[Chapter 10 Exercise#4 - Day#1](https://hwdsb.elearningontario.ca/d2l/le/15933542/discussions/threads/6567850/View" \o "Chapter 10 Exercise#4 - Day#1)

Since in this program we do not know how many numbers are to be entered the array type needs to be changed away from a fixed size over to an array type which is dynamic in size.  An ArrayList allows us to dynamically change the size of the array as needed.  First declare the array such as below, defining the type of data to be stored.

ArrayList<Integer> numbers = new ArrayList();     //note an import is needed to use an ArrayList

Integer refers to the type of data to be stored in the array.

Next, have the numbers entered, adding into the array if they are within the range 1-50.  Using a loop.

while(value!=-1){      //the sentinal is a value entered to stop the loop  
System.out.println("Enter a number -1 to exit");  
value = input.nextInt();  
if(value>=1 && value <=50){  
numbers.add(value);         //this line places the number into the array.  
}  
}

The first section of this program is to determine the average.  To determine the average, you will have to accumulate the numbers (add them up) and count the numbers.  The average is the sum of the numbers divided by how many numbers there are.  This part of the program I will let you try on your own.