

```
1 #include<stdio.h>
2 #include<math.h>
3 int main()
4 {
5     float r,h,area,volume;
6     int opt;
7     char ch;
8     const float pi=3.14;
9     do{
10         printf("For which shape do you want to calculate Area and Volume: \n");
11         printf("\n OPTIONS:\n1-Cylinder\n2-Cone\n3-Sphere\n");
12         scanf("%d",&opt);
13         switch(opt){
14             case 1:
15                 printf("\nEnter the radius of cylinder: ");
16                 scanf("%f",&r);
17                 printf("\nEnter the height of cylinder: ");
18                 scanf("%f",&h);
19                 area = (2*pi*r*h) + (2*pi*r*r);
20                 volume = pi*r*r*h;
21                 printf("\n Area : %f",area);
22                 printf("\n Volume : %f",volume);
23                 break;
24             case 2:
25                 printf("\nEnter the radius of Cone: ");
26                 scanf("%f",&r);
27                 printf("\nEnter the height of Cone: ");
28                 scanf("%f",&h);
29                 area = pi*r*(r+sqrt((h*h + r*r)));
30                 volume = pi*r*r*(h/3);
31                 printf("\n Area : %f",area);
32                 printf("\n Volume : %f",volume);
33                 break;
34             case 3:
35                 printf("\nEnter the radius of Sphere: ");
36                 scanf("%f",&r);
37                 area = 4*pi*r*r;
38                 volume = (4/3)*pi*r*r*r;
39                 printf("\n Area : %f",area);
40                 printf("\n Volume : %f",volume);
41                 break;
42             default:
43                 printf("Enter a valid option!!");
44                 break;
45         }
46         printf("\nDo you want to repeat the operation Y/N:\n ");
47         scanf("%s", &ch);
48     }
49     while (ch == 'y' || ch == 'Y');
50     return 0;
51 }
52
```

2-Cone
3-Sphere
2

Enter the radius of Cone: 12

Enter the height of Cone: 11

Area : 1065.546021

Volume : 1657.920044

Do you want to repeat the operation Y/N:

y

For which shape do you want to calculate Area and Volume:

OPTIONS:

1-Cylinder
2-Cone
3-Sphere
3

Enter the radius of Sphere: 2

Area : 50.240002

Volume : 25.120001

Do you want to repeat the operation Y/N:

n

Process returned 0 (0x0) execution time : 16.868 s

Press any key to continue.


```
Start here x 1.c x 2.c x 3.c x 4.c x 5.c x 6.c x 7.c x 8.c x q.c x *p.c x arnav.c x amit.c x
34     else if(st[i].choice==3)
35     {
36         printf("%s choose Advanced Data Structures course\n",st[i].name);
37         c3++;
38     }
39     else
40         printf("\nINVALID OPTION");
41 }
42
43 printf("\nThe total number of students opting for Internet of things are:%d\n",c1);
44 printf("The total number of students opting for Advanced java and J2EE are:%d\n",c2);
45 printf("The total number of students opting for Advanced Data Structures are:%d\n",c3);
46
47 printf("\n\t\t****Students in Internet of things course****\n ");
48 for(i=0;i<n;i++)
49 {
50     if(st[i].choice==1)
51         printf("\n%s",st[i].name);
52 }
53 printf("\n\t\t****Students in Advanced java and J2EE course****\n ");
54 for(i=0;i<n;i++)
55 {
56     if(st[i].choice==2)
57         printf("\n%s",st[i].name);
58 }
59 printf("\n\t\t****Students in Advanced Data Structures course****\n ");
60 for(i=0;i<n;i++)
61 {
62     if(st[i].choice==3)
63         printf("\n%s",st[i].name);
64 }
65
66 do
67 {
68     if(c1<5 || c2<5 || c3<5)
69     {
70         printf("\n\nThe number of students are less than 5 for this course, therefore please select an option from the other two courses\n");
71         for(i=0;i<n;i++) {
72             printf("\nSelect from the below courses OTHER than the course you had selected before:\n");
73             printf("1. Internet of things\n2. Advanced java and J2EE\n3. Advanced Data Structures\n");
```



```
65
66 do
67 {
68     if(c1<5 || c2<5 || c3<5)
69     {
70         printf("\n\nThe number of students are less than 5 for this course, therefore please select an option from the other two courses\n");
71         for(i=0;i<n;i++) {
72             printf("\nSelect from the below courses OTHER than the course you had selected before:\n");
73             printf("1.Internet of things\n2.Advanced java and J2EE\n3.Advanced Data Structures\n");
74             scanf("%d",&st[i].choice);
75             if(st[i].choice==1)
76                 c1++;
77             else if(st[i].choice==2)
78                 c2++;
79             else if(st[i].choice==3)
80                 c3++;
81             else
82                 printf("INVALID INPUT");
83         }
84         printf("\nThe total number of students opting for Internet of things are:%d\n",c1);
85         printf("The total number of students opting for Advanced java and J2EE are:%d\n",c2);
86         printf("The total number of students opting for Advanced Data Structures are:%d\n",c3);
87
88         printf("\n\t\t\t****Students in Internet of things course****\n ");
89         for(i=0;i<n;i++)
90         {
91             if(st[i].choice==1)
92                 printf("\n%s",st[i].name);
93         }
94         printf("\n\t\t\t****Students in Advanced java and J2EE course****\n ");
95         for(i=0;i<n;i++)
96         {
97             if(st[i].choice==2)
98                 printf("\n%s",st[i].name);
99         }
100         printf("\n\t\t\t****Students in Advanced Data Structures course****\n ");
101         for(i=0;i<n;i++)
102         {
103             if(st[i].choice==3)
104                 printf("\n%s",st[i].name);
```

```
Start here x 1.c x 2.c x 3.c x 4.c x 5.c x 6.c x 7.c x 8.c x q.c x *p.c x arnav.c x amit.c x
72     printf("\nSelect from the below courses OTHER than the course you had selected before:\n");
73     printf("1.Internet of things\n2.Advanced java and J2EE\n3.Advanced Data Structures\n");
74     scanf("%d",&st[i].choice);
75     if(st[i].choice==1)
76         c1++;
77     else if(st[i].choice==2)
78         c2++;
79     else if(st[i].choice==3)
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81     else
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84 printf("\nThe total number of students opting for Internet of things are:%d\n",c1);
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88 printf("\n\t\t\t****Students in Internet of things course****\n ");
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90 {
91     if(st[i].choice==1)
92         printf("\n%s",st[i].name);
93 }
94 printf("\n\t\t\t****Students in Advanced java and J2EE course****\n ");
95 for(i=0;i<n;i++)
96 {
97     if(st[i].choice==2)
98         printf("\n%s",st[i].name);
99 }
100 printf("\n\t\t\t****Students in Advanced Data Structures course****\n ");
101 for(i=0;i<n;i++)
102 {
103     if(st[i].choice==3)
104         printf("\n%s",st[i].name);
105 }
106 }
107 }
108 while(c1<5 || c2<5 || c3<5);
109 }
110 }
```

Enter the number of students:

7

Enter the name of the student:h

The following are the electives the student can choose:

- 1.Internet of things
- 2.Advanced java and J2EE
- 3.Advanced Data Structures

Please select your choice from the above:

1

h choose Internet of things course

Enter the name of the student:e

The following are the electives the student can choose:

- 1.Internet of things
- 2.Advanced java and J2EE
- 3.Advanced Data Structures

Please select your choice from the above:

2

e choose Advanced java and J2EE course

Enter the name of the student:m

The following are the electives the student can choose:

- 1.Internet of things
- 2.Advanced java and J2EE
- 3.Advanced Data Structures

Please select your choice from the above:

3

m choose Advanced Data Structures course

Enter the name of the student:a

The following are the electives the student can choose:

The following are the electives the student can choose:

- 1.Internet of things
- 2.Advanced java and J2EE
- 3.Advanced Data Structures

Please select your choice from the above:

1
a choose Internet of things course

Enter the name of the student:n

The following are the electives the student can choose:

- 1.Internet of things
- 2.Advanced java and J2EE
- 3.Advanced Data Structures

Please select your choice from the above:

2
n choose Advanced java and J2EE course

Enter the name of the student:g

The following are the electives the student can choose:

- 1.Internet of things
- 2.Advanced java and J2EE
- 3.Advanced Data Structures

Please select your choice from the above:

1
g choose Internet of things course

Enter the name of the student:s

The following are the electives the student can choose:

- 1.Internet of things
- 2.Advanced java and J2EE
- 3.Advanced Data Structures


```
"D:\coding files\CodeBlocks\c-programming\p.exe"
The following are the electives the student can choose:
1.Internet of things
2.Advanced java and J2EE
3.Advanced Data Structures

Please select your choice from the above:
2
s choose Advanced java and J2EE course

The total number of students opting for Internet of things are:3
The total number of students opting for Advanced java and J2EE are:3
The total number of students opting for Advanced Data Structures are:1

****Students in Internet of things course****

****Students in Advanced java and J2EE course****

****Students in Advanced Data Structures course****

The number of students are less than 5 for this course, therefore please select an option from the other two courses

Select from the below courses OTHER than the course you had selected before:
1.Internet of things
2.Advanced java and J2EE
3.Advanced Data Structures
1

Select from the below courses OTHER than the course you had selected before:
1.Internet of things
2.Advanced java and J2EE
3.Advanced Data Structures
1

Select from the below courses OTHER than the course you had selected before:
1.Internet of things
```

1.Internet of things
2.Advanced java and J2EE
3.Advanced Data Structures
1

Select from the below courses OTHER than the course you had selected before:

1.Internet of things
2.Advanced java and J2EE
3.Advanced Data Structures
1

Select from the below courses OTHER than the course you had selected before:

1.Internet of things
2.Advanced java and J2EE
3.Advanced Data Structures
1

Select from the below courses OTHER than the course you had selected before:

1.Internet of things
2.Advanced java and J2EE
3.Advanced Data Structures
1

Select from the below courses OTHER than the course you had selected before:

1.Internet of things
2.Advanced java and J2EE
3.Advanced Data Structures
1

Select from the below courses OTHER than the course you had selected before:

1.Internet of things
2.Advanced java and J2EE
3.Advanced Data Structures
2

The total number of students opting for Internet of things are:9

The total number of students opting for Advanced java and J2EE are:4

The total number of students opting for Advanced Data Structures are:1

****Students in Internet of things course****

2.Advanced java and J2EE
3.Advanced Data Structures
1

Select from the below courses OTHER than the course you had selected before:

1.Internet of things
2.Advanced java and J2EE
3.Advanced Data Structures
1

Select from the below courses OTHER than the course you had selected before:

1.Internet of things
2.Advanced java and J2EE
3.Advanced Data Structures
2

The total number of students opting for Internet of things are:9

The total number of students opting for Advanced java and J2EE are:4

The total number of students opting for Advanced Data Structures are:1

****Students in Internet of things course****

h
e
m
a
n
g

****Students in Advanced java and J2EE course****

s

****Students in Advanced Data Structures course****

The number of students are less than 5 for this course, therefore please select an option from the other two courses

Select from the below courses OTHER than the course you had selected before:

1.Internet of things
2.Advanced java and J2EE
3.Advanced Data Structures