

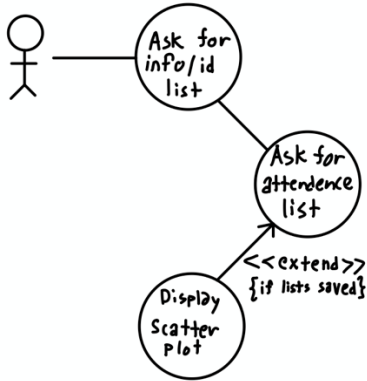
CSE 360 Final Project

By: Austin Wright

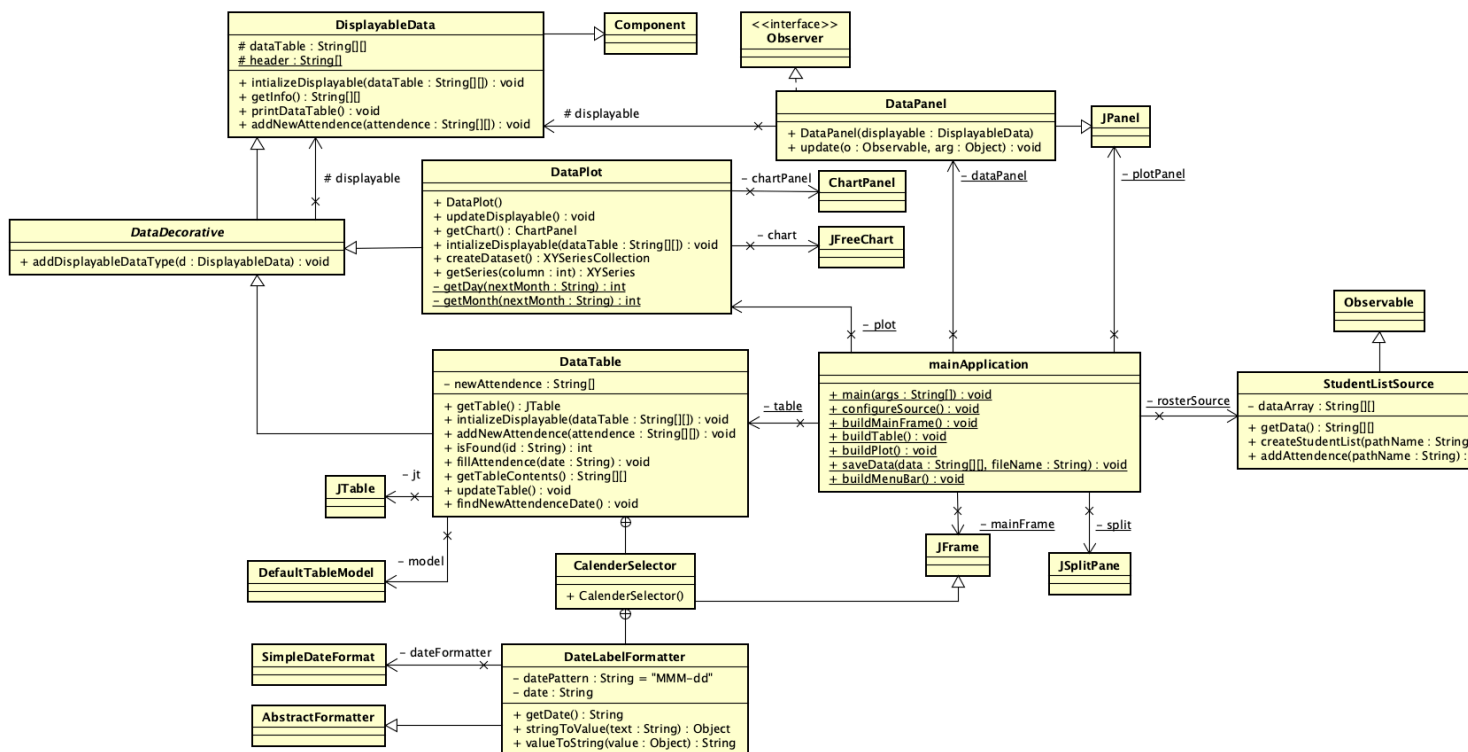
Attendance Logger using Java Swing

Requirements:

- Load and store a table of information from a CSV file
- Write a table of stored information to a CSV file
- Display a table of student information
- Display a scatter plot of attendance data from the student table



Class Diagram:



Testing

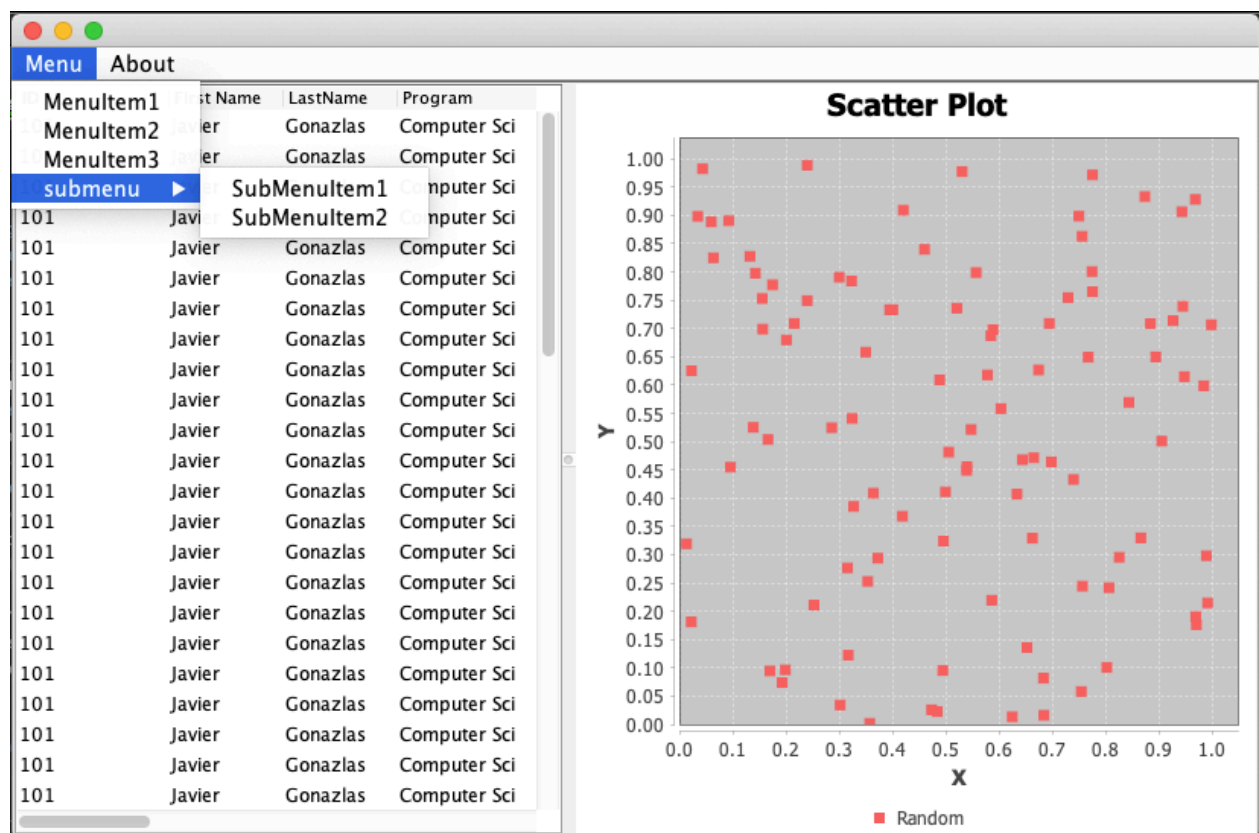
Given the high level of dependency of UI testing, I did not use many Junit test cases apart from

making a “dummy” program to experiment with the API used in the model. The components

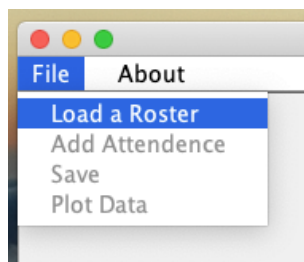
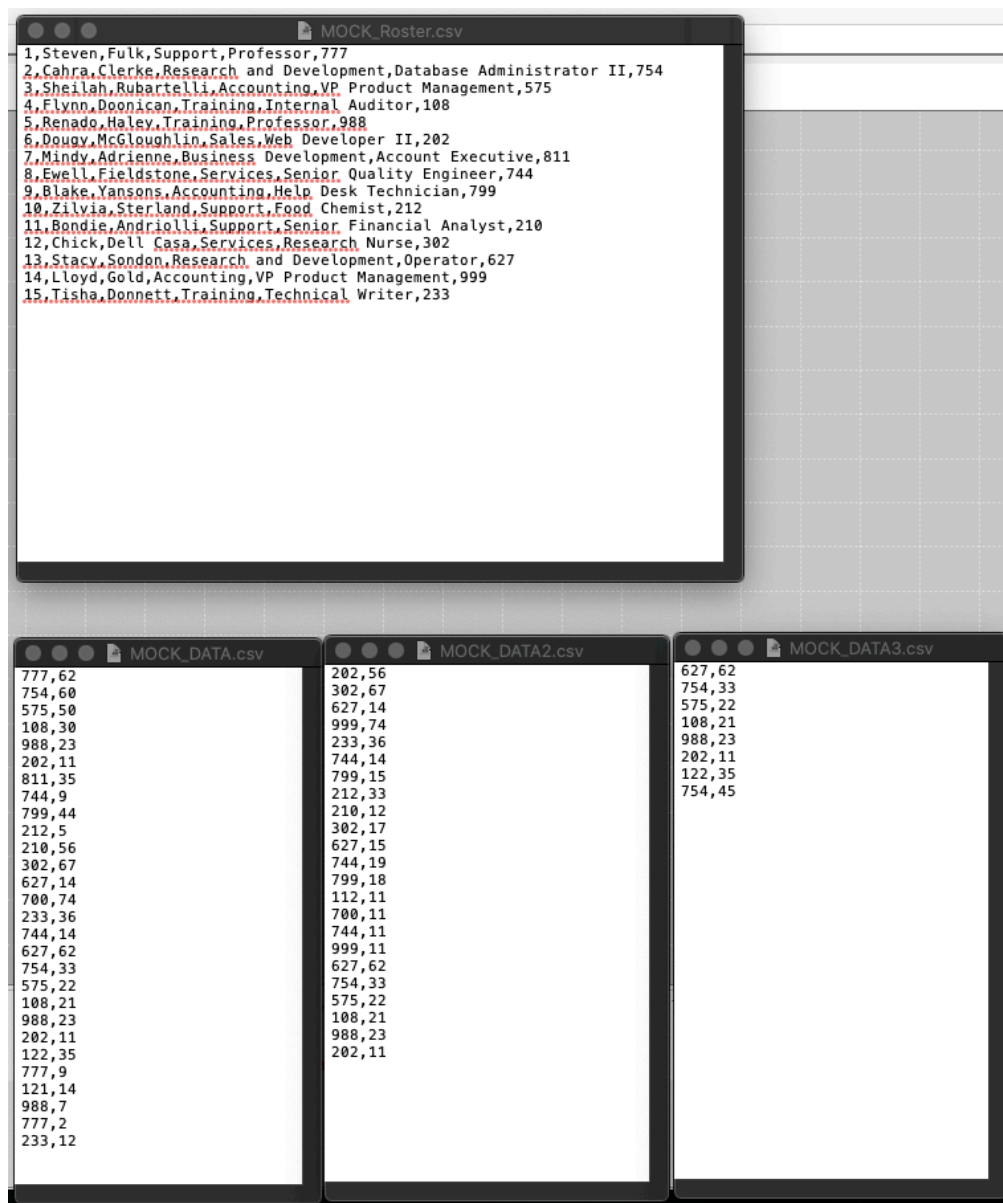
use locally declared data sets within the main method of this program. This was purely created

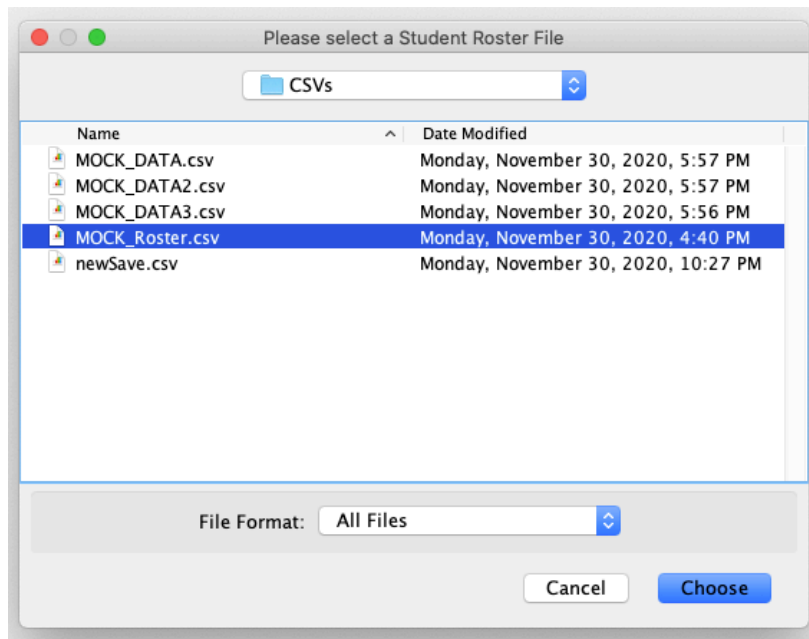
to familiarize myself with using JMenu and JFree Charts. Here is a screenshot of this dummy

program.



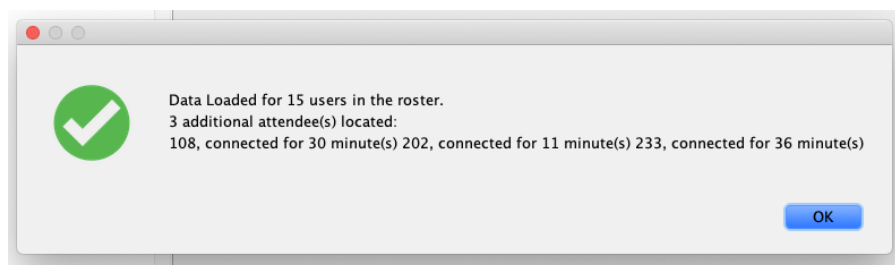
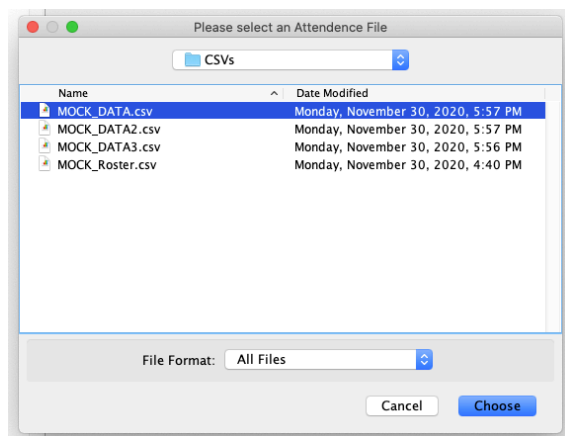
Program Screenshots

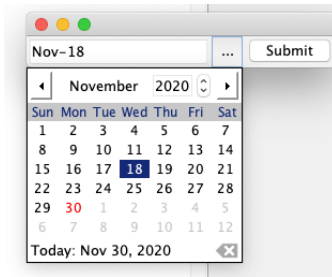




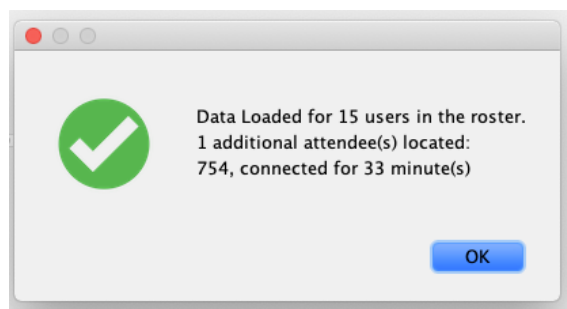
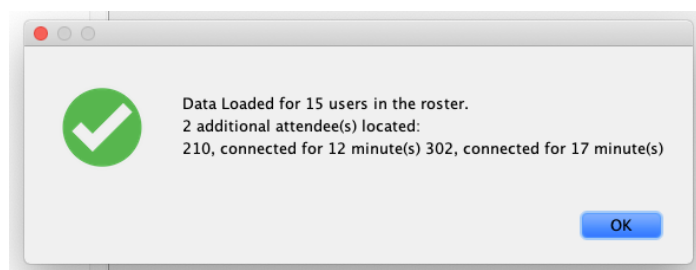
File About					
ID	First Name	Last Name	Program	Academic Level	ASURITE
1	Steven	Fulk	Support	Professor	777
2	Cahra	Clerke	Research ...	Database Ad...	754
3	Sheilah	Rubartelli	Accounting	VP Product Ma...	575
4	Flynn	Doonican	Training	Internal Auditor	108
5	Renado	Haley	Training	Professor	988
6	Dougy	McGloughlin	Sales	Web Develop...	202
7	Mindy	Adrienne	Business ...	Account Execu...	811
8	Ewell	Fieldstone	Services	Senior Quality ...	744
9	Blake	Yansons	Accounting	Help Desk Tec...	799
10	Zilvia	Sterland	Support	Food Chemist	212
11	Bondie	Andriolli	Support	Senior Financia...	210
12	Chick	Dell Casa	Services	Research Nurse	302
13	Stacy	Sondon	Research ...	Operator	627
14	Lloyd	Gold	Accounting	VP Product Ma...	999
15	Tisha	Donnett	Training	Technical Writer	233

File		About			
Load a Roster		Last Name	Program	Academic Level	ASURITE
Add Attendance		Fulk	Support	Professor	777
Save		Clerke	Research ...	Database Ad...	754
Plot Data		Rubartelli	Accounting	VP Product Ma...	575
4	Flynn	Doonican	Training	Internal Auditor	108
5	Renado	Haley	Training	Professor	988
6	Dougy	McGloughlin	Sales	Web Develop...	202
7	Mindy	Adrienne	Business ...	Account Execu...	811
8	Ewell	Fieldstone	Services	Senior Quality ...	744
9	Blake	Yansons	Accounting	Help Desk Tec...	799
10	Zilvia	Sterland	Support	Food Chemist	212
11	Bondie	Andriolli	Support	Senior Financia...	210
12	Chick	Dell Casa	Services	Research Nurse	302
13	Stacy	Sondon	Research ...	Operator	627
14	Lloyd	Gold	Accounting	VP Product Ma...	999
15	Tisha	Donnett	Training	Technical Writer	233





File About						
ID	First Name	Last Name	Program	Academic ...	ASURITE	Nov-18
1	Steven	Fulk	Support	Professor	777	73
2	Cahra	Clerke	Research ...	Database ...	754	93
3	Sheilah	Rubartelli	Accounting	VP Produc...	575	72
4	Flynn	Doonican	Training	Internal A...	108	51
5	Renado	Haley	Training	Professor	988	53
6	Dougy	McGloughlin	Sales	Web Deve...	202	22
7	Mindy	Adrienne	Business ...	Account E...	811	35
8	Ewell	Fieldstone	Services	Senior Qu...	744	23
9	Blake	Yansons	Accounting	Help Desk...	799	44
10	Zilvia	Sterland	Support	Food Che...	212	5
11	Bondie	Andriolli	Support	Senior Fin...	210	56
12	Chick	Dell Casa	Services	Research ...	302	67
13	Stacy	Sondon	Research ...	Operator	627	76
14	Lloyd	Gold	Accounting	VP Produc...	999	0
15	Tisha	Donnett	Training	Technical ...	233	48



File		About						
ID	First Name	Last Name	Program	Academic ...	ASURITE	Nov-18	Nov-30	Dec-23
1	Steven	Fulk	Support	Professor	777	73	0	0
2	Cahra	Clerke	Research ...	Database ...	754	93	33	78
3	Sheilah	Rubartelli	Accounting	VP Produc...	575	72	22	22
4	Flynn	Doonican	Training	Internal A...	108	51	21	21
5	Renado	Haley	Training	Professor	988	53	23	23
6	Dougy	McGloughlin	Sales	Web Deve...	202	22	67	11
7	Mindy	Adrienne	Business ...	Account E...	811	35	0	0
8	Ewell	Fieldstone	Services	Senior Qu...	744	23	44	0
9	Blake	Yansons	Accounting	Help Desk...	799	44	33	0
10	Zilvia	Sterland	Support	Food Che...	212	5	33	0
11	Bondie	Andriolli	Support	Senior Fin...	210	56	12	0
12	Chick	Dell Casa	Services	Research ...	302	67	84	0
13	Stacy	Sondon	Research ...	Operator	627	76	91	62
14	Lloyd	Gold	Accounting	VP Produc...	999	0	85	0
15	Tisha	Donnett	Training	Technical ...	233	48	36	0

File		About						
1	Load a Roster	Last Name	Program	Academic ...	ASURITE	Nov-18	Nov-30	Dec-23
2	Add Attendance	Fulk	Support	Professor	777	73	0	0
3	Save	Clerke	Research ...	Database ...	754	93	33	78
4	Plot Data	Rubartelli	Accounting	VP Produc...	575	72	22	22
5		Flynn	Doonican	Training	Internal A...	108	51	21
6		Renado	Haley	Training	Professor	988	53	23
7		Dougy	McGloughlin	Sales	Web Deve...	202	22	67
8		Mindy	Adrienne	Business ...	Account E...	811	35	0
9		Ewell	Fieldstone	Services	Senior Qu...	744	23	44
10		Blake	Yansons	Accounting	Help Desk...	799	44	33
11		Zilvia	Sterland	Support	Food Che...	212	5	33
12		Bondie	Andriolli	Support	Senior Fin...	210	56	12
13		Chick	Dell Casa	Services	Research ...	302	67	84
14		Stacy	Sondon	Research ...	Operator	627	76	91
15		Lloyd	Gold	Accounting	VP Produc...	999	0	85
16		Tisha	Donnett	Training	Technical ...	233	48	36

Save

Save As: newSave

CSVs

Name	Date Modified
MOCK_DATA.csv	Monday, November 30, 2020, 5:57 PM
MOCK_DATA2.csv	Monday, November 30, 2020, 5:57 PM
MOCK_DATA3.csv	Monday, November 30, 2020, 5:56 PM
MOCK_Roster.csv	Monday, November 30, 2020, 4:40 PM

File Format: All Files

New Folder

Cancel

Save

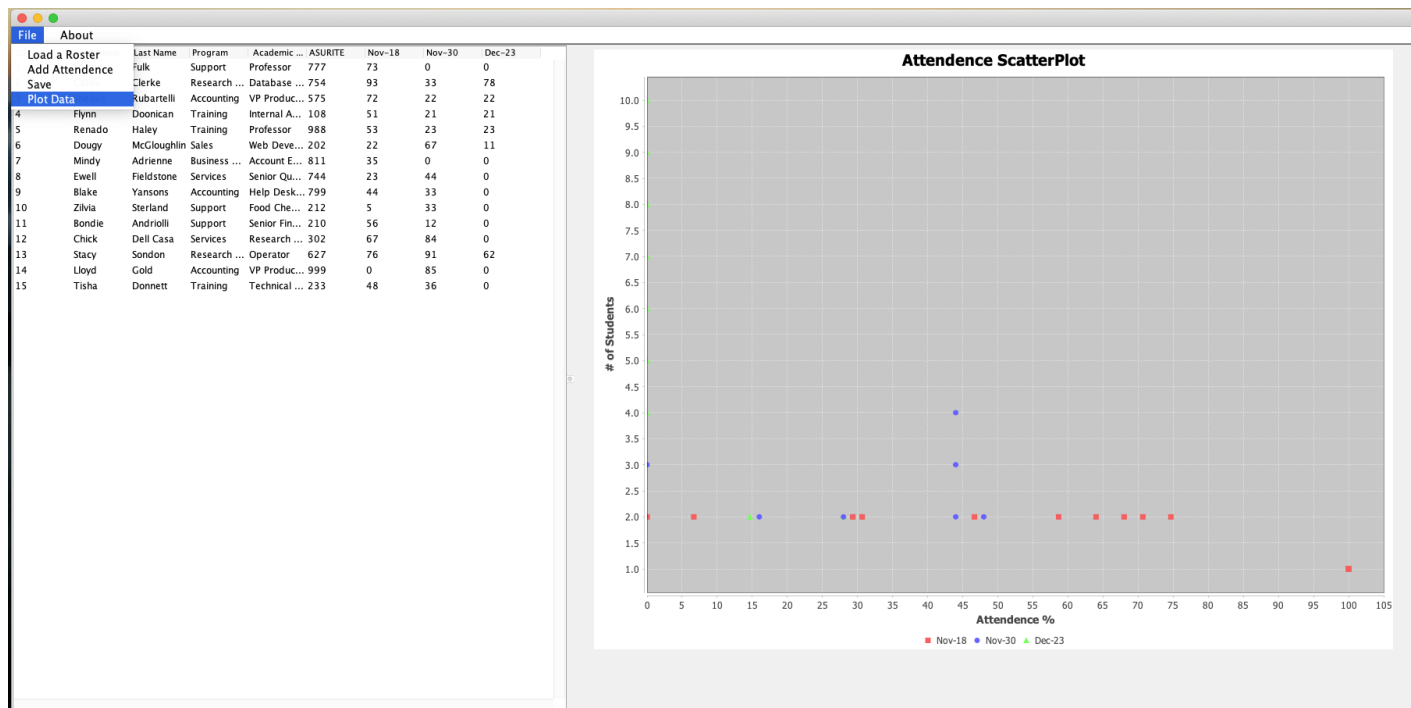
TextEdit File Edit Format View Window Help

File About

ID	First Name	Last Name	Program	Academic ...	ASURITE	Nov-18	Nov-30	Dec-23
1	Steven	Fulk	Support	Professor	777	73	0	0
2	Cahra	Clerke	Research ...	Database ...	754	93	33	78
3	Sheilah	Rubartelli	Accounting	VP Produc...	575	72	22	22
4	Flynn	Doonican	Train					
5	Renado	Haley	Train					
6	Dougy	McCloughlin	Sales					
7	Mindy	Adrienne	Busin					
8	Ewell	Fieldstone	Servi					
9	Blake	Yansons	Acco					
10	Zilvia	Sterland	Supp					
11	Bondie	Andrioli	Supp					
12	Chick	Dell Casa	Servi					
13	Stacy	Sondon	Rese					
14	Lloyd	Gold	Acco					
15	Tisha	Donnett	Train					

newSave.csv

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"2","Cahra","Clerke","Research and Development","Database Administrator","754","93","33","78"
"3","Sheilah","Rubartelli","Accounting","VP Product Management","575","72","22","22"
"4","Flynn","Doonican","Training","Internal Auditor","108","51","21","21"
"5","Renado","Haley","Training","Professor","988","53","23","23"
"6","Dougy","McCloughlin","Sales","Web Developer II","202","22","67","11"
"7","Mindy","Adrienne","Business Development","Account Executive","811","35","0","0"
"8","Ewell","Fieldstone","Services","Senior Quality Engineer","744","23","44","0"
"9","Blake","Yansons","Accounting","Help Desk Technician","799","44","33","0"
"10","Zilvia","Sterland","Support","Food Chemist","212","5","33","0"
"11","Bondie","Andrioli","Support","Senior Financial Analyst","210","56","12","0"
"12","Chick","Dell Casa","Services","Research Nurse","302","67","84","0"
"13","Stacy","Sondon","Research and Development","Operator","627","76","91","62"
"14","Lloyd","Gold","Accounting","VP Product Management","999","0","85","0"
"15","Tisha","Donnett","Training","Technical Writer","233","48","36","0"
```



Process

Since I completed the project by myself I choose the Agile software method since it meant I would prioritize getting a working program completed with flexibility. When starting out, I first facilized myself with the Maven dependencies by creating building a “dummy” program which had a split panel of a JTable with arbitrary data sets and a scatter plot of random coordinates. Next begun designing the program starting with the Main Application class to create a blank Split pane with a menu bar. I then created a decorative pattern with the table and scatter plot objects. I created instances of JFree Scatter Plot and JTable within each decorative child class of DataDecorative type. The DataDecorative type inherts from the DisplayableData class which provides access to the array of data displayed by the table and scatter plot. At this point when creating the individual classes I would leave them mostly un-implemented until they were needed to add the next level of functionality to the program. Given the skeleton of the program, I could now begin building functionality starting with adding action listeners to the Load Attendance menu item. This then lead to completing the Observer pattern by creating a function in the StudentListSource so the Observer can update the dataTable array with input read from the CSV file. Once I could print the dataTable, I begun adding functionality to the JTable which I felt was the most challenging. The JTable which uses the DefaultTableModel worked well with basic input but became more challenging when adding additional columns of attendance time data. If I was to go back and redesign this part I would have build my own table model so that searching for duplicate item would not require so much work for just a few methods in the DataTable class. Once the table could display both student information and attendance properly I went back to the mainApplication class to add functionality for Saving and building the Scatter Plot. Since the scatterplot uses XYCollections it required a few extra functions for correctly displaying the data. Apart from a few bugs where the JDatePicker hides behind the new attendance dialog box and failing to display data when an attendance file is used for loading a roster, I think the program runs smoothly despite the complexity of the model. One disadvantage with the agile process is that it can be hard to organize functionality properly since design elements tend to change as the model is being developed.

