

Code1:

```
#include<iostream>
using namespace std;

int main()
{
    int num;
    cout << "Enter a number: ";
    cin >> num;

    int count[10] = {0}; // Array to store count of each digit (0-9)

    if (num == 0) {
        count[0] = 1; // Special case if the number is 0
    } else {
        if (num < 0) num = -num; // Handle negative numbers
        while (num > 0) {
            int digit = num % 10;
            count[digit]++;
            num /= 10;
        }
    }

    for (int i = 0; i < 10; i++) {
        if (count[i] > 0)
            cout << "Digit " << i << " occurs " << count[i] << " times" << endl;
    }

    return 0;
}
```

Output:

```
Enter a number: 112496690
Digit 0 occurs 1 times
Digit 1 occurs 2 times
Digit 2 occurs 1 times
Digit 4 occurs 1 times
Digit 6 occurs 2 times
Digit 9 occurs 2 times
```

Code2:

```
#include<iostream>
using namespace std;
int main(){
    int num, sum=0;
    cout<<"Enter a number: ";
    cin>>num;
    for(int i=1; i<=num/2; i++){
        if(num%i==0){
            sum+=i;
        }
    }
    if(sum==num){
        cout<<num<<" is a perfect number."<<endl;
    } else {
        cout<<num<<" is not a perfect number."<<endl;
    }
    return 0;
}
```

Output:

```
Enter a number: 28
28 is a perfect number.
```

```
Enter a number: 29
29 is not a perfect number.
```

Code3:

```
#include<iostream>
using namespace std;
int main(){
    int arr[10];
    cout<<"Enter 10 elements in array: ";
    for(int i=0;i<10;i++){
        cin>>arr[i];
    }
    cout<<"Duplicate elements in the array are: ";
    for(int i=0;i<10;i++){
        for(int j=i+1;j<10;j++){
            if(arr[i]==arr[j]){
                cout<<arr[i]<<" ";
                break;
            }
        }
    }
}
```

Output:

```
Enter 10 elements in array: 1
2
2
4
4
10
7
6
6
8
Duplicate elements in the array are: 2 4 6
```

Code4:

```
#include<iostream>
using namespace std;
int main()
{
    int num;
    cout<<"Enter a number:";
    cin>>num;
    cout<<"prime factors of "<<num<<" are: ";
    for(int i=2;i<=num;i++)
    {
        while(num%i==0)
        {
            cout<<i<<" ";
            num=num/i;
        }
    }
}
```

Output:

```
Enter a number:10
prime factors of 10 are: 2 5
```