CSYE 6200 Assignment 1 Report
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Assignment:

Assignment 1: Due September 24th, 6:00 pm

- **Write a java program that helps with school bus planning**
  - Read student data (region X-Y, grade level) from an array list
- **Use a loop to accept keyboard command input**
- **Use a switch statement to provide four input options (commands):**
  1) Calculate how many students are in each grade level and list the results
  2) Print a region map (2D) that shows where a bus would need to stop for student pick-up/drop-off.
     Allow custom map displays by grade level (i.e. Elementary (1-6), Middle (7-8), or All)
  3) Print a history of the last three commands
  4) Quit – Allow the user to exit from the program

Student Data:

```
// Student data
String accounts[][] = {  {"Rachel",   "500.1",   "451.45",   "2"},
                         {"Ross",     "293.23",  "120.45",   "7"},
                         {"Monica",   "423.3",   "400.3",    "4"},
                         {"Chandler", "628.4",   "282.67",   "3"},
                         {"Phoebe",   "345.25",  "84.4",     "1"},
                         {"Joey",     "123.4",   "345.3",    "8"},
                         {"Robin",    "523.6",   "500.45",   "3"},
                         {"Lily",     "264.43",  "323.45",   "6"},
                         {"Marshall", "523.3",   "290.3",    "7"},
                         {"Ted",      "328.4",   "584.6",    "3"},
                         {"Barney",   "545.35",  "233.4",    "5"},
                         {"Spongebob","673.4",   "666.3",    "9"}
                      };
```

Command c:

(Calculate how many students are in each grade level and list the results)
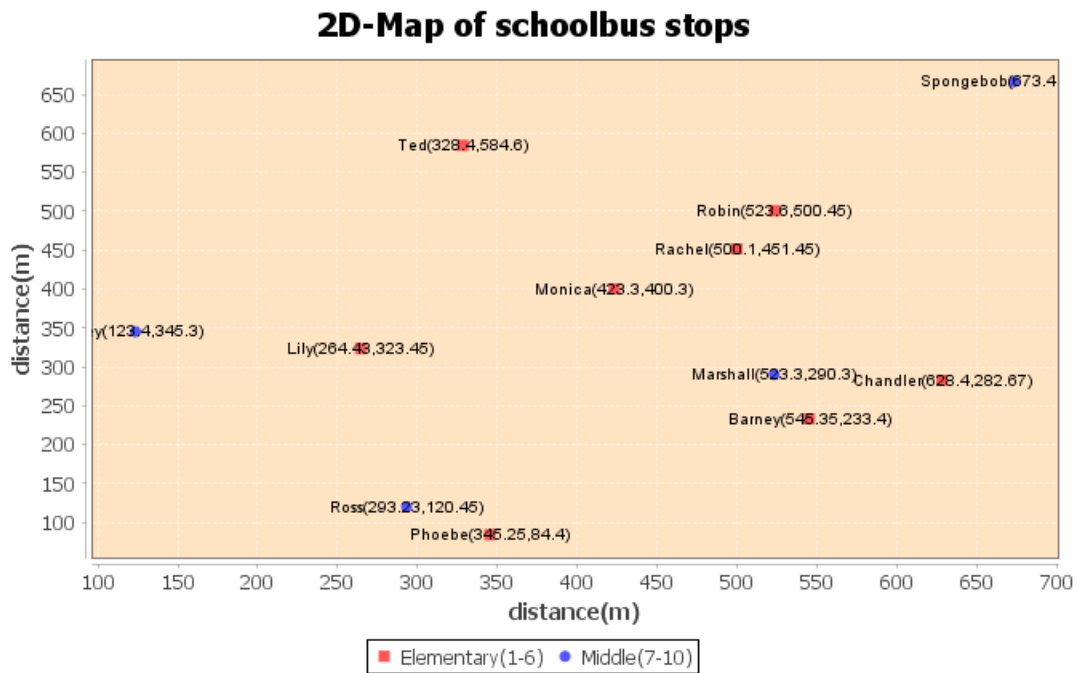
```
*****Enter choice 'c' to get the number of students in each grade level, then press <enter>*****
*****Enter choice 'p' to get the 2D-map of the stops, then press <enter>*****
*****Enter choice 'h' to get the last three commands(when commands are more than three), then press <enter>*****
*****Enter choice 'q' to quit, then press <enter>*****
c
*****Calculate Student Info****
Number of students in Elementery Grade Level(1-6): 8
Number of students in Middle Grade Level(7-9): 4
```
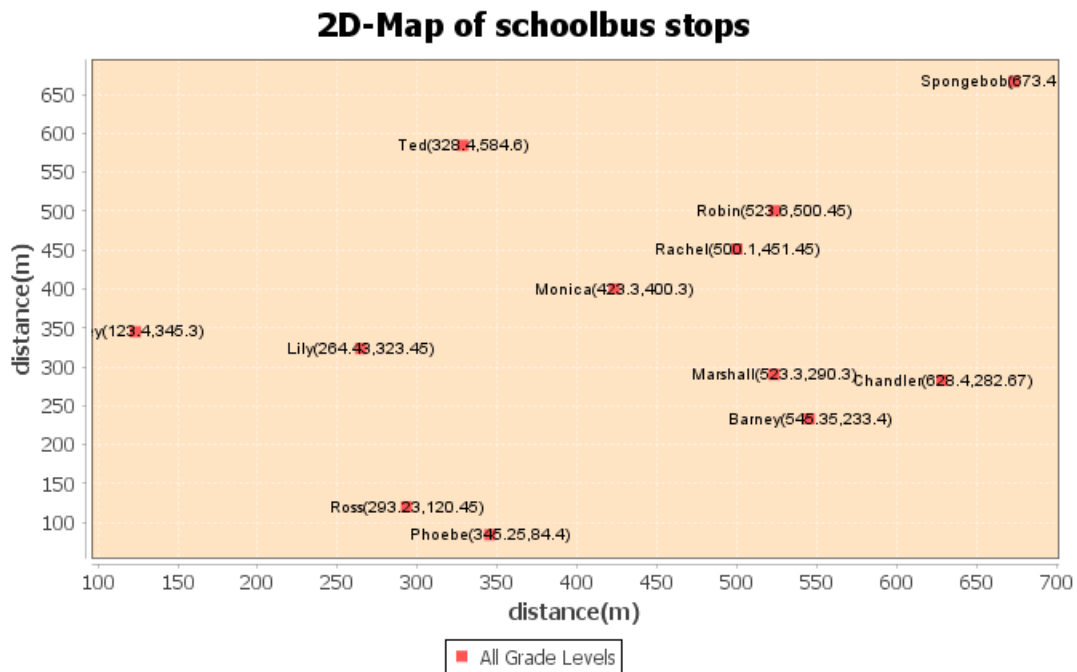
Command p:
(Print a region map (2D) that shows where a bus would need to stop for student pick-up/drop-off. Allow custom map displays by grade level (i.e. Elementary (1-6), Middle (7-8), or All))

```
*****Enter choice 'c' to get the number of students in each grade level, then press <enter>*****
*****Enter choice 'p' to get the 2D-map of the stops, then press <enter>*****
*****Enter choice 'h' to get the last three commands(when commands are more than three), then press <enter>*****
*****Enter choice 'q' to quit, then press <enter>*****
p
****Print 2D Region Map****
```
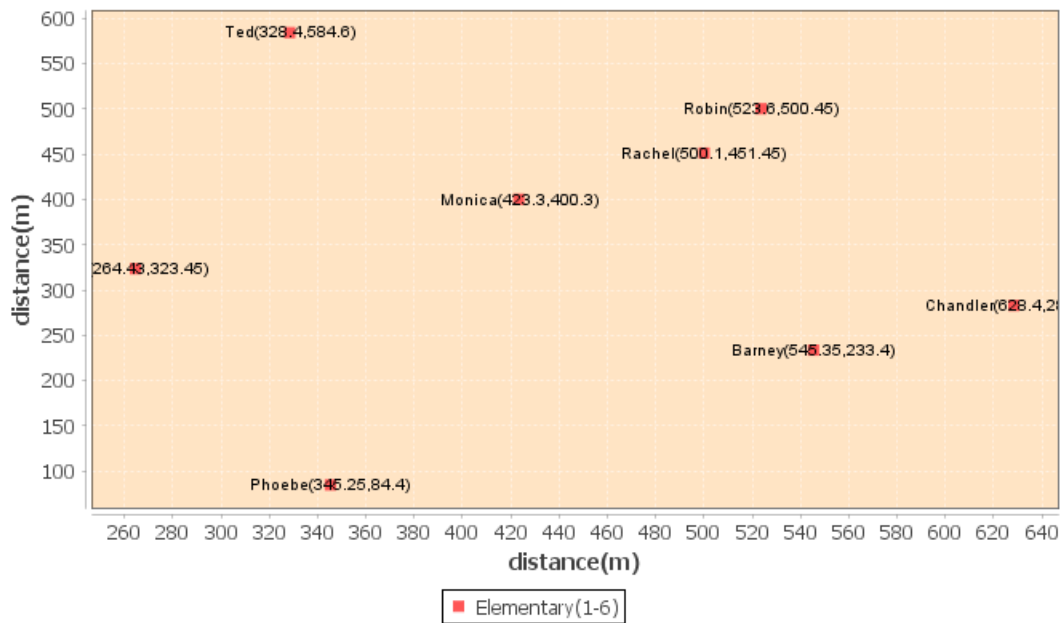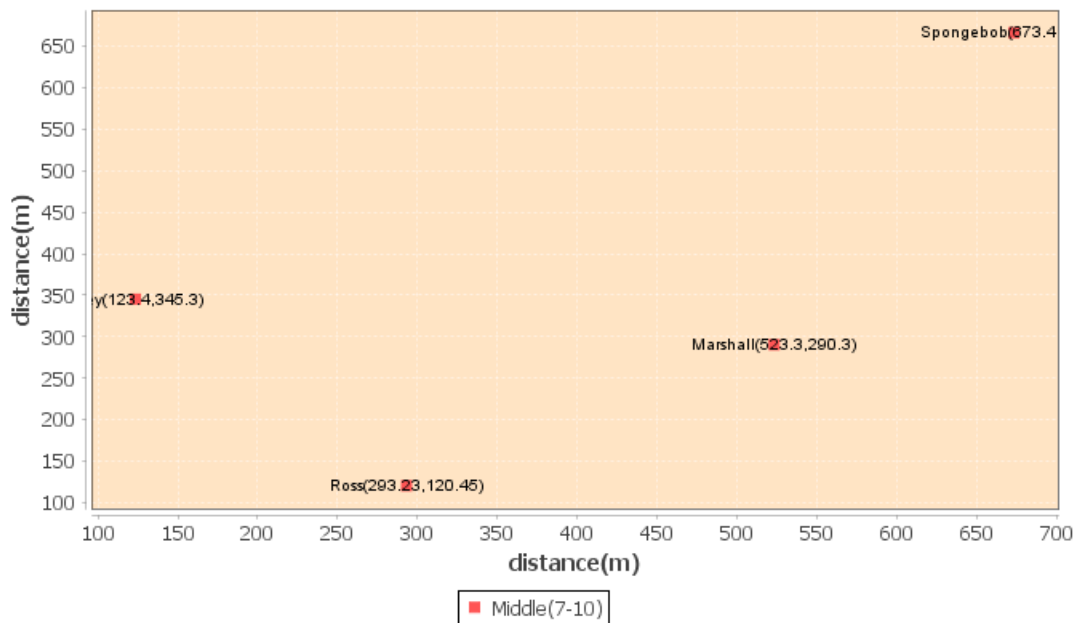
Plot (First Version):

2D-Map of schoolbus stops

Plots (Optimized Version):

2D-Map of schoolbus stops

2D-Map of schoolbus stops

Ted(328.4,584.6)
Robin(523.6,500.45)
Rachel(500.1,451.45)
Monica(423.3,400.3)
264.43,323.45)
Chandler(628.4,2...
Barney(545.35,233.4)
Phoebe(345.25,84.4)

distance(m)

distance(m)

■ Elementary(1-6)

2D-Map of schoolbus stops

Spongebob(673.4...
y(123.4,345.3)
Marshall(523.3,290.3)
Ross(293.23,120.45)

distance(m)

distance(m)

■ Middle(7-10)

Command h:

(Print history of last three commands-works when input commands are more than three)

```
*****Enter choice 'c' to get the number of students in each grade level, then press <enter>*****
*****Enter choice 'p' to get the 2D-map of the stops, then press <enter>*****
*****Enter choice 'h' to get the last three commands(when commands are more than three), then press <enter>*****
*****Enter choice 'q' to quit, then press <enter>*****
c
*****Calculate Student Info****
Number of students in Elementery Grade Level(1-6): 8
Number of students in Middle Grade Level(7-9): 4
*****Enter choice 'c' to get the number of students in each grade level, then press <enter>*****
*****Enter choice 'p' to get the 2D-map of the stops, then press <enter>*****
*****Enter choice 'h' to get the last three commands(when commands are more than three), then press <enter>*****
*****Enter choice 'q' to quit, then press <enter>*****
p
****Print 2D Region Map****
*****Enter choice 'c' to get the number of students in each grade level, then press <enter>*****
*****Enter choice 'p' to get the 2D-map of the stops, then press <enter>*****
*****Enter choice 'h' to get the last three commands(when commands are more than three), then press <enter>*****
*****Enter choice 'q' to quit, then press <enter>*****
c
*****Calculate Student Info****
Number of students in Elementery Grade Level(1-6): 8
Number of students in Middle Grade Level(7-9): 4
*****Enter choice 'c' to get the number of students in each grade level, then press <enter>*****
*****Enter choice 'p' to get the 2D-map of the stops, then press <enter>*****
*****Enter choice 'h' to get the last three commands(when commands are more than three), then press <enter>*****
*****Enter choice 'q' to quit, then press <enter>*****
h
****Print Command History*****
Last Three Command History:c,p,c
```

Command q (Quit):

```
*****Enter choice 'c' to get the number of students in each grade level, then press <enter>*****
*****Enter choice 'p' to get the 2D-map of the stops, then press <enter>*****
*****Enter choice 'h' to get the last three commands(when commands are more than three), then press <enter>*****
*****Enter choice 'q' to quit, then press <enter>*****
q
Quiting...
```