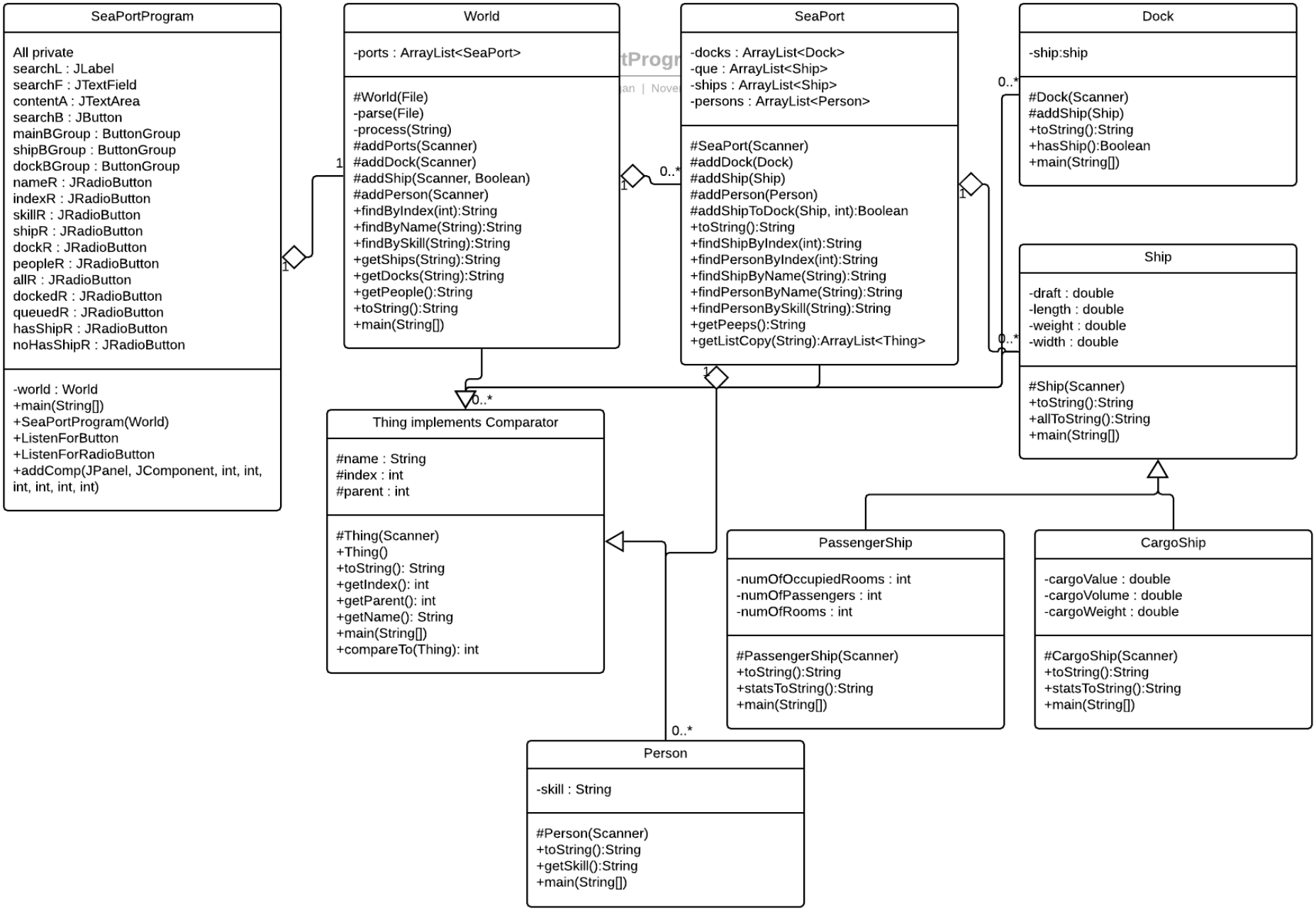
Zachary Finnegan
11/2/2019

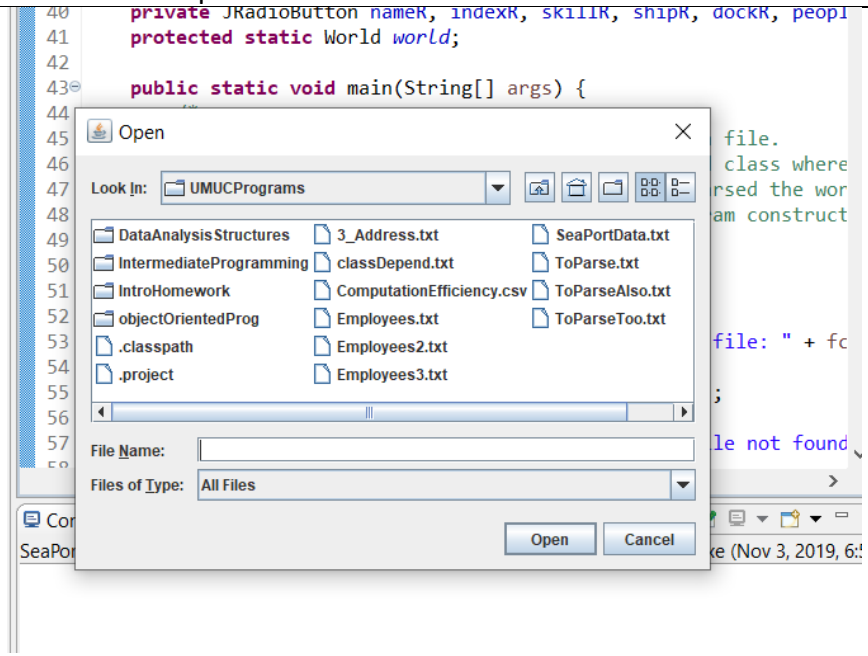
Project 1

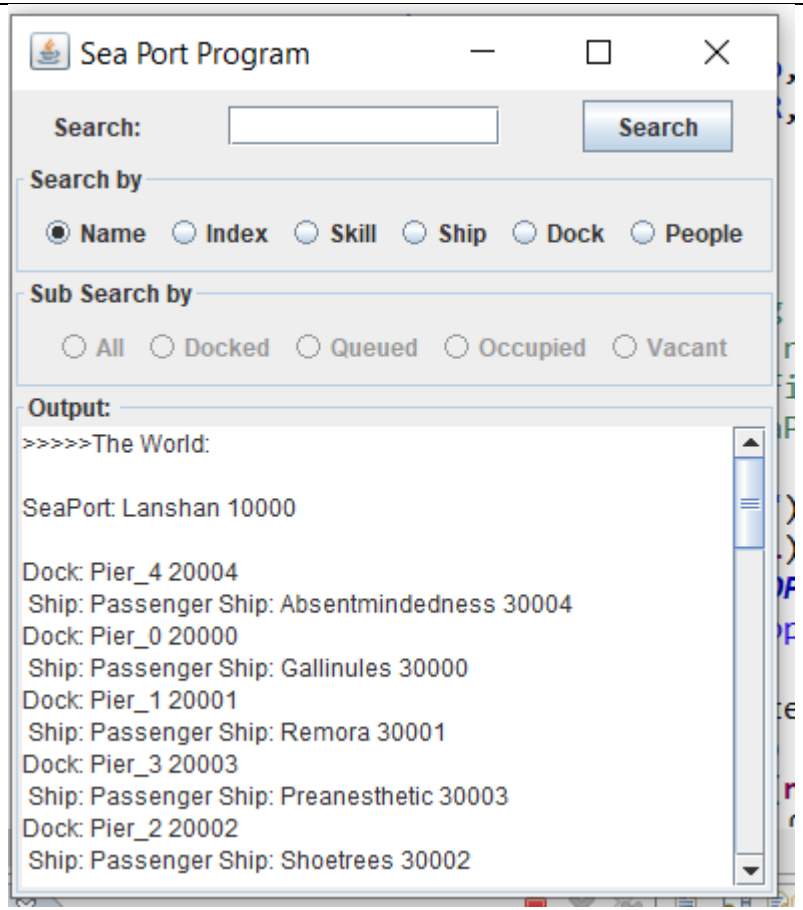
CMSC 335

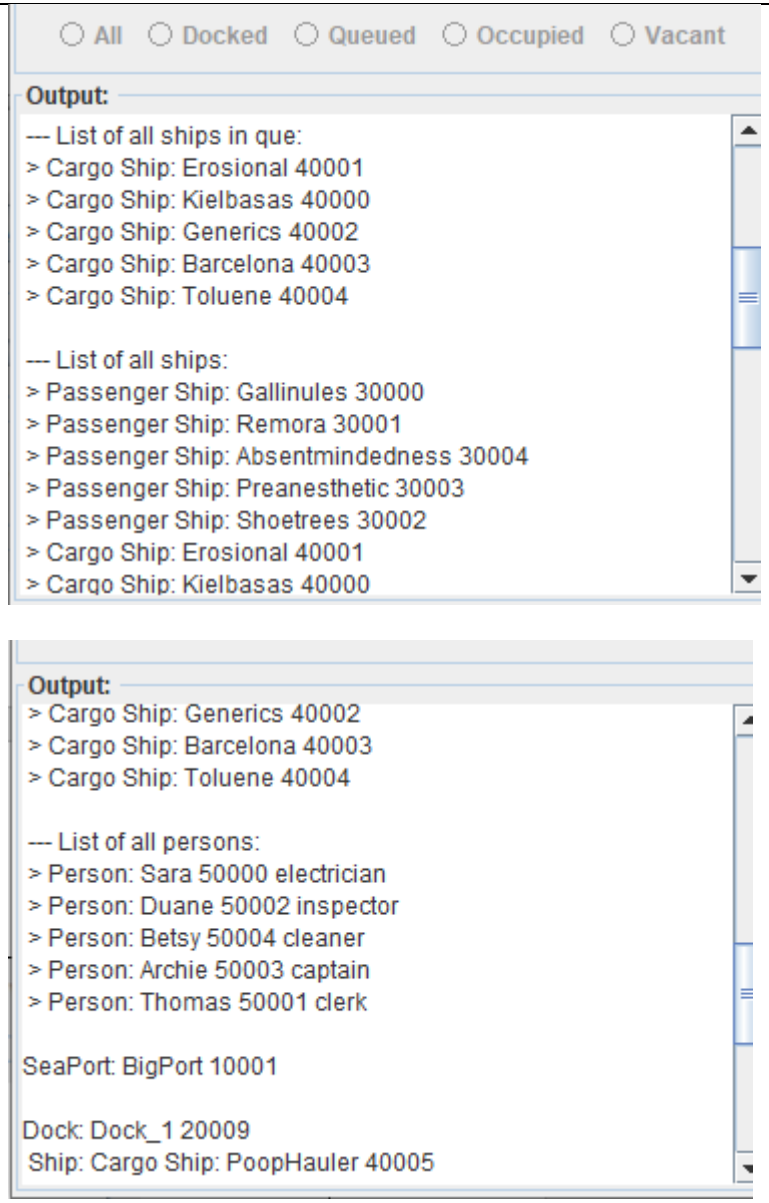
1. Design

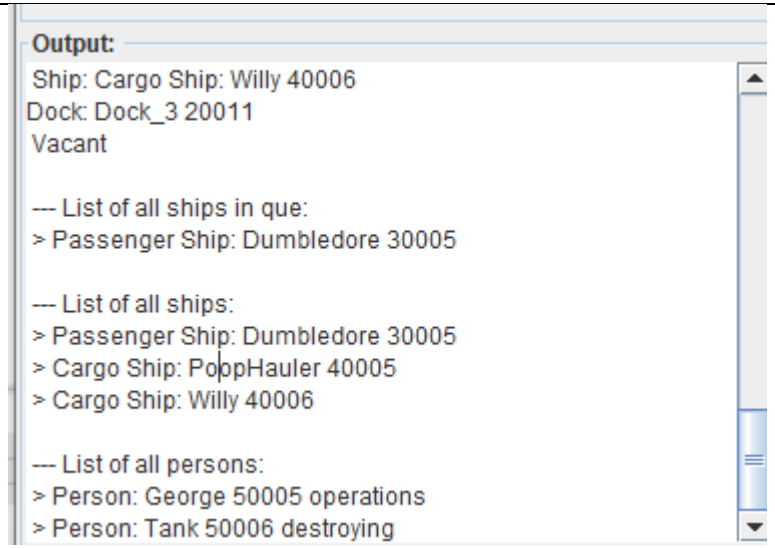

SeaPortProgram
All private
searchL : JLabel
searchF : JTextField
contentA : JTextArea
searchB : JButton
mainBGroup : ButtonGroup
shipBGroup : ButtonGroup
dockBGroup : ButtonGroup
nameR : JRadioButton
indexR : JRadioButton
skillR : JRadioButton
shipR : JRadioButton
dockR : JRadioButton
peopleR : JRadioButton
allR : JRadioButton
dockedR : JRadioButton
queuedR : JRadioButton
hasShipR : JRadioButton
noHasShipR : JRadioButton
-world : World
+main(String[])
+SeaPortProgram(World)
+ListenForButton
+ListenForRadioButton
+addComp(JPanel, JComponent, int, int, int, int, int, int)
World
-ports : ArrayList<SeaPort>
#World(File)
-parse(File)
-process(String)
#addPorts(Scanner)
#addDock(Scanner)
#addShip(Scanner, Boolean)
#addPerson(Scanner)
+findByIndex(int):String
+findByName(String):String
+findBySkill(String):String
+getShips(String):String
+getDocks(String):String
+getPeople():String
+toString():String
+main(String[])
SeaPort
-docks : ArrayList<Dock>
-que : ArrayList<Ship>
-ships : ArrayList<Ship>
-persons : ArrayList<Person>
#SeaPort(Scanner)
#addDock(Dock)
#addShip(Ship)
#addPerson(Person)
#addShipToDock(Ship, int):Boolean
+toString():String
+findShipByIndex(int):String
+findPersonByIndex(int):String
+findShipByName(String):String
+findPersonByName(String):String
+findPersonBySkill(String):String
+getPeeps():String
+getListCopy(String):ArrayList<Thing>
Dock
-ship:ship
#Dock(Scanner)
#addShip(Ship)
+toString():String
+hasShip():Boolean
+main(String[])
Ship
-draft : double
-length : double
-weight : double
-width : double
#Ship(Scanner)
+toString():String
+allToString():String
+main(String[])
Thing implements Comparator
#name : String
#index : int
#parent : int
#Thing(Scanner)
+Thing()
+toString(): String
+getIndex(): int
+getParent(): int
+getName(): String
+main(String[])
+compareTo(Thing): int
PassengerShip
-numOfOccupiedRooms : int
-numOfPassengers : int
-numOfRooms : int
#PassengerShip(Scanner)
+toString():String
+statsToString():String
+main(String[])
CargoShip
-cargoValue : double
-cargoVolume : double
-cargoWeight : double
#CargoShip(Scanner)
+toString():String
+statsToString():String
+main(String[])
Person
-skill : String
#Person(Scanner)
+toString():String
+getSkill():String
+main(String[])
1
0..*

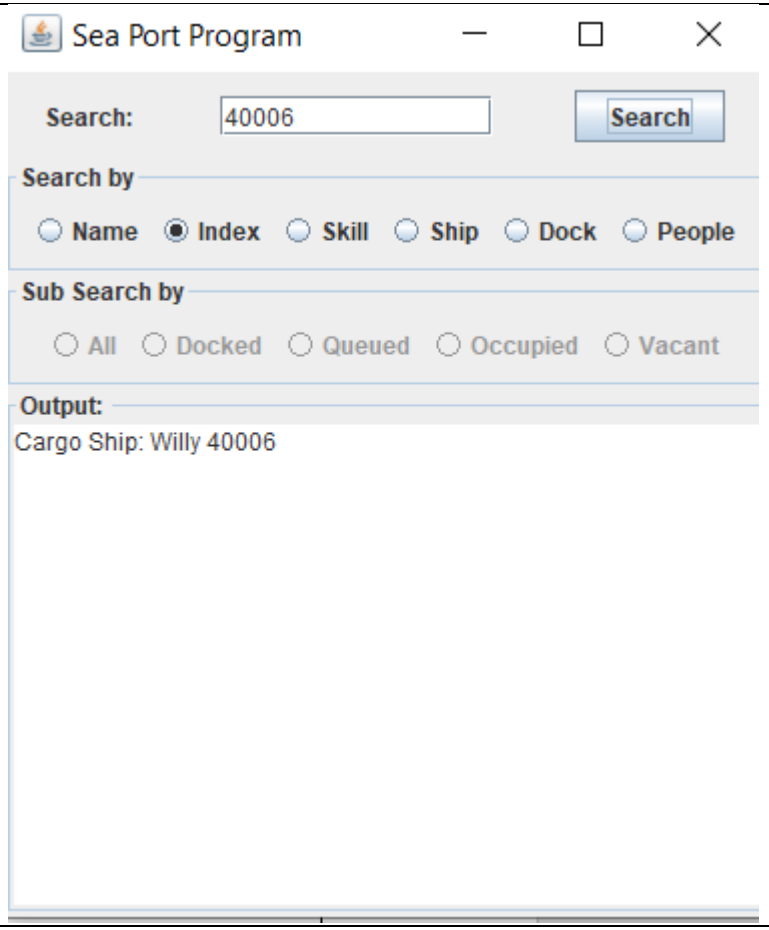
2. User's Guide
    a. Add the package to your IDE path. Import it to your IDE and then press run. Select the SeaPortData.txt when the JFileChooser pops up and then search to your hearts content.
3. Test Plan

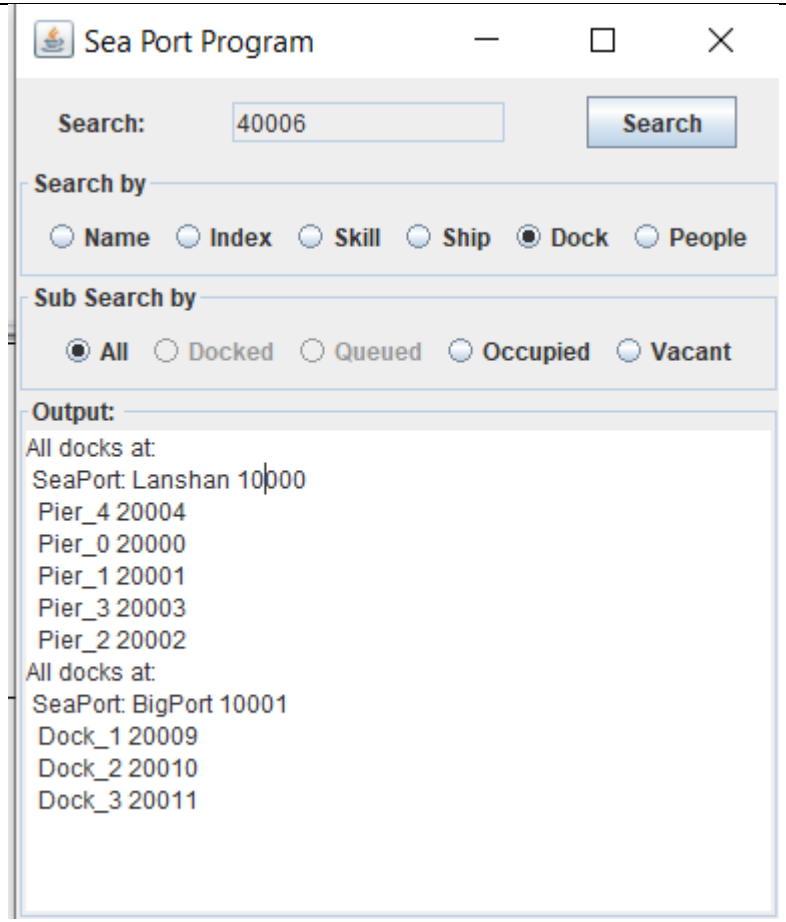
Test	Input	Expected Output	Screenshot Output
Load the file no searching	Select the file in the JFileChooser window	>>>>>The World: SeaPort: Lanshan 10000 Dock: Pier_4 20004 Ship: Passenger Ship: Absentmindedness 30004 Dock: Pier_0 20000 Ship: Passenger Ship: Gallinules 30000 Dock: Pier_1 20001 Ship: Passenger Ship: Remora 30001 Dock: Pier_3 20003 Ship: Passenger Ship: Preanesthetic 30003 Dock: Pier_2 20002 Ship: Passenger Ship: Shoetrees 30002 --- List of all ships in que:	

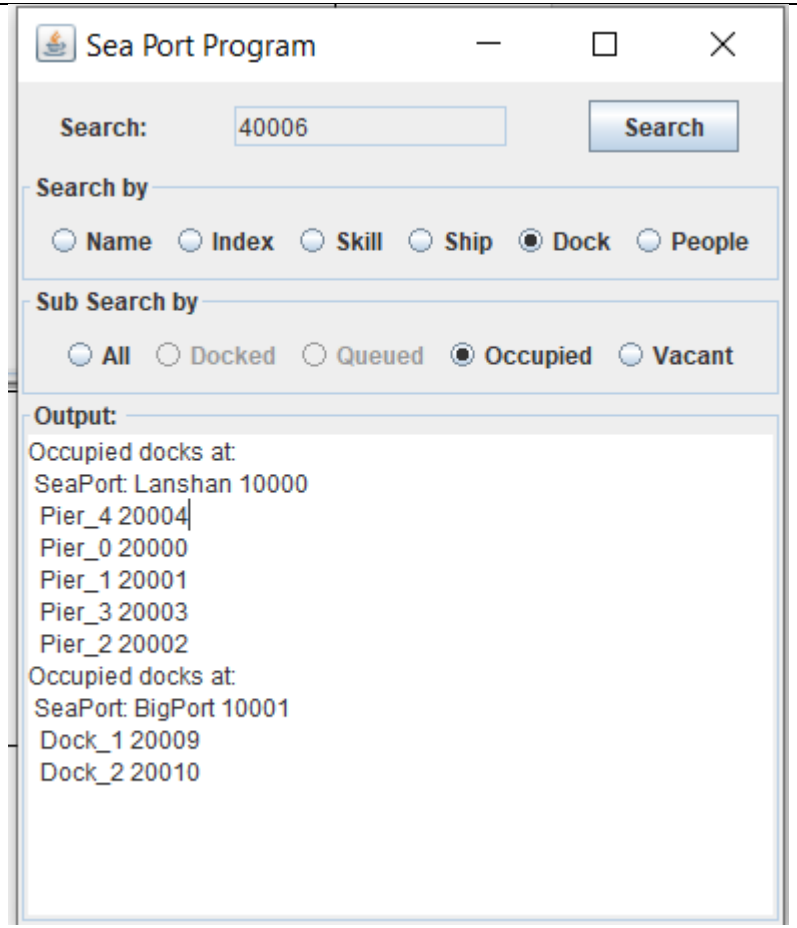
		> Cargo Ship: Erosional 40001 > Cargo Ship: Kielbasas 40000 > Cargo Ship: Generics 40002 > Cargo Ship: Barcelona 40003 > Cargo Ship: Toluene 40004 --- List of all ships: > Passenger Ship: Gallinules 30000 > Passenger Ship: Remora 30001 > Passenger Ship: Absentmindedness 30004 > Passenger Ship: Preanesthetic 30003 > Passenger Ship: Shoetrees 30002 > Cargo Ship: Erosional 40001 > Cargo Ship: Kielbasas 40000 > Cargo Ship: Generics 40002 > Cargo Ship: Barcelona 40003	

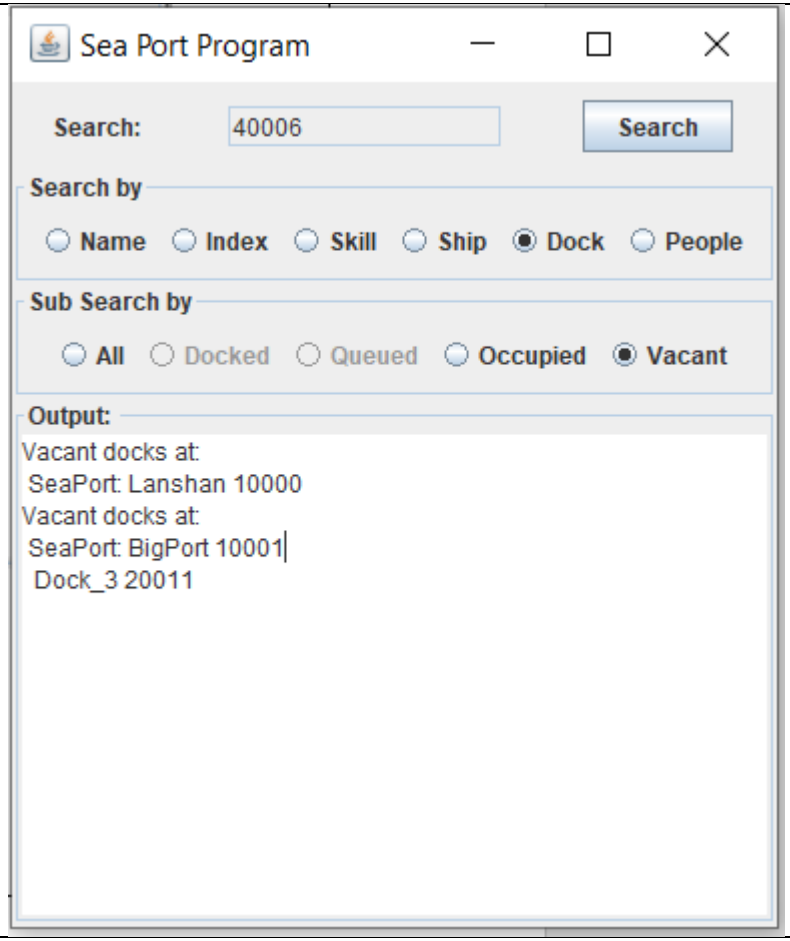
		> Cargo Ship: Toluene 40004 --- List of all persons: > Person: Sara 50000 electrician > Person: Duane 50002 inspector > Person: Betsy 50004 cleaner > Person: Archie 50003 captain > Person: Thomas 50001 clerk SeaPort: BigPort 10001 Dock: Dock_1 20009 Ship: Cargo Ship: PoopHauler 40005 Dock: Dock_2 20010 Ship: Cargo Ship: Willy 40006 Dock: Dock_3 20011 Vacant --- List of all ships in que: > Passenger Ship: Dumbledore 30005	

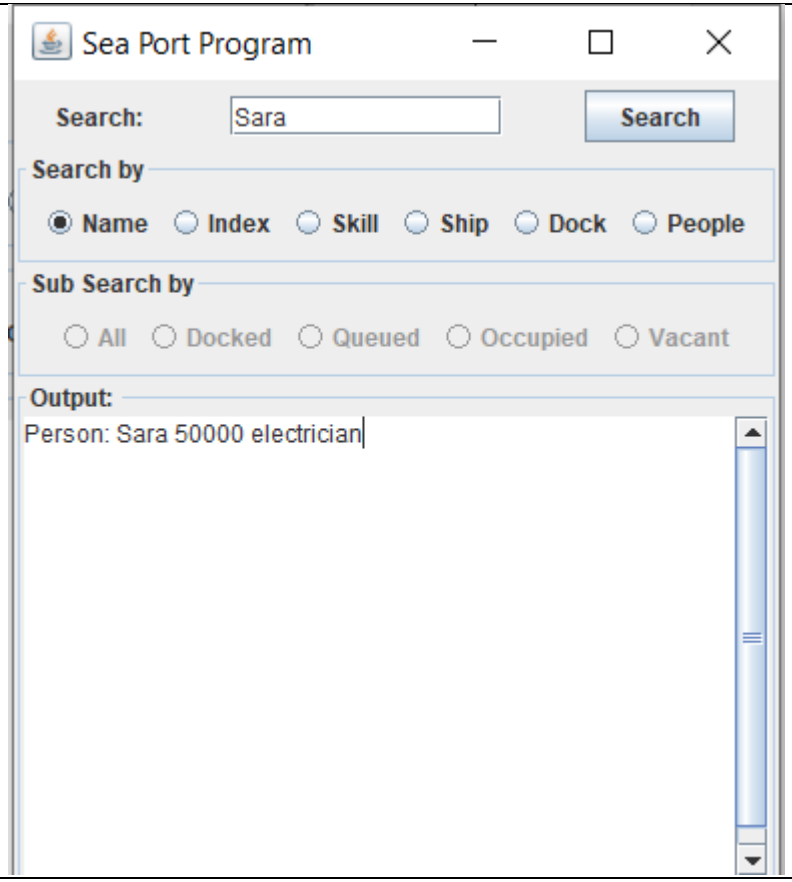
		--- List of all ships: > Passenger Ship: Dumbledore 30005 > Cargo Ship: PoopHauler 40005 > Cargo Ship: Willy 40006 --- List of all persons: > Person: George 50005 operations > Person: Tank 50006 destroying	

Search by index	Textfield = 40006 Radiobutton = index	Cargo Ship: Willy 40006	

Search for all docks, Occupied docks, vacant docks	RadioButton Dock and All checked	All docks at: SeaPort: Lanshan 10000 Pier_4 20004 Pier_0 20000 Pier_1 20001 Pier_3 20003 Pier_2 20002 All docks at: SeaPort: BigPort 10001 Dock_1 20009 Dock_2 20010 Dock_3 20011	

	RadioButton Dock and occupied checked	Occupied docks at: SeaPort: Lanshan 10000 Pier_4 20004 Pier_0 20000 Pier_1 20001 Pier_3 20003 Pier_2 20002 Occupied docks at: SeaPort: BigPort 10001 Dock_1 20009 Dock_2 20010	

	Radiobutton dock and vacant checked	Vacant docks at: SeaPort: Lanshan 10000 Vacant docks at: SeaPort: BigPort 10001 Dock_3 20011	

Search by name	Radiobutton Name checked and Sara in textfield	Person: Sara 50000 electrician	

4. Lessons Learned

   The only new things from this assignment were the JScrollPane and the JFileChooser. I probably could have incorporated some lambda functions. Especially with the actionlisteners. Unfortunately I had already created normal action listeners before seeing that. Maybe I will tweak that part for project two. JFileChooser was super handy though.

   I think my biggest issue with my implementation is the search functionality. It feels really clunky and involves a lot of different functions and a lot of lines of code. I am certain there is a better way to do it. I tried a couple of different methods.

One, my least favorite, is a series of function calls to deeper classes. For instance the SeaPortProgram will call a function in world which will call a program in SeaPort which will search the list in SeaPort. Method two is calling a function in World from SeaPortProgram which requests a copy of the needed list from the SeaPort class. That one allows for fewer functions I think but I am still not a big fan of it. I am probably missing an obvious solution. I think the next project involves different container classes. That might make searching easier/less of a hassle. I am looking forward to it.

There is definitely a lot more search functionality I could implement. I would probably use combo boxes if I added more. They allow for more options while taking up less space than radiobuttons. At some point I should do something with the other fields of the ship classes. Other than that I am fairly happy with my programs end product.

2.