

**Gebze Technical University
Computer Engineering**

CSE 222 - 2018 Spring

HOMEWORK 4 Part5 REPORT

**Beyza AYDOĞMUŞ
151044034**

Course Assistant: Ayşe ŞERBETÇİ TURAN

1 INTRODUCTION

1.1 Problem Definition

In this homework what we wanted to do is wring an iterator class that traverse the given 2DArray spirally from the left top with the clockwise rotate recursively in java.

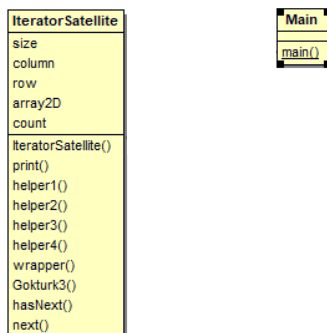
1.2 System Requirements

I write this program for all devices that is run with JVM.

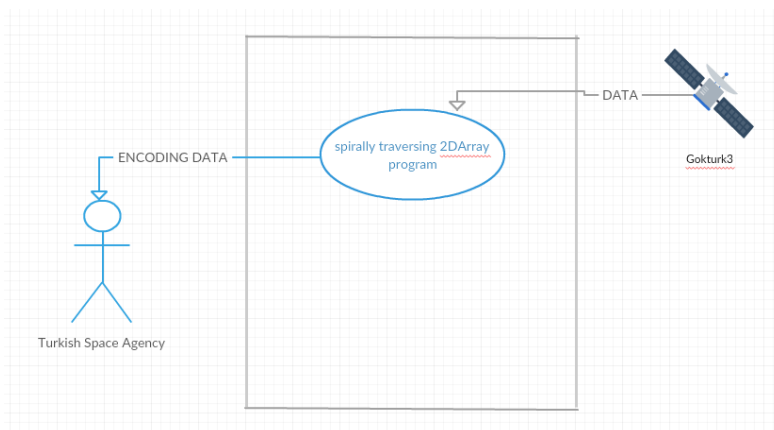
If desired the program can compatible with the cell phone maybe for the Turkish space Agency employees to encoding some data that came from the stellites.

2 METHOD

2.1 Class Diagrams



2.2 Use Case Diagrams



2.3 Problem Solution Approach

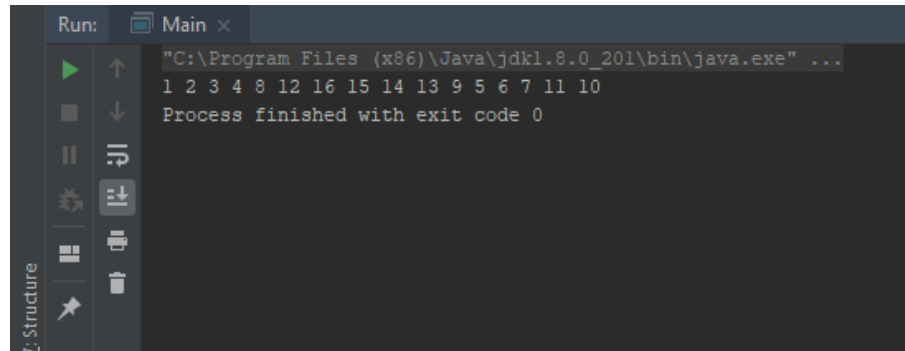
The iterator that we write is iterate an array in the order spiral clockwise, For this i think like that, i should transfer the 2D array elements to a normal array with spirally traversing. And that i write iterator method that iterate this array.

3 RESULT

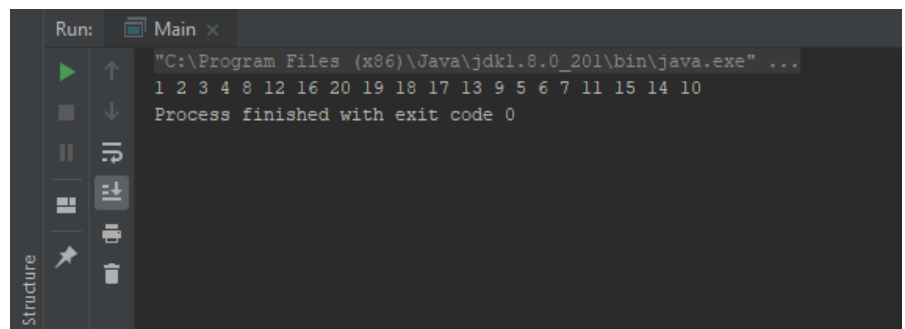
3.1 Test Cases

I tested it with the given 2Darray with the homework pdf and also i add another 2D array to shoe that its not necessarily square and it can solve unquare 2Darrays.

3.2 Running Results

$$\begin{pmatrix} 1 & 2 & 3 & 4 \\ 5 & 6 & 7 & 8 \\ 9 & 10 & 11 & 12 \\ 13 & 14 & 15 & 16 \end{pmatrix}$$


```
Run: Main x
"C:\Program Files (x86)\Java\jdk1.8.0_201\bin\java.exe" ...
1 2 3 4 8 12 16 15 14 13 9 5 6 7 11 10
Process finished with exit code 0
```

$$\begin{pmatrix} 1 & 2 & 3 & 4 \\ 5 & 6 & 7 & 8 \\ 9 & 10 & 11 & 12 \\ 13 & 14 & 15 & 16 \\ 17 & 18 & 19 & 20 \end{pmatrix}$$


```
Run: Main x
"C:\Program Files (x86)\Java\jdk1.8.0_201\bin\java.exe" ...
1 2 3 4 8 12 16 20 19 18 17 13 9 5 6 7 11 15 14 10
Process finished with exit code 0
```