Project 3 Documentation

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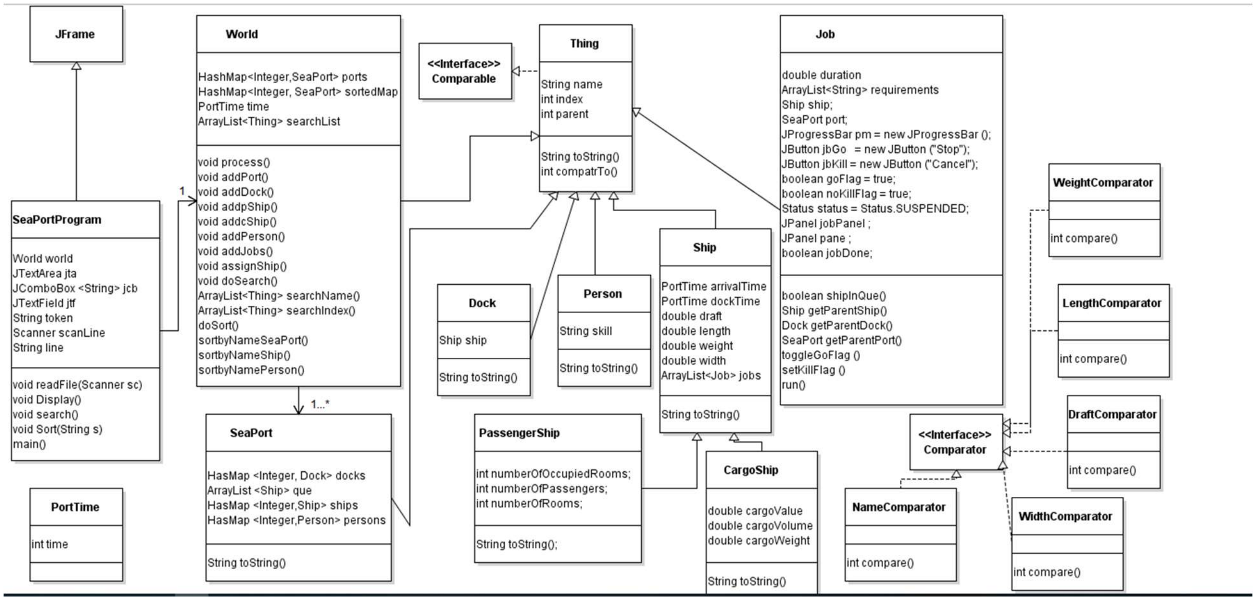
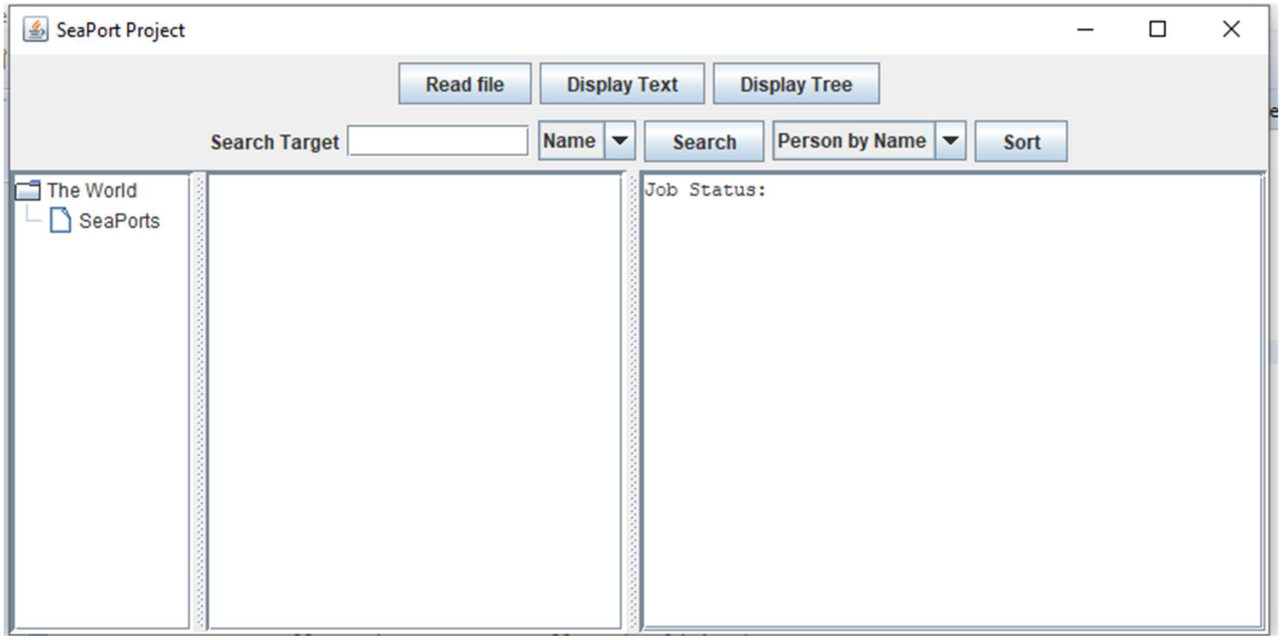
Class: CMSC 335

- Design:
  The change in design from previous project is that this design will have more implementations in Job class.
  Due to the lack of space, I did not add all the methods and variables inside class entity.

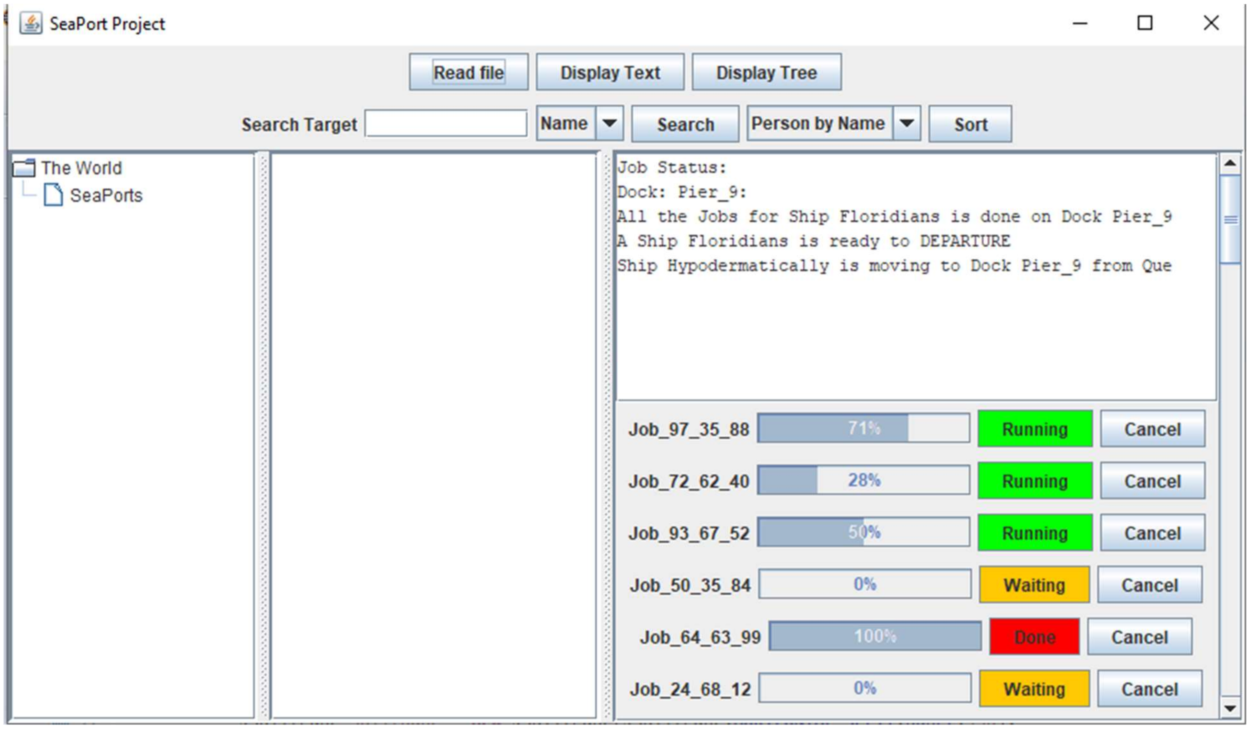


- User's guide:
  - Starting and Running Project: This is same as Project 1 and 2.
  - **Special feature added in Project 3**: The Special feature added in project 3 is that it effectively displays the content of data file as a JTree on left-hand side in scroll pane when user press display tree button after reading the data file. And it also creates and run the threads for each job that competes for same resources. The simple GUI for project 3 looks like this after running the program and resizing the window.



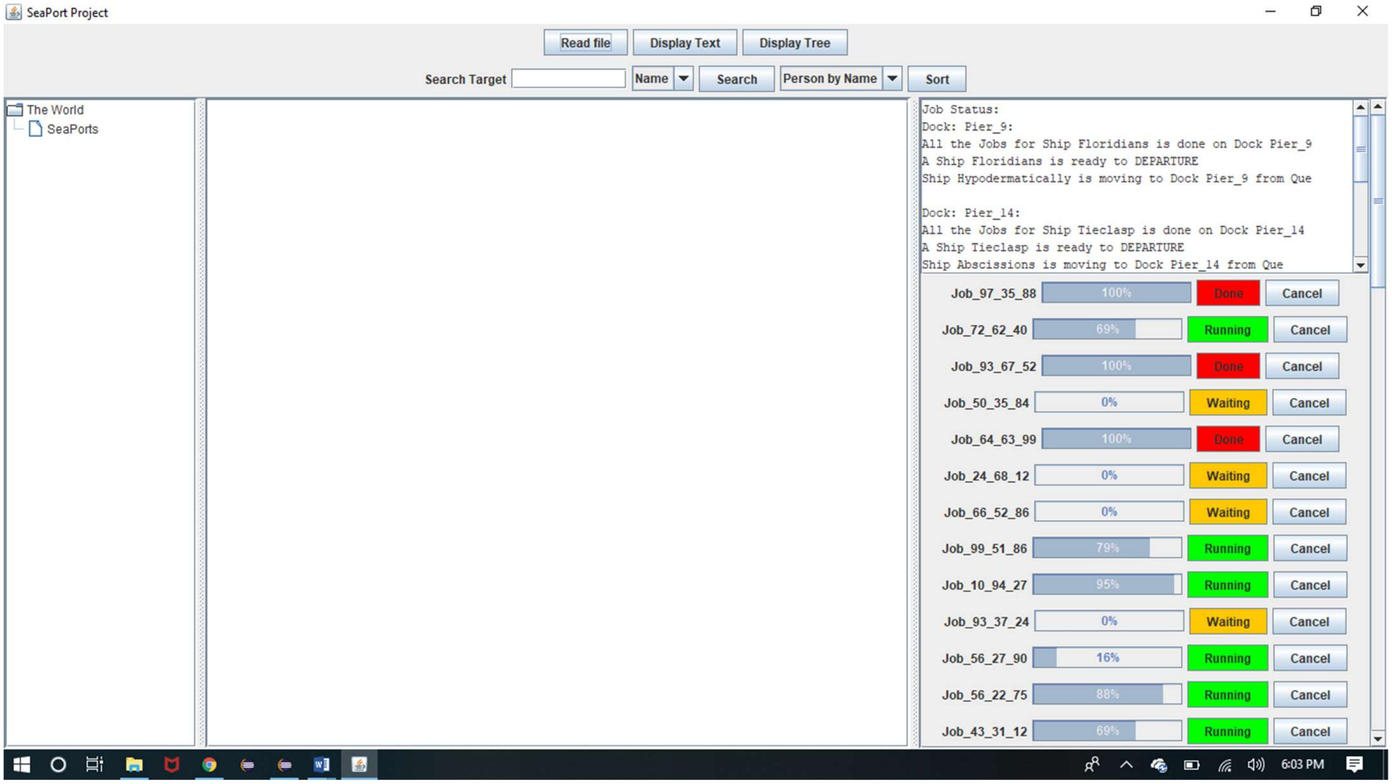
```
Job Status:
```

As this project has additional functionality User can choose the Data file by clicking the read file button as previous projects. The GUI will display the Job threads running for given data file on lower-right side scroll pane and also displays the Job status running on Dock in the Job Status text area on Upper- right side scroll pane. The GUI will look like below.


SeaPort Project
Read file
Display Text
Display Tree
Search Target
Name
Search
Person by Name
Sort
The World
SeaPorts
Job_97_35_88 71% Running Cancel
Job_72_62_40 28% Running Cancel
Job_93_67_52 50% Running Cancel
Job_50_35_84 0% Waiting Cancel
Job_64_63_99 100% Done Cancel
Job_24_68_12 0% Waiting Cancel

```
Job Status:
Dock: Pier_9:
All the Jobs for Ship Floridians is done on Dock Pier_9
A Ship Floridians is ready to DEPARTURE
Ship Hypodermatically is moving to Dock Pier_9 from Que
```

This is the Maximized window.

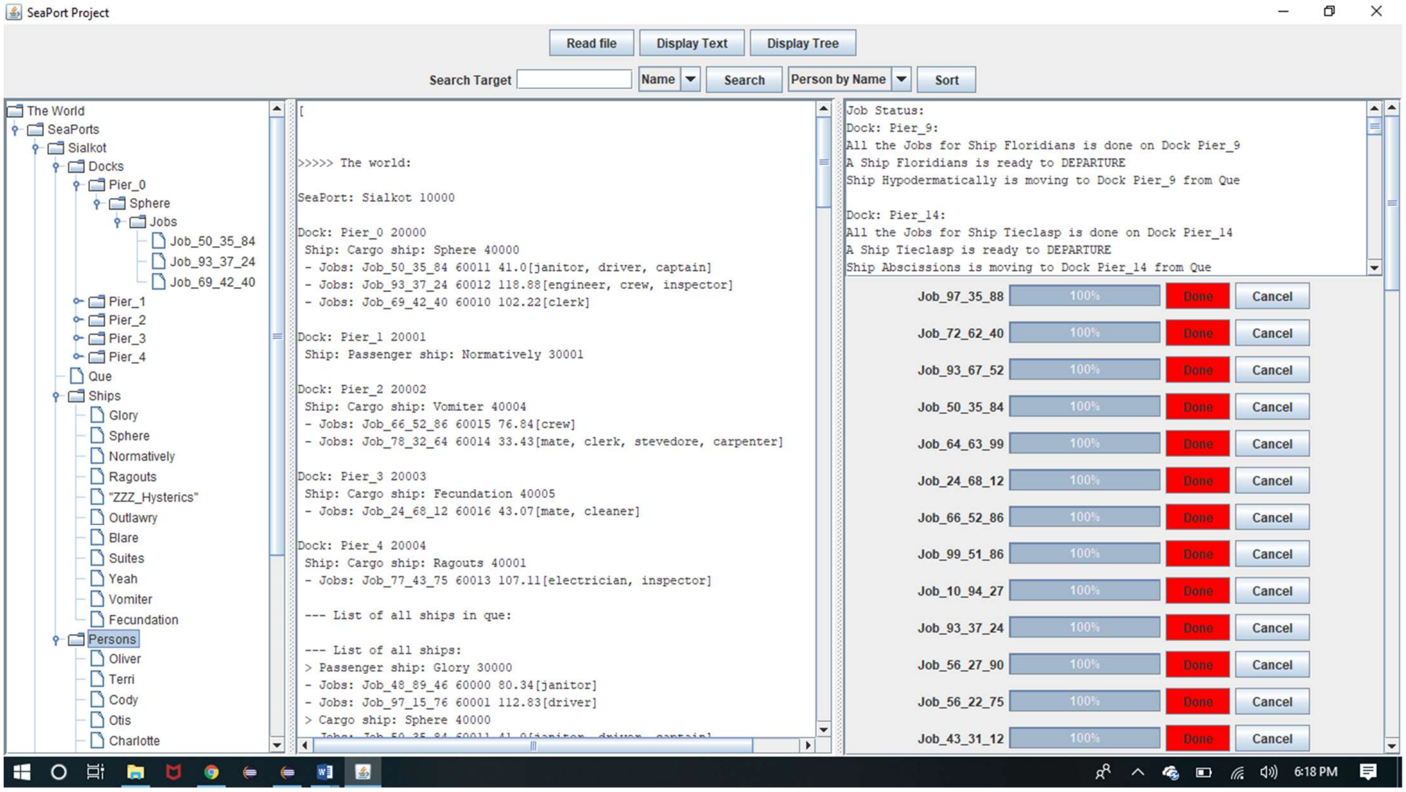


```
Job Status:
Dock: Pier_9:
All the Jobs for Ship Floridians is done on Dock Pier_9
A Ship Floridians is ready to DEPARTURE
Ship Hypodermatically is moving to Dock Pier_9 from Que

Dock: Pier_14:
All the Jobs for Ship Tieclasp is done on Dock Pier_14
A Ship Tieclasp is ready to DEPARTURE
Ship Abscissions is moving to Dock Pier_14 from Que
```

Job_97_35_88	100%	Done	Cancel
Job_72_62_40	69%	Running	Cancel
Job_93_67_52	100%	Done	Cancel
Job_50_35_84	0%	Waiting	Cancel
Job_64_63_99	100%	Done	Cancel
Job_24_68_12	0%	Waiting	Cancel
Job_66_52_86	0%	Waiting	Cancel
Job_99_51_86	79%	Running	Cancel
Job_10_94_27	95%	Running	Cancel
Job_93_37_24	0%	Waiting	Cancel
Job_56_27_90	16%	Running	Cancel
Job_56_22_75	88%	Running	Cancel
Job_43_31_12	69%	Running	Cancel

User can adjust the size of scroll pane as they required to see the data.

When User press the Display Tree button and click on the Seaports node and all the nested nodes inside it, it will display all the data in form of tree. And clicking the Display Text button will display the data in form of text in text area. The GUI's given below shows both the functionality as well as it also shows all the job Done for asPad.txt data file, and job status in Job Status area.



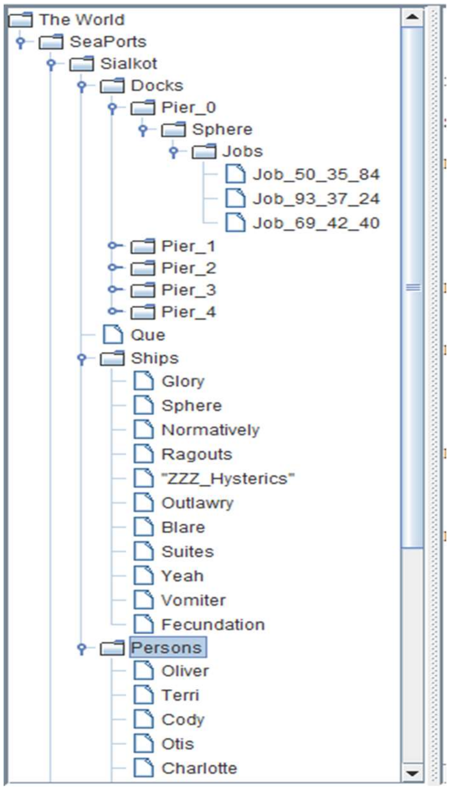
```
The World
  SeaPorts
    Sialkot
      Docks
        Pier_0
          Sphere
            Jobs
              Job_50_35_84
              Job_93_37_24
              Job_69_42_40
        Pier_1
        Pier_2
        Pier_3
        Pier_4
      Que
      Ships
        Glory
        Sphere
        Normatively
        Ragouts
        "ZZZ_Hysterics"
        Outlawry
        Blare
        Suites
        Yeah
        Vomiter
        Fecundation
      Persons
        Oliver
        Terri
        Cody
        Otis
        Charlotte
```

```
[



>>>>> The world:

SeaPort: Sialkot 10000

Dock: Pier_0 20000
 Ship: Cargo ship: Sphere 40000
 - Jobs: Job_50_35_84 60011 41.0[janitor, driver, captain]
 - Jobs: Job_93_37_24 60012 118.88[engineer, crew, inspector]
 - Jobs: Job_69_42_40 60010 102.22[clerk]

Dock: Pier_1 20001
 Ship: Passenger ship: Normatively 30001

Dock: Pier_2 20002
 Ship: Cargo ship: Vomiter 40004
 - Jobs: Job_66_52_86 60015 76.84[crew]
 - Jobs: Job_78_32_64 60014 33.43[mate, clerk, stevedore, carpenter]

Dock: Pier_3 20003
 Ship: Cargo ship: Fecundation 40005
 - Jobs: Job_24_68_12 60016 43.07[mate, cleaner]

Dock: Pier_4 20004
 Ship: Cargo ship: Ragouts 40001
 - Jobs: Job_77_43_75 60013 107.11[electrician, inspector]

 --- List of all ships in que:

 --- List of all ships:
 > Passenger ship: Glory 30000
 - Jobs: Job_48_89_46 60000 80.34[janitor]
 - Jobs: Job_97_15_76 60001 112.83[driver]
 > Cargo ship: Sphere 40000
 - Jobs: Job_50_35_84 60011 41.0[janitor, driver, captain]
```

```
Job Status:
Dock: Pier_9:
All the Jobs for Ship Floridians is done on Dock Pier_9
A Ship Floridians is ready to DEPARTURE
Ship Hypodermatically is moving to Dock Pier_9 from Que

Dock: Pier_14:
All the Jobs for Ship Tieclasp is done on Dock Pier_14
A Ship Tieclasp is ready to DEPARTURE
Ship Abscissions is moving to Dock Pier_14 from Que
```

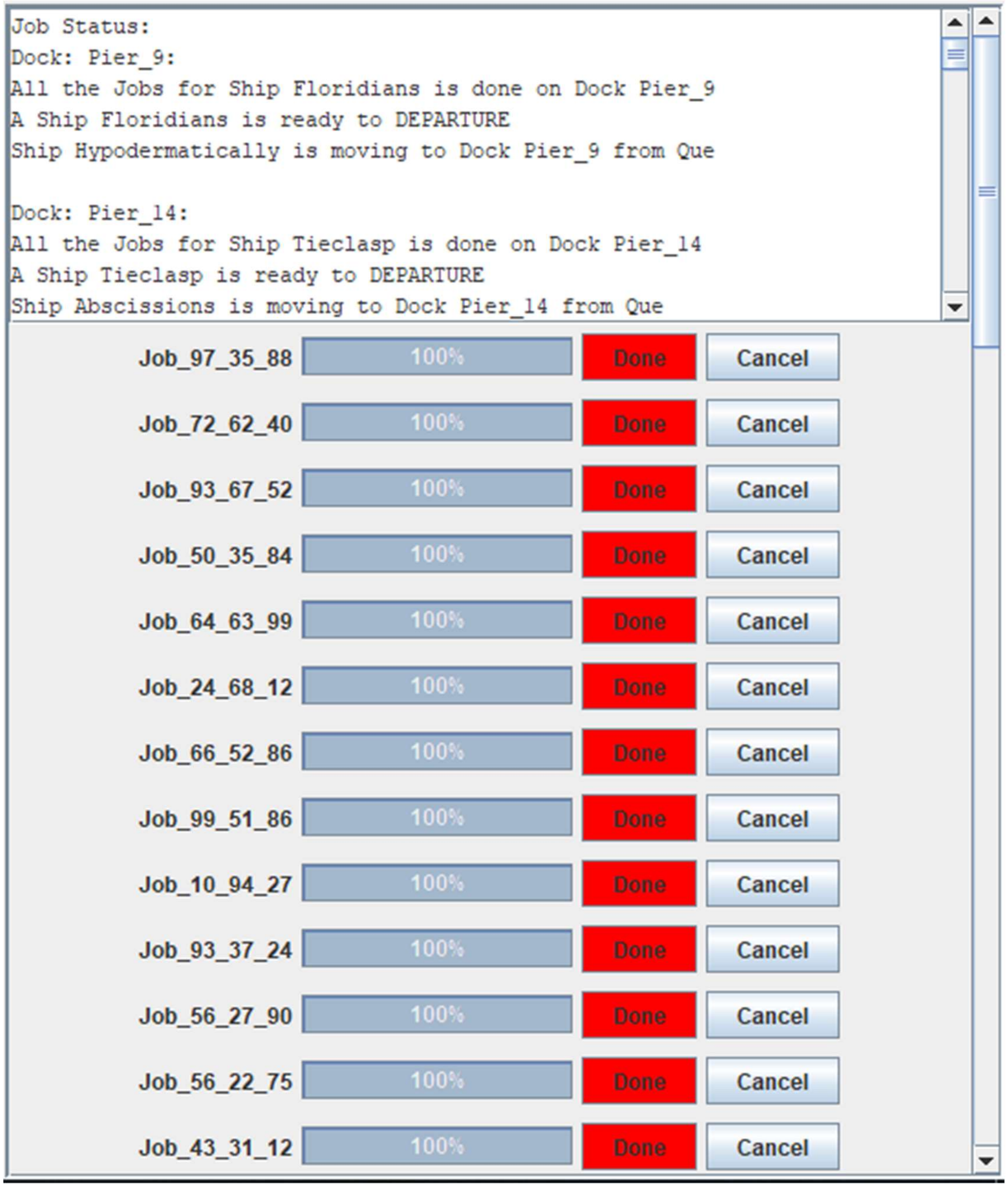
```
Job_97_35_88   100%   Done   Cancel
Job_72_62_40   100%   Done   Cancel
Job_93_67_52   100%   Done   Cancel
Job_50_35_84   100%   Done   Cancel
Job_64_63_99   100%   Done   Cancel
Job_24_68_12   100%   Done   Cancel
Job_66_52_86   100%   Done   Cancel
Job_99_51_86   100%   Done   Cancel
Job_10_94_27   100%   Done   Cancel
Job_93_37_24   100%   Done   Cancel
Job_56_27_90   100%   Done   Cancel
Job_56_22_75   100%   Done   Cancel
Job_43_31_12   100%   Done   Cancel
```

The closer screen captures of all the JTree and all the Jobs panels.



```
The World
  SeaPorts
    Sialkot
      Docks
        Pier_0
          Sphere
            Jobs
              Job_50_35_84
              Job_93_37_24
              Job_69_42_40
        Pier_1
        Pier_2
        Pier_3
        Pier_4
      Que
      Ships
        Glory
        Sphere
        Normatively
        Ragouts
        "ZZZ_Hysterics"
        Outlawry
        Blare
        Suites
        Yeah
        Vomiter
        Fecundation
      Persons
        Oliver
        Terri
        Cody
        Otis
        Charlotte
```

Job Status area shows the message in text area when all the jobs for the dock is done, so that Ship can depart from the Dock and new ship from the que can move to Dock.



```
Job Status:
Dock: Pier_9:
All the Jobs for Ship Floridians is done on Dock Pier_9
A Ship Floridians is ready to DEPARTURE
Ship Hypodermatically is moving to Dock Pier_9 from Que

Dock: Pier_14:
All the Jobs for Ship Tieclasp is done on Dock Pier_14
A Ship Tieclasp is ready to DEPARTURE
Ship Abscissions is moving to Dock Pier_14 from Que
```

Job_97_35_88	100%	Done	Cancel
Job_72_62_40	100%	Done	Cancel
Job_93_67_52	100%	Done	Cancel
Job_50_35_84	100%	Done	Cancel
Job_64_63_99	100%	Done	Cancel
Job_24_68_12	100%	Done	Cancel
Job_66_52_86	100%	Done	Cancel
Job_99_51_86	100%	Done	Cancel
Job_10_94_27	100%	Done	Cancel
Job_93_37_24	100%	Done	Cancel
Job_56_27_90	100%	Done	Cancel
Job_56_22_75	100%	Done	Cancel
Job_43_31_12	100%	Done	Cancel

- Test Plan for Project 1 and 2:

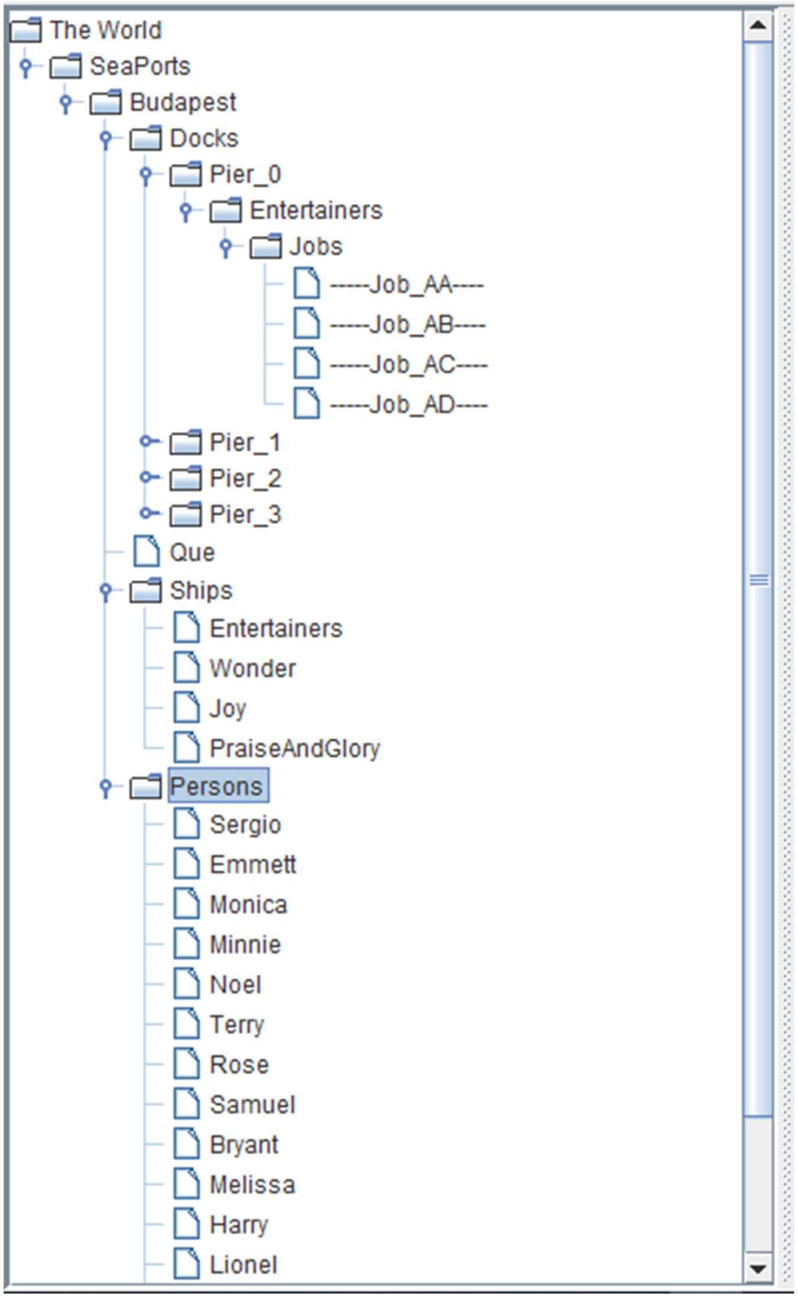
  All the testcases for Project 1 and Project 2 is the same as described befor. No changes has been made except the modification in GUI due to additional functonality.

- Test Plan for Project 3:

  I have used 3 data files to test this program aSPab.txt and aSPad.txt and 470Duchon.txt. I have attached all the files in submission.

Number	**Test Scenario**	**Input**	**Pass/Fail**
1	Correctly displaying JTree	470Duchon.txt file	Yes
2	Correctly pause the job on clicking the Running Button.	aSPad.txt	Yes
3	Correctly stop the job from running by clicking Stop Button in Job Panel.	asPab.txt	Yes

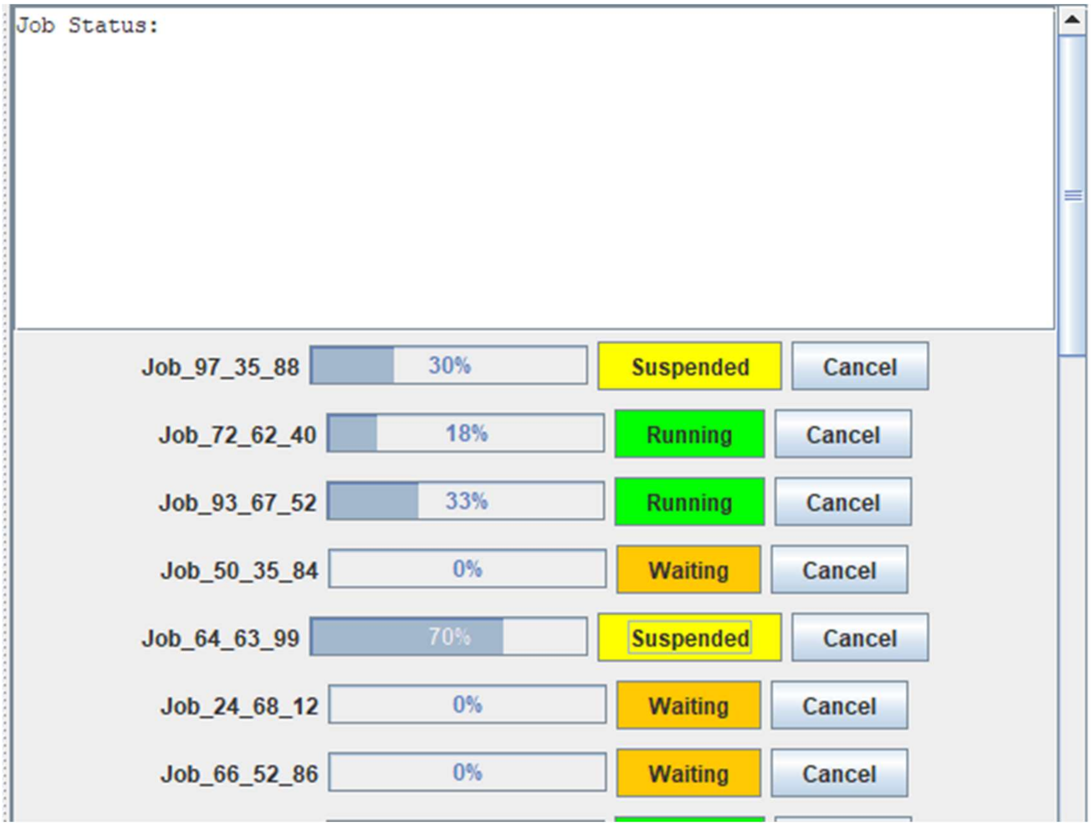
Testcase 1 screen shot:



```
The World
  SeaPorts
    Budapest
      Docks
        Pier_0
          Entertainers
            Jobs
              -----Job_AA----
              -----Job_AB----
              -----Job_AC----
              -----Job_AD----
        Pier_1
        Pier_2
        Pier_3
      Que
      Ships
        Entertainers
        Wonder
        Joy
        PraiseAndGlory
      Persons
        Sergio
        Emmett
        Monica
        Minnie
        Noel
        Terry
        Rose
        Samuel
        Bryant
        Melissa
        Harry
        Lionel
```

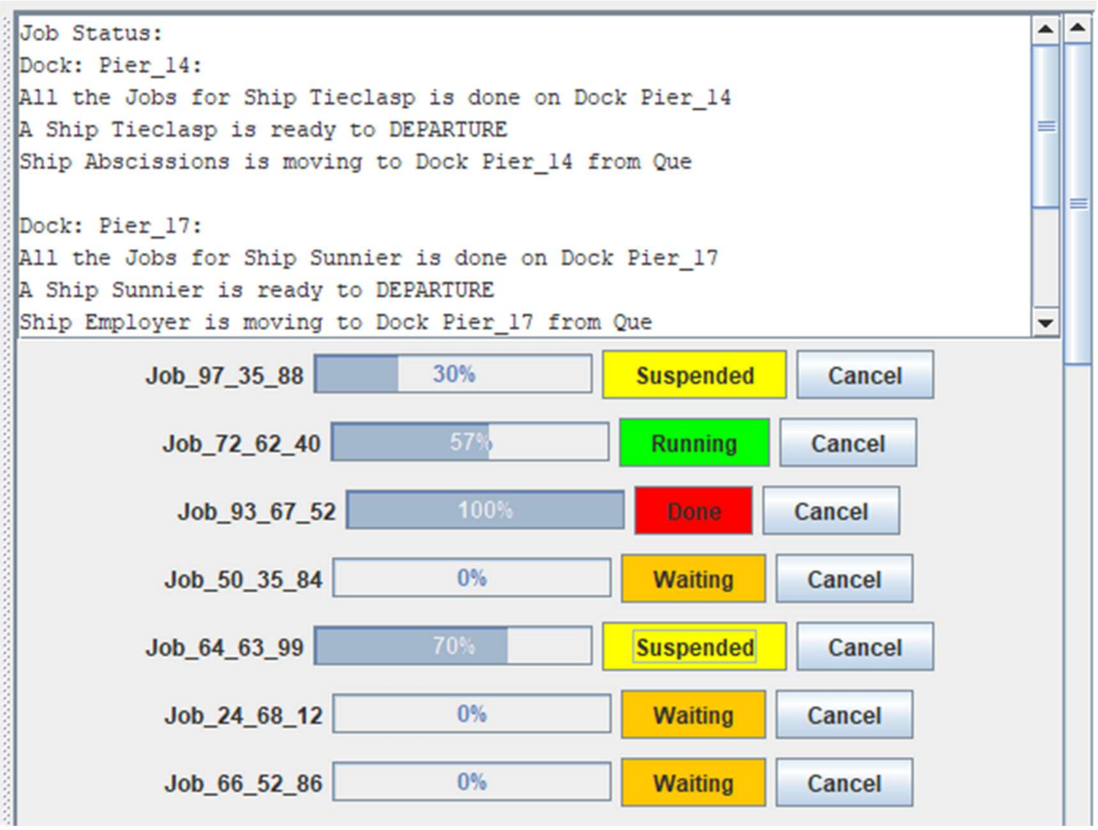
Testcase 2 screen shot:

2 screen capture shows that progress of Job_97_35_88 and Job_64_63_99 is paused. While other job has progressed. And also 2nd picture shows the Job in all four States.



```
Job Status:
```

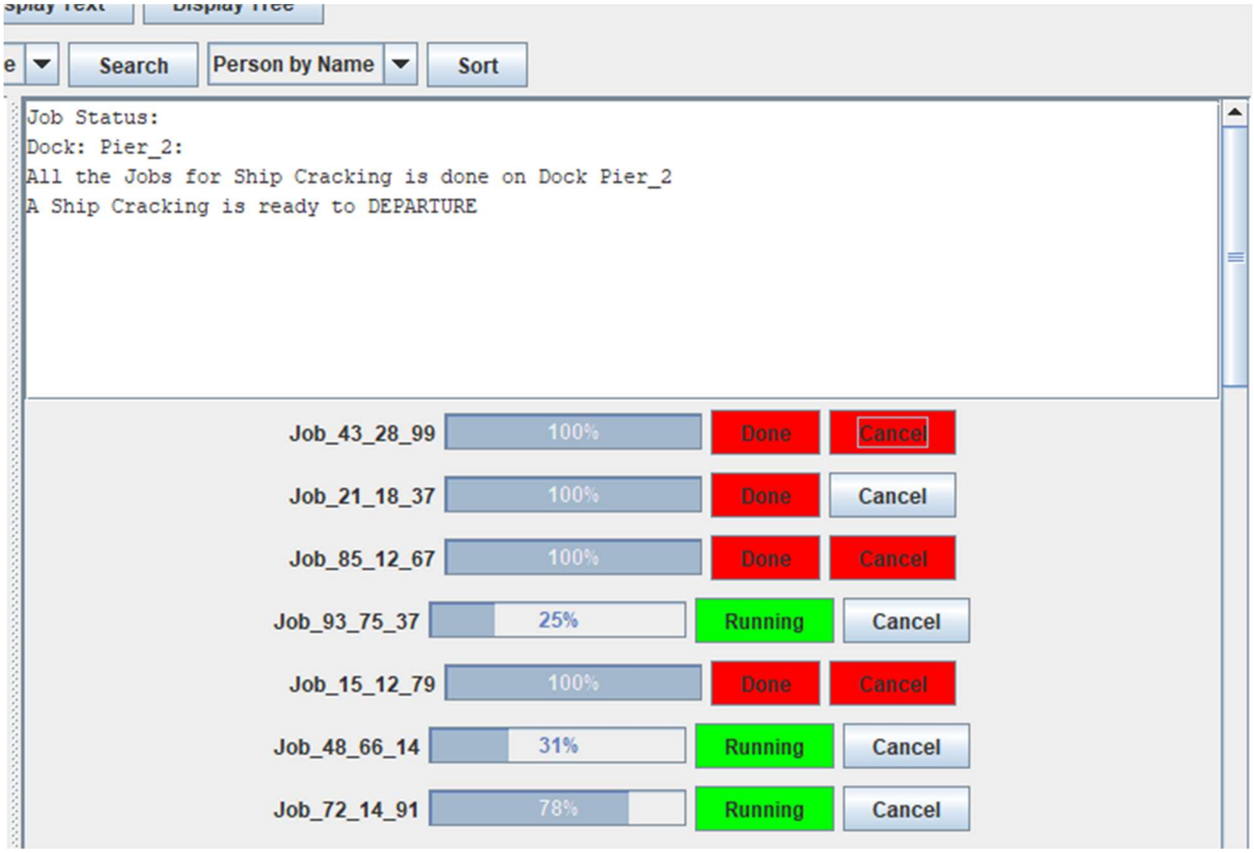
```
Job_97_35_88   30%   Suspended
Job_72_62_40   18%   Running
Job_93_67_52   33%   Running
Job_50_35_84    0%   Waiting
Job_64_63_99   70%   Suspended
Job_24_68_12    0%   Waiting
Job_66_52_86    0%   Waiting
```



```
Job Status:
Dock: Pier_14:
All the Jobs for Ship Tieclasp is done on Dock Pier_14
A Ship Tieclasp is ready to DEPARTURE
Ship Abscissions is moving to Dock Pier_14 from Que

Dock: Pier_17:
All the Jobs for Ship Sunnier is done on Dock Pier_17
A Ship Sunnier is ready to DEPARTURE
Ship Employer is moving to Dock Pier_17 from Que
```

```
Job_97_35_88   30%   Suspended
Job_72_62_40   57%   Running
Job_93_67_52  100%   Done
Job_50_35_84    0%   Waiting
Job_64_63_99   70%   Suspended
Job_24_68_12    0%   Waiting
Job_66_52_86    0%   Waiting
```

Testcase screen shot 13:



```
Job Status:
Dock: Pier_2:
All the Jobs for Ship Cracking is done on Dock Pier_2
A Ship Cracking is ready to DEPARTURE
```

- Not Implemented:

  Not Applicable.

- Lesson Learned:

  Project 1:

  During working on this project, I realized that How I can connect the idea of object-oriented programming with the real world. I learned the use of inheritance so that we can reuse the code, and all the class is a type of a Thing (Thing.java) so that in future projects we can compare and sort them. I also learn that how to select file using JFileChooser in javaFx.

  In this project I can more improve on displaying my search result.

Project 2:

During working on Project 2 had a very hard time figuring out how to do sorting in HashMap. After lot of trial and error finally implemented sorting on HashMap.

Project 3:

Get to learn about Multithreading concept in this project.