Name: Ethan Huang

ID: 406244368

**Notable Obstacles:**

The hardest part of this project was figuring out how to do the display() function for PassengerOutputTable. It was difficult to figure out how to keep track of 3 values at once, but I decided on using a map to do it. I had to learn how to use std::pair in order to keep track of total and surviving values.

In addition, it was also difficult to process the CSV files. I took a lot of time to figure out how the data callback worked and how to implement it.

Besides this, I felt that this project was just very large. There were so many classes to handle and create, and it led to a lot of minor mistakes throughout.

**Test cases:**

PassengerOutputTable table(test.getPassengers());

table.setOutputField(Field::BYEMBARCATION);

table.display();

* Tests to see if program displays by embarcation

table.setOutputField(Field::BYFARE);

table.display();

* Tests to see if program displays by fare

table.setOutputField(Field::BYCLASS);

table.display();

* Tests to see if program displays by class

table.setOutputField(Field::NOVALUE);

table.display();

* Tests if the program works for all display types including a no-value one

assert( passenger.getName() == "Jack Dawson" );

assert( passenger.getClass() == Class::THIRD );

assert( passenger.getEmbarcation() == Embarcation::SOUTHHAMPTON );

assert( std::to\_string(passenger.getFare()) == "12.500000" );

assert( passenger.getSurvived() == false );

* This checks to see if all of getters and setters for passenger are working correctly

vector< Passenger \* > byclassdied = database.getPassengers\_byClass(Class::FIRST, false, -10.00);

* This checks the database function getPassengers\_byClass, should also repeat this with the other getPassengers\_ functions

row.setSurvived( 5 );

row.setTotal( 10 );

assert( row.getDescription() == "testing" );

assert( row.getSurvived() == 5 );

assert( row.getTotal() == 10 );

assert( std::to\_string(row.getPercentage()) == "0.500000" );

* Test the OutputRow class individually, make sure that getPercentage() works

row.setSurvived(0);

row.setTotal(0);

row.getPercentage();

* Tests what happens if the total is zero.

My program works for all of the above cases, I can’t think of anything that would cause it to fail.