

PROGRAM:

```
import java.util.ArrayList;

public class Multiplier {
    public ArrayList<Integer> multiplieroffourandsix(int[] numbers){
        ArrayList<Integer> new_numbers = new ArrayList<>();
        for(int i=0;i<numbers.length;i++){
            if(numbers[i]%4==0||numbers[i]%6==0){
                new_numbers.add(numbers[i]);
            }
        }
        return new_numbers;
    }

    public static void main(String[] args){

        Multiplier a = new Multiplier();
        int[] numbers = {1,3,4,5,6,7,12,14,16,25,44,66,35,64,82};

        ArrayList<Integer> numbersList = new ArrayList<>();
        numbersList = a.multiplieroffourandsix(numbers);
        System.out.println(numbersList);

    }
}
```

TEST CASES:

In this program I have created the function `multiplieroffourandsix(int[] numbers)` which returns the number of input arrays which are the multiples of 4 or 6 in the Array list.

Scenario: Test the integer of inputs that are multiples of 4

Given Integer inputs are [4,8,12,16,20,24]

Then It get the values from the for loop and store it in the Array list

And It shows the output that are same as the input

Scenario: Test the integer of inputs that are multiples of 6

Given Integer inputs are [6,12,18,24,30,36,42,48]

Then It get the values from the for loop and store it in the Array list

And It shows the output that are same as the input

Scenario: Test the integer of inputs that are multiples of 4 and 6

Given Integer inputs are [4,6,12,18,16,24,42]

Then It get the values from the for loop and store it in the Array list

And It shows the output that are same as the input

Scenario: Test the integer of inputs that are not multiples of 4 and 6

Given Integer inputs are [5,13,25,31,46]

Then It get the values from the for loop and store it in the Array list

And It shows the output as []

Scenario: Test the integer of inputs with negative numbers

Given Integer inputs are [4,6,12,18,24,-30,-42]

When It get the values from the for loop and store it in the Array list

Then It accepts the negative numbers since it is multiples of 4 and 6

And It shows the output same as the input

Scenario: Test the integer of input as empty array

Given Integer inputs are []

When It directly get the values from the for loop and store it in the Array list

Then It shows the output as empty array[]

Scenario: Test the integer of inputs with duplicates

Given Integer inputs are [4,6,12,12,30,42,6,12]

When It directly get the values from the for loop and store it in the Array list

Then It accepts the duplicates since it also multiples of 4 and 6

And It shows the output same as the input

Scenario: Test the integer of inputs with decimal numbers

Given Integer inputs are [4,6,12,30.6, 42]

When It directly get the values from the for loop and store it in the Array list

Then It does not accepts any type of data types than integers

And It throws error

Scenario: Test the integer of inputs with characters

Given Integer inputs are [4,6,12,x, 42]

When It directly get the values from the for loop and store it in the Array list

Then It does not accept any type of data types than integers

And It throws error

Scenario: Test the integer of inputs with white space

Given Integer inputs are [4,6,12,42,36,]

When It directly get the values from the for loop and store it in the Array list

Then It neglects the space and accepts the input.

And It shows the output as [4,6,12,42,36]

Scenario: Test the integer of inputs with the combination of all numbers

Given Integer inputs are [2,3,4,6,12,24,28,30,35,36]

When It directly get the values from the for loop and store it in the Array list

Then It takes the array of numbers as input but in the output it shows only numbers which are multiples of 4 or 6

And It shows the output as [4,6,12,24,28,30,36]