Students in IOT ***\n");
for (i = 0; i < n; i++)

```

```

{
    if (st[i].choice == 1)
        printf(" \n %s", st[i].name);
}

```

```

printf(" \n \t \t *** Students in Adv. Java ***\n");
for (i = 0; i < n; i++)

```

```

{
    if (st[i].choice == 2)
        printf(" \n %s", st[i].name);
}

```

```

printf(" \n \t \t *** Students in Adv. D.S ***\n");
for (i = 0; i < n; i++)

```



```

    {
        if (st[i].choice == 3)
            printf("\n %s", st[i].name);
    }

```

```

}
do
{

```

```

    if (c1 < 5 || c2 < 5 || c3 < 5)
    {

```

```

        printf("\n\n The number of students are  
less than 5 for this course,  
∴ please select option from  
the other two courses \n");
    }

```

```

    for (i = 0; i < n; i++) {

```

```

        printf("\n select from the below  
courses other than you  
had selected before: \n");

```

```

        printf("1. IOT \n 2. Adv. Java \n 3. Adv.  
D.S");

```

```

        scanf("%d", &st[i].choice);

```

```

        if (st[i].choice == 1)

```

```

            c1++;

```

```

        else if (st[i].choice == 2)

```

```

            c2++;

```

```

        else if (st[i].choice == 3)

```

```

            c3++;

```

```

        else printf("Invalid input");
    }

```

```

    printf("\n\n The total no. of students  
opting for IOT are: %d \n", c1);
    printf("\n\n The total no. of students  
opting for Adv. java: %d \n", c2);

```

```
printf("The total no. of students opted  
for Adv. D.S: %d", c3);
```

```
printf("\n\t\t\t** Students in JOT**  
\n");
```

```
for(i=0; i<n; i++)
```

```
{  
    if(st[i].choice == 1)  
        printf("\n %s", st[i].name);
```

```
}  
printf("\n\t\t\t** Students in Adv.  
Java * * \n");
```

```
for(i=0; i<n; i++)
```

```
{  
    if(st[i].namechoice == 2)  
        printf("\n %s", st[i].name);
```

```
}  
printf("\n\t\t\t** Students in Adv.  
D.S * * * \n");
```

```
for(i=0; i<n; i++)
```

```
{  
    if(st[i].choice == 3)  
        printf("\n %s", st[i].name);
```

```
}
```

```
}
```

```
}
```

```
while (c1 < 5 || c2 < 5 || c3 < 5);
```

```
}
```