

Credit Name: CSE 2120 Data Structures

Assignment: EvensAndOdds

How has your program changed from planning to coding to now? Please Explain

```
//Set up random numbers
Random rand = new Random();

//List for random 25 numbers
int[] randList = new int[25];

//Assign a random integer b/w 0-99 to 25 elements in the list
for(int i=0; i < randList.length;i++)
{
    randList[i]= rand.nextInt(100);
}
```

The first thing I did was make an empty list with allocated space for 25 integers. Then I assigned a random number between 0 and 99 using a for loop and the Random class.

```
//Define 2 ArrayLists to separate the random lists into Odd and Even
ArrayList<Integer> evenList = new ArrayList<Integer>();
ArrayList<Integer> oddList = new ArrayList<Integer>();
```

Then I made 2 ArrayLists, one for evens and one for odds. I used an ArrayList because I didn't need to declare space when making a list this way as the numbers of odds and evens can vary from case to case as numbers are randomly generated.

```
//For statement to find remainder when divided by 2 and group elements into Odd or Even
for(int element = 0; element< randList.length;element++)
{
    int remainder = randList[element] % 2;

    if(remainder == 0)
    {
        evenList.add(randList[element]);
    }
    else
    {
        oddList.add(randList[element]);
    }
}
```

I made a for loop to calculate the remainder for each element in my list with random, unordered numbers after it was divided by 2.

If the remainder was zero, the number would be even as all even numbers are divisible by 2. Then i added them to my evenList using the .add() method. The same process was done for the odd list in my else condition as if a number is not even, it's odd.

```
//Print the odd and even lists on one line
System.out.println("ODD:");
System.out.println(oddList);

System.out.println("EVEN");
System.out.println(evenList);
```

Lastly I printed my odd list and even list on one line separate from each other.