Assignment 1 Istanbul Map

In the main method the program first takes the user inputs then opens the text file and stores the information within line by line. In the while loop while there is a next line it splits the line from its spaces and collects the string items to an array called "lineSplit". It also splits every second item of every line from where they have commas "," and adds them to an array called "whichLine". The aim here is to check whether the second item of every line contains the rgb values or coordinates of the first station. If the length of "whichLine" equals to three then it means that corresponding line has the line name and rgb values information. So these values are added to the "allColors" arraylist. If the length is one, then it means this line is one of the last seven lines which has the information of breakpoints. So the first item of that line which corresponds to the breakpoint name is added to an arraylist called "breakpoints". If the length is two, it means that this line represents a subway line with all the station names and coordinates of these. Each station name on a line is kept in a temporary 1d array and each coordinate value is kept similarly in a 2d array. These temporary arrays are redeclared within each loop and added to the main "stations" and "allCordinates" arraylists. After that I copied the "stations" to a second "arraylist2" by deleting "*" character at the beginning of some stations' names. If I did not, it would be harder to search for the input stations and to decide which station name is to be printed on the map. Lastly in the main method the correctness of the user input is checked and the methods "pathFinder" and "showPath" are called according to it. In addition the indexes of the beginning station are acquired with "findIndexByName" which iterates through a 2d arraylist and returns the indexes of a specified string data if it exists within the arraylist.
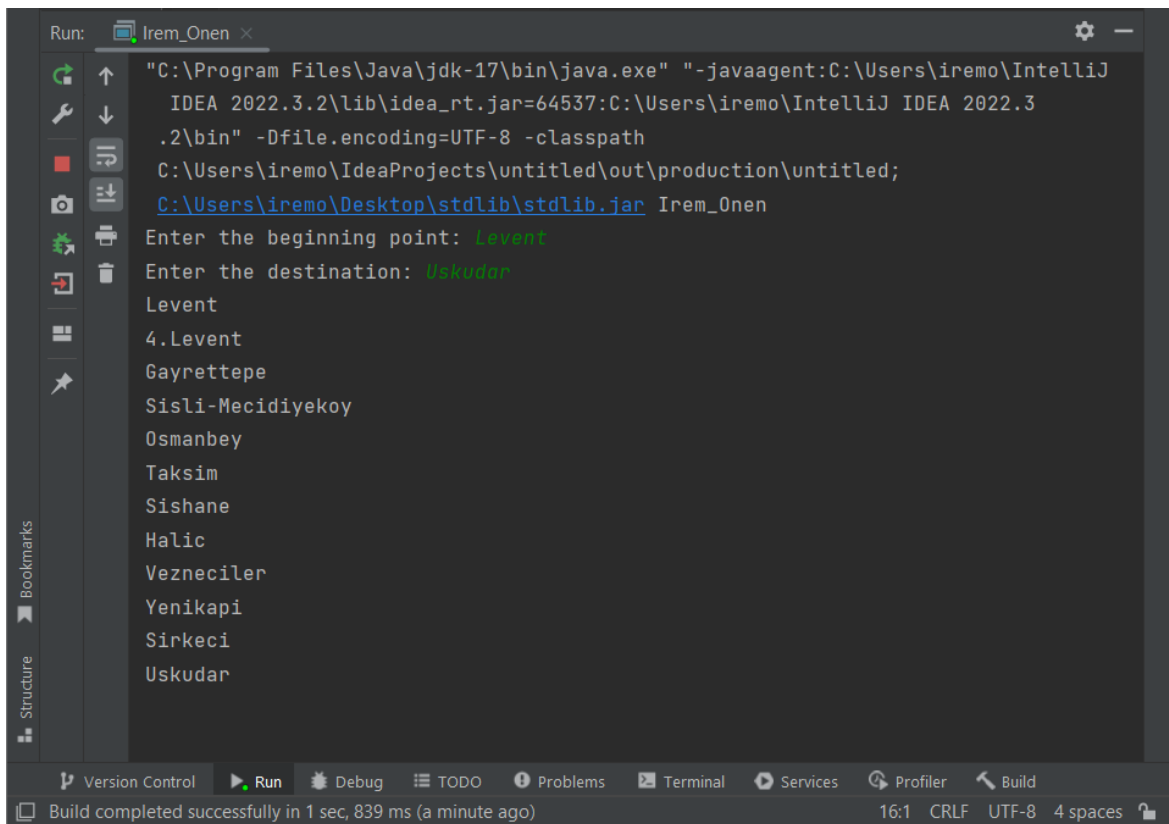
Method "pathFinder"

"pathFinder" visits the possible stations on the path by using the first station's index values "r2" and "c2", meanwhile tracking already visited stations by collecting their index values. It also ensures that the indexes are within boundaries. Each station must have at least a pair of coordinate values. If it is a breakpoint then it must have more than one. "findAllIndexes" method determines how many pairs of indexes a station has. In the for loop for each pair of indexes "pathFinder" is recalled by incrementing or decrementing "newC" value by one in order to navigate through the arraylist and what it returns is assigned to "path". Since until finding the destination the method returns null, the current station is added to path in case when "path" is not null. Finally it returns "path".

Method "showPath"

In the beginning it assigns the first element of "path" which is the beginning station to a string named "currPos". While loop continues to work unless "currPos" is the destination. First, the for loop iterates through path updating the x and y values that correspond to coordinates of a specific station which are found in "allCoordinates". The first for loop within the main for loop finds the rgb values from "allColors" and draws the lines. Second one prints out the white points on lines for each station and also prints out their names. After these two loops under the main for loop the filled circle is drawn at the current position. The last for loop marks the stations' points orange which have been already visited. Outside the last loop the canvas is cleared and the "currPos" is updated so that the big circle can change position with each iteration.
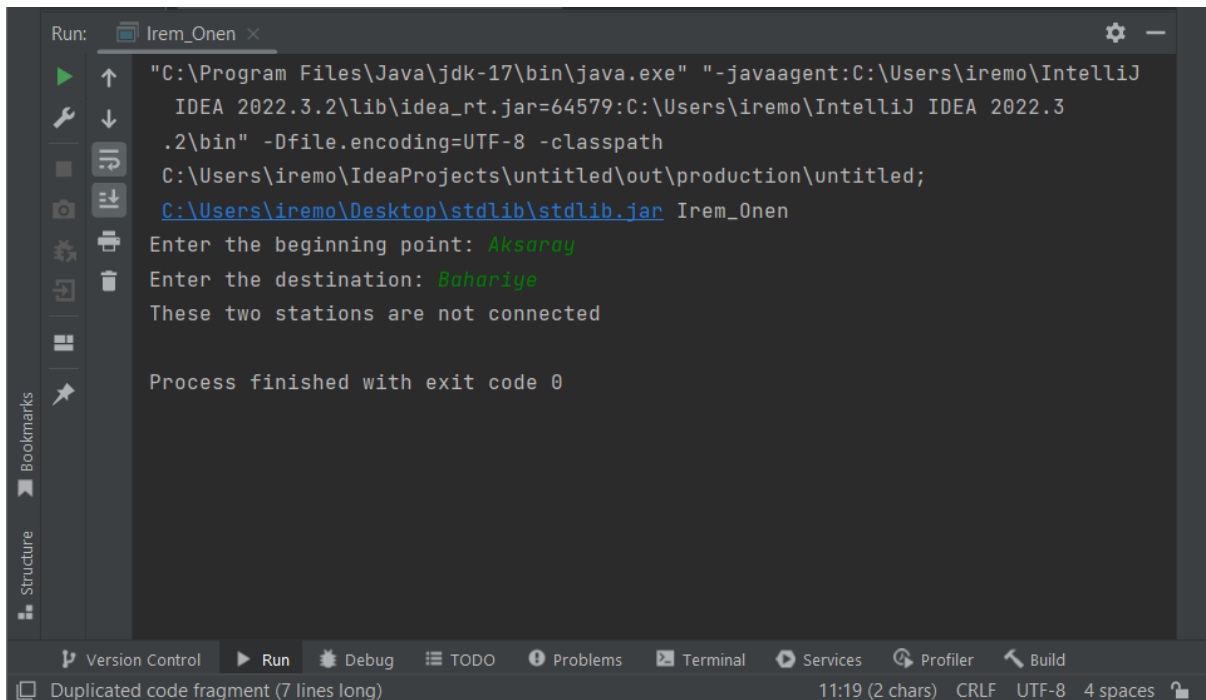
Example 1

Example 2

```
Run:      Irem_Onen ×                                                        ⚙ ─
  ▶   ↑    "C:\Program Files\Java\jdk-17\bin\java.exe" "-javaagent:C:\Users\iremo\IntelliJ
  🔧  ↓      IDEA 2022.3.2\lib\idea_rt.jar=64579:C:\Users\iremo\IntelliJ IDEA 2022.3
  ■   ⇥     .2\bin" -Dfile.encoding=UTF-8 -classpath
  📷  ⬇     C:\Users\iremo\IdeaProjects\untitled\out\production\untitled;
            C:\Users\iremo\Desktop\stdlib\stdlib.jar Irem_Onen
  🖨       Enter the beginning point: Aksaray
  🗑       Enter the destination: Bahariye
            These two stations are not connected

            Process finished with exit code 0
```
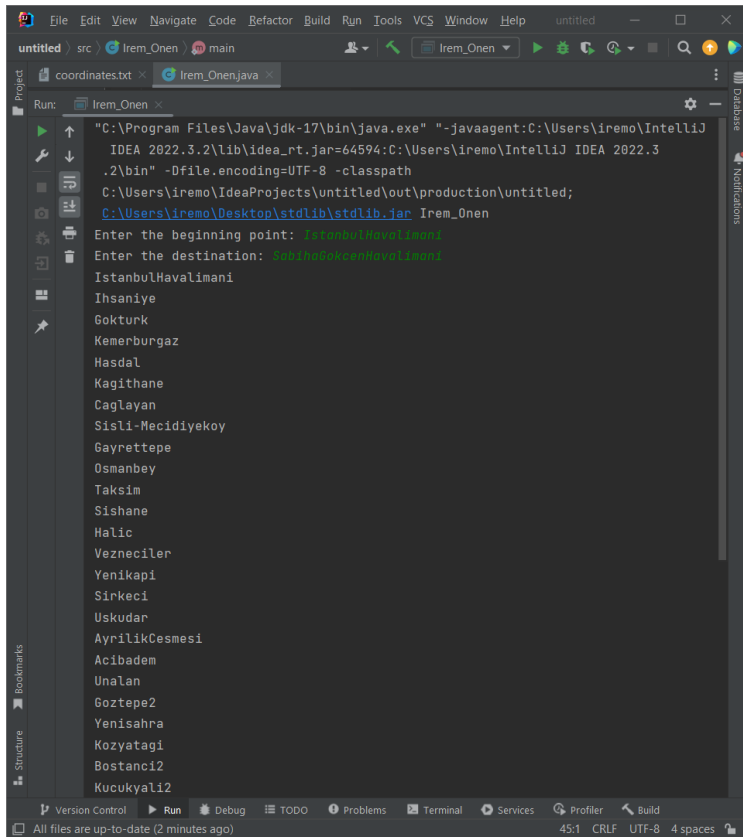
⚑ Version Control   ▶ Run   🐞 Debug   ≣ TODO   ❶ Problems   ▣ Terminal   ⊙ Services   ⟳ Profiler   ⚒ Build
▢ Duplicated code fragment (7 lines long)   11:19 (2 chars) CRLF UTF-8 4 spaces 🔒

Example 3

```
Run:      Irem_Onen ×                                                        ⚙ ─
  ▶   ↑    "C:\Program Files\Java\jdk-17\bin\java.exe" "-javaagent:C:\Users\iremo\IntelliJ
  🔧  ↓      IDEA 2022.3.2\lib\idea_rt.jar=64591:C:\Users\iremo\IntelliJ IDEA 2022.3
            .2\bin" -Dfile.encoding=UTF-8 -classpath
  ■   ⇥     C:\Users\iremo\IdeaProjects\untitled\out\production\untitled;
  📷  ⬇     C:\Users\iremo\Desktop\stdlib\stdlib.jar Irem_Onen
  🖨       Enter the beginning point: Bogazici
  🗑       Enter the destination: Kadikoyy
            The station names provided are not present in this map.

            Process finished with exit code 0
```
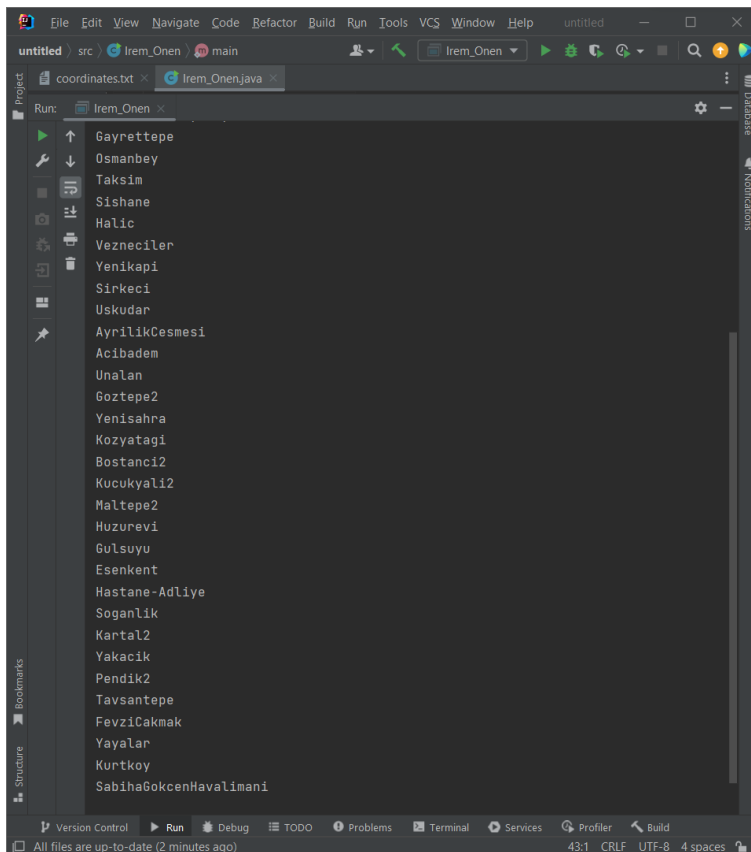
⚑ Version Control   ▶ Run   🐞 Debug   ≣ TODO   ❶ Problems   ▣ Terminal   ⊙ Services   ⟳ Profiler   ⚒ Build
▢ Duplicated code fragment (7 lines long)   7:1 CRLF UTF-8 4 spaces 🔒

Example 4

File

IstanbulHavalimani

Ihsaniye

Haciosman

AtaturkOtoSanayi

Gokturk

Kemerburgaz

SanayiMahallesi

4.Levent

Levent-Hisarustu

Bahcesehir

Olimpiyat

IkitelliSanayi

Tekstilkent-Giyimkent   Yesilpinar   Alibeykoy Kagithane

Gayrettepe

Sisli-Mecidiyekoy

Bahariye GoztepeMah

Mahmutbey

Yildiz

Kisikli   Carsi   Ihlamurkuyu   Cekmekoy

Kirazli

Menderes

Otogar

Sagmalcilar

Taksim

Uskudar

SabihaGokcenHavalimani   Gebze

Haikali

Mecit

Zeytinburnu2

Sirkeci

Ayrilik Cesm Unalan

Fatih

Bahcelievler

Halic

Kadikoy

Bostanci2   Esenkent   Pendik2

Tuzla

Yenibosna

Aksaray

Sogutlucesme

Guzelyali

Florya   AtaturkHavalimani   Bakirkoy   Zeytinburnu   Yenikapi

Feneryolu

Erenkoy   Kucukyali   Maltepe   Kartal   Guzelyali

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