

main.c

```
1  #include<stdio.h>
2  int main()
3  {
4      int n;
5      printf("Enter the value for n\n");
6      scanf("%d",&n);
7      printf("The desired output is\n");
8      int num = 1;
9      for(int i=0;i<n;i++) {
10         for(int j=0;j<i+1;j++) {
11             printf("%d ",num);
12             num++;
13         }
14         printf("\n");
15     }
16     return 0;
17 }
```



Enter the value for n

5

The desired output is

1

2 3

4 5 6

7 8 9 10

11 12 13 14 15

```
1  #include<stdio.h>
2  #include<math.h>
3  int main()
4  {
5      int c,s;
6      float g,h;
7      printf("Enter the CIE marks\n");
8      scanf("%d",&c);
9      printf("Enter the SEE marks\n");
10     scanf("%d",&s);
11     if(c<=50&&s<=100)
12     {
13         h=(s/2);
14         g=(c+h);
15     }
16     if(90<=g&&g<100)
17     printf("Grade S\n");
18     else if(80<=g&&g<90)
19     printf("Grade A\n");
20     else if(70<=g&&g<80)
21     printf("Grade B\n");
22     else if(60<=g&&g<70)
23     printf("Grade C\n");
24     else if(50<=g&&g<60)
25     printf("Grade D\n");
26     else if(40<=g&&g<50)
27     printf("Grade E\n");
28     else if(g<40)
29     printf("Grade F\n");
30     return 0;
31 }
```



Enter the CIE marks

42

Enter the SEE marks

78

Grade A

...Program finished with exit code 0

Press ENTER to exit console.

```
1  #include<stdio.h>
2  void findPrimes(int a,int b)
3  {
4      int j=2,flag;
5      if(a == 1 || a == 0)
6      {
7          a = 2;
8          printf("2 ");
9      }
10     for(int i = a+1;i < b; i = i+2)
11     {
12         flag = 1;
13         for (int j = 2; j <= i / 2; ++j)
14         {
15             if (i % j == 0)
16             {
17                 flag = 0;
18                 break;
19             }
20         }
21         if (flag == 1)
22             printf("%d ", i);
23     }
24 }
25 int main()
26 {
27     int num1,num2;
28     printf("Enter the first number(smaller of the two): ");
29     scanf("%d",&num1);
30     printf("Enter the second number(greater of the two): ");
31     scanf("%d",&num2);
32     findPrimes(num1,num2);
33 }
```



Enter the first number(smaller of the two): 2

Enter the second number(greater of the two): 25

3 5 7 11 13 17 19 23

...Program finished with exit code 0

Press ENTER to exit console.

main.c

```
1 #include<stdio.h>
2 #include<math.h>
3 int main()
4 {
5     float r,h,A,V;
6     int x,y=0;
7     printf("Enter the radius\n");
8     scanf("%f",&r);
9     printf("Enter the height\n");
10    scanf("%f",&h);
11    while(y!=4)
12    {
13        printf("To find Area and Volume\n Press 1 for Cylinder\n Press 2 for Cone\n Press 3 for Sphere\n Press 4 to stop\n");
14        scanf("%d",&x);
15        if(x==1)
16        {
17            A=((2*(3.14)*r*h)+(2*(3.14)*r*r));
18            printf("Area of Cylinder = %f\n",A);
19            V=(3.14)*r*r*h;
20            printf("Volume of Cylinder =%f\n",V);
21        }
22        else if(x==2)
23        {
24            A=(3.14)*r*(r+pow((h*h+r*r),0.5));
25            printf("Area of Cone = %f\n",A);
26            V=((3.14)*r*r*h)/3;
27            printf("Volume of Cone =%f\n",V);
28        }
29        else if(x==3)
```

```
28     }
29     else if(x==3)
30     {
31         A=4*(3.14)*r*r;
32         printf("Area of Sphere = %f\n",A);
33         V=(4/3)*(3.14)*r*r*r;
34         printf("Volume of Sphere =%f\n",V);
35     }
36     else if(x==4)
37         y=4;
38 }
39 return 0;
40 }
```



```
Enter the radius and height
2
3
To find Area and Volume
  Press 1 for Cylinder
  Press 2 for Cone
  Press 3 for Sphere
  Press 4 to stop
1
Area of Cylinder = 62.799999
Volume of Cylinder =37.680000
To find Area and Volume
  Press 1 for Cylinder
  Press 2 for Cone
  Press 3 for Sphere
  Press 4 to stop
2
Area of Cone = 35.202862
Volume of Cone =12.560000
To find Area and Volume
  Press 1 for Cylinder
  Press 2 for Cone
  Press 3 for Sphere
  Press 4 to stop
3
Area of Sphere = 50.240002
Volume of Sphere =25.120001
To find Area and Volume
  Press 1 for Cylinder
  Press 2 for Cone
  Press 3 for Sphere
  Press 4 to stop
4
```



```
1  #include<stdio.h>
2  #include<string.h>
3  struct addname
4  {
5      char name[10];
6  };
7  int main()
8  {
9      struct addname arr[100];
10     int a[100],k,n,x,x1 = 0,x2 = 0,x3 = 0;
11     printf("Students must fill in name and choice of electives\n");
12     printf("Choices for electives: \n1.IOT\n2.Java\n3.DS\n");
13     printf("Enter number of students: ");
14     scanf("%d",&k);
15     for(int i=0;i<k;i++)
16     {
17         printf("Enter the name of student : ");
18         scanf("%s",&arr[i].name);
19         printf("Enter your choice : ");
20         scanf("%d",&n);
21         a[i] = n;
22         if(a[i] == 1)
23             x1++;
24         else if(a[i] == 2)
25             x2++;
26         else if(a[i] == 3)
27             x3++;
28     }
29     printf("Operation 1\n");
30     printf("Enter choice of elective list: ");
31     scanf("%d",&x);
32     for (int i = 0; i < k; i++)
33     {
34         if(a[i] == x)
35             printf("%s\n",arr[i].name);
```

```
36 }
37 printf("Operation 2\n");
38 if(x1<3)
39 {
40     x1 = 0;
41     printf("All elective one students choose different elective.\n");
42     for(int i=0;i<k;i++)
43     {
44         if(a[i] == 1)
45         {
46             printf("%s Select from elective 2 or 3: ",arr[i].name);
47             scanf("%d",&n);
48             a[i] = n;
49             if(n == 3)
50                 x3++;
51             else if(n == 2)
52                 x2++;
53         }
54     }
55 }
56 if(x2<3)
57 {
58     x2 = 0;
59     printf("All elective two students are required to chose different elective.\n");
60     for(int i=0;i<k;i++)
61     {
62         if(a[i] == 2)
63         {
64             printf("%s Select from elective 1 or 3: ",arr[i].name);
65             scanf("%d",&n);
66             a[i] = n;
67             if(n == 1)
68                 x1++;
69             else if(n == 3)
70                 x3++;
```

```
69         else if(n == 3)
70             x3++;
71     }
72 }
73 }
74 if(x3<3)
75 {
76     x3 = 0;
77     printf("All elective three students are required to chose different elective.\n");
78     for(int i=0;i<k;i++)
79     {
80         if(a[i] == 3)
81         {
82             printf("%s Select from elective 2 or 1: ",arr[i].name);
83             scanf("%d",&n);
84             a[i] = n;
85             if(n == 1)
86                 x1++;
87             else if(n == 2)
88                 x2++;
89         }
90     }
91 }
92 printf("Operation 3\n");
93 printf("Number of students in IOT: %d",x1);
94 printf("Number of students in Java: %d",x2);
95 printf("Number of students in DS: %d",x3);
96 printf("Operation 4\n");
97 printf("List of students in elective 1: \n");
98 for (int i = 0; i < k; i++)
99 {
100     if(a[i] == 1)
101         printf("%s\n",arr[i].name);
102 }
103 printf("List of students in elective 2: \n");
```

```
100     if(a[i] == 1)
101         printf("%s\n",arr[i].name);
102     }
103     printf("List of students in elective 2: \n");
104     for (int i = 0; i < k; i++)
105     {
106         if(a[i] == 2)
107             printf("%s\n",arr[i].name);
108     }
109     printf("List of students in elective 3: \n");
110     for (int i = 0; i < k; i++)
111     {
112         if(a[i] == 3)
113             printf("%s\n",arr[i].name);
114     }
115 }
116
```

```
Enter your choice : 1
Enter the name of student : shyam
Enter your choice : 1
Enter the name of student : rohan
Enter your choice : 1
Enter the name of student : lakshmi
Enter your choice : 2
Enter the name of student : mohan
Enter your choice : 1
Enter the name of student : sohan
Enter your choice : 1
Enter the name of student : rahul
Enter your choice : 1
Enter the name of student : raj
Enter your choice : 2
Enter the name of student : hippo
Enter your choice : 3
Enter the name of student : lion
Enter your choice : 1
Operation 1
Enter choice of elective list: 1
ram
shyam
rohan
mohan
sohan
rahul
lion
Operation 2
All elective two students are required to chose different elective.
lakshmi Select from elective 1 or 3: 1
raj Select from elective 1 or 3: 3
```