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(6) #include <stdio.h>
#include <conio.h>
#include <stdlib.h>
void main()
{
    int ch, flag=1;
    float r, l, b, height, a, v, r, ba;
    while (flag == 1)
    {
        printf("1 for cylinder\n\n2 for cone\n\n3 for sphere\n\n4 for Exit\n");
        printf("Enter a choice\n");
        scanf("%d", &ch);
        switch (ch)
        {
            case 1: printf("Enter radius and height\n");
                    scanf("%f %f", &r, &h);
                    a = (2 * 3.142 * r * r) + (2 * 3.142 * r * h);
                    printf("Area is %f\n", a);
                    v = (3.142 * r * r * h);
                    printf("Volume is %f\n", v);
                    getch();
                    break;
            case 2: printf("Enter radius & height\n");
                    scanf("%f %f", &r, &h);
                    a = (3.142 * r) * (r + sqrt(r * r + h * h));
                    v = (3.142 * r * (r + h)) / 3;
                    printf("Area & volume are %f %f\n", a, v);
                    getch();
                    break;

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case 3: printf("Enter the radius\n");
scanf("%f", &r);
a = (4/3 * 3.142 * r * r * r);
printf("Area is %f\n", a);
v = (4/3) * (3.142 * r * r * r);
printf("Volume is %f\n", v);
getch();
break;
```

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case 4: printf("Exiting");
flag = 0;
getch();
break;
```

```
default: printf("Error");
flag = 0;
getch();
break;
```

```
}
}
}
```


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⑦

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

```
struct student {
    char name[40];
    int elective, ?;
```

```
int main() {
    int i, j, choice, n, least, temp;
    int count[3] = {0, 0, 0};
    char electives[3][40] = {"BOT", "Advanced Java",
                             "J2EE"};
    scanf("%d", &n);
```

```
    struct student student[n];
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```
    for(i=0; i<3; i++)
        printf("Enter the name of student %d", i+1, electives[i]);
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```
    for(i=0; i<n; i++) {
        printf("Enter the name of student %d", i+1);
        printf scanf("%s", student[i].name);
        printf("Enter the choice %d", i+1);
        scanf("%d", &student[i].elective);
    }
```



```

for (i=0; i<n; i++)
{
    if (student[i].elective == 1)
        count[0]++;
    else if (student[i].elective == 2)
        count[1]++;
    else if (student[i].elective == 3)
        count[2]++;
}

```

```

printf("\n operation 1: \n");
printf("Enter the choice of elective : \n");
int x;
scanf("%d", &x);

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for (i=0; i<n; i++) {
    if (student[i].elective == x)
        printf("%s \n", student[i].name);
}

```

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printf("operation 2: \n");
printf("No. of students in %s elective : %d \n",
    electives[0].count[0]);
printf("No. of students in %s elective : %d \n",
    electives[1].count[1]);
printf("No. of students in %s elective : %d \n",
    electives[2].count[2]);

```


printf("operation 3: \n");

if(count[0] < 3){

printf("Must choose another elective due to
here number of students \n", electives[0]);

printf("choose b/w advanced JAVA & J2EE \n");
scanf("%d", &choice);

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

{

if(student[i].elective == 1)

{

student[i].elective = choice;

count[0]--;

count[choice-1]++;

}

}

}

if(count[1] < 3){

printf("choose another elective b/w IOT & J2EE \n");

scanf("%d", &choice);

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

{

if(student[i].elective == 2)

{

student[i].elective = choice;

}

count[0]--;

count[choice-1]++;

}

}


```

if(count[2]<3){
    printf("Choose another elective between Advanced
           Java and J2EE\n");
    scanf("%d", &choice);
    for(i=0; i<n; i++)
    {
        if(student[i].elective == 3)
        {
            student[i].elective = choice;
        }
        count[0]--;
        count[choice-1]++;
    }
}

```

```

printf("Enter the number of students in elective
       %s %s %s respectively are %d %d %d\n",
       electives[0], electives[1], electives[2],
       count[0], count[1], count[2]);
printf("operation 4: \n");

```

```

for(i=0; i<3; i++){
    printf("\n students in %s: \n", electives[i]);
    for(j=0; j<n; j++)
    {
        if(student[j].elective == (i+1)) {
            printf("%s\n", student[j].name);
        }
    }
}

```

return 0;

}