Lesson 81 Practice 22 (statistics)

In this lesson, we want to create a program where the user can enter n, n is the number of values he is going to tap, and asks the user which number he wants :

The user answers the number he wants and then the program prints some data for this number x

How many digits are divisible by x

How many numbers are greater than x

How many numbers are less than x

How many numbers are x

In this case to do some stats we need the array to stock all the values.

```
#include <stdio.h>
int main() {
int i, n, z[100], x, gx = 0, sx = 0, ex = 0, dx = 0;
//stock the numbers in z
//we do the stats on x
//gx means greater than x
//sx means smaller than x
//ex means equal x
//dx means divide x
```

```
printf("Enter number of numbers: ");
scanf("%d", &n);
for (i = 0; i < n; i++) {
printf("Enter # %d: ", i + 1);
//print order of the numbers
scanf("%d", &z[i]);
}
printf("Enter x: ");
scanf("%d", &x);
//the user enters the number that he is going to work on

/*
if we put else if one thing to going to be done
for (i = 0; i < n; i++) {
if (z[i] > x)
gx++;
//count the numbers greater than x

else if (z[i] < x)
sx++;
//count the numbers smaller than x

else if (z[i] % x == 0)
```

```
dx;
//if the remainder is 0
else if (z[i] == x)
ex++;
//count the numbers equal x
*/
for (i = 0; i < n; i++) {
if (z[i] > x)
gx++;
//if this condition is true or not the next lines are being executed
if (z[i] < x)
sx++;
if (z[i] % x == 0)
dx++;
if (z[i] == x)
ex++;
}
printf(
"%d Greater than %d\n"
"%d Smaller than %d\n"
"%d Divisible by %d\n"
"%d Equal to %d\n",gx,x,sx,x,dx,x,ex,x);
}
```

input:

Enter number of numbers: 10

Enter # 1: 9

Enter # 2: 6

Enter # 3: 3

Enter # 4: 1

Enter # 5: 2

Enter # 6: 1

Enter # 7: 2

Enter # 8: 1

Enter # 9: 2

Enter # 10: 1

Enter x: 3

output:

2 Greater than 3

7 Smaller than 3

3 Divisible by 3

1 Equal to 3

Try the code : Click here!

We can shorten the code using the ternary operator.

We can also declare the array with the size that the user defines, but that may cause an error in some compilers.

```
#include <stdio.h>
int main() {
int i, n, x, gx = 0, sx = 0, ex = 0, dx = 0;
//stock the numbers in z
//we do the stats on x
//gx means greater than x
//sx means smaller than x
//ex means equal x
//dx means divide x
printf("Enter number of numbers: ");
scanf("%d", &n);
int z[n];
//in some compilers that may not work
//we save the memory if we do that
for (i = 0; i < n; i++) {
printf("Enter # %d: ", i + 1);
//print order of the numbers
scanf("%d", &z[i]);
}
printf("Enter x: ");
scanf("%d", &x);
//the user enters the number that he is going to work on
```

```
/*
if we put else if one thing to going to be done
for (i = 0; i < n; i++) {
if (z[i] > x)
gx++;
//count the numbers greater than x

else if (z[i] < x)
sx++;
//count the numbers smaller than x

else if (z[i] % x == 0)
dx;
//if the remainder is 0
else if (z[i] == x)
ex++;
//count the numbers equal x
*/
for (i = 0; i < n; i++) {
if (z[i] > x)
gx++;
//if this condition is true or not the next lines are being executed
if (z[i] < x)
```

```
sx++;
if (z[i] % x == 0)
dx++;
if (z[i] == x)
ex++;
}
printf(
"%d Greater than %d\n"
"%d Smaller than %d\n"
"%d Divisible by %d\n"
"%d Equal to %d\n",gx,x,sx,x,dx,x,ex,x);
}
```

input:

```
Enter number of numbers: 10
Enter # 1: 9
Enter # 2: 6
Enter # 3: 3
Enter # 4: 1
Enter # 5: 2
Enter # 6: 1
Enter # 7: 2
Enter # 8: 1
Enter # 9: 2
```

Enter # 10: 1

Enter x: 3

output:

2 Greater than 3

7 Smaller than 3

3 Divisible by 3

1 Equal to 3

Try the code : Click here!