

1)

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

```
#include<conio.h>
```

```
void main() {
```

```
    int n = 0, f = 1;
```

```
    printf("Enter the number: ");
```

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

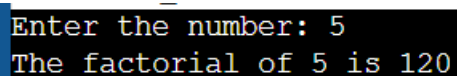
```
    for(int i = 1; i <= n; i++) {
```

```
        f = f * i;
```

```
    }
```

```
    printf("The factorial of %d is %d", n, f);
```

```
}
```



```
Enter the number: 5
The factorial of 5 is 120
```

2)

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

```
int main() {
```

```
    char str[50];
```

```
    int i = 0, length = 0, count = 0;
```

```
    printf("Enter a string: ");
```

```
    scanf("%s", str);
```

```
    while(str[i] != '\0') {
```

```
        length++;
```

```
        if(str[i]=='a' || str[i]=='e' || str[i]=='i' || str[i]=='o' || str[i]=='u') {
```

```
            count++;
```

```
        }
```

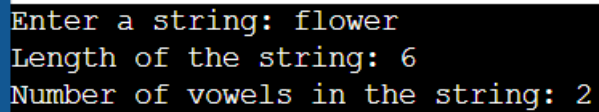
```
        i++;
```

```
    }
```

```

printf("Length of the string: %d\n", length);
printf("Number of vowels in the string: %d\n", count);
return 0;
}

```



```

Enter a string: flower
Length of the string: 6
Number of vowels in the string: 2

```

3)

```

#include <stdio.h>
#include <conio.h>

```

```

struct student

```

```

{
    char name[50];
    int roll;
    float marks;
} s[10];

```

```

int main()

```

```

{
    int i;
    printf("Enter details for 3 students:\n");
    for (i = 0; i < 3; i++)
    {
        printf("\nEnter roll number: ");
        scanf("%d", &s[i].roll);

        printf("Enter name: ");
        scanf("%s", s[i].name);
    }
}

```

```

    printf("Enter marks: ");
    scanf("%f", &s[i].marks);
}
printf("\nDisplaying details for the students:\n\n");
// Displaying information
for (i = 0; i < 3; i++)
{
    printf("Roll number: %d\n", s[i].roll);
    printf("Name: %s\n", s[i].name);
    printf("Marks: %.1f\n\n", s[i].marks);
}
return 0;
}

```

```

Enter details for 3 students:

Enter roll number: 1
Enter name: ram
Enter marks: 90

Enter roll number: 2
Enter name: ramya
Enter marks: 95

Enter roll number: 3
Enter name: ramesh
Enter marks: 100

Displaying details for the students:

Roll number: 1
Name: ram
Marks: 90.0

Roll number: 2
Name: ramya
Marks: 95.0

Roll number: 3
Name: ramesh
Marks: 100.0

```

4)

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

```
#include <conio.h>
```

```
void main()
```

```
{
```

```
    int a[10], i=0, ele=0, flag=1;
```

```
    printf("Enter array elements: ");
```

```
    for(i=0; i<10; i++)
```

```
    {
```

```
        scanf("%d", &a[i]);
```

```
    }
```

```
    printf("Enter the element to search: ");
```

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

```
    for(i=0; i<10; i++)
```

```
    {
```

```
        if(a[i] == ele)
```

```
        {
```

```
            flag=0;
```

```
            break;
```

```
        }
```

```
    }
```

```
    if(flag==0)
```

```
        printf("Element found at index %d", i);
```

```
    else
```

```
        printf("Element not found");
```

```
}
```

```
Enter array elements: 1 2 3 4 5 6 7 8 9 10
Enter the element to search: 4
Element found at index 3
```

5)

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

```
int main() {
```

```
    int rows, cols;
```

```
    printf("Enter the number of rows in the matrix: ");
```

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

```
    printf("Enter the number of columns in the matrix: ");
```

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

```
    int matrix[rows][cols];
```

```
    printf("Enter the elements of the matrix:\n");
```

```
    for (int i = 0; i < rows; i++) {
```

```
        for (int j = 0; j < cols; j++) {
```

```
            scanf("%d", &matrix[i][j]);
```

```
        }
```

```
    }
```

```
    printf("Diagonal elements of the matrix are: ");
```

```
    for (int i = 0; i < rows; i++) {
```

```
        for (int j = 0; j < cols; j++) {
```

```
            if (i == j) {
```

```
                printf("%d ", matrix[i][j]);
```

```
            }
```

```
        }
```

```
    }
```

```
return 0;  
}
```

```
Enter the number of rows in the matrix: 3  
Enter the number of columns in the matrix: 3  
Enter the elements of the matrix:  
3 4 5 6 7 8 9 6 2  
Diagonal elements of the matrix are: 3 7 2
```