**Spring 2018 CPSC 6119:** [**Object-Oriented Dev w/Components**](https://colstate.view.usg.edu/d2l/lp/ouHome/home.d2l?ou=1218642)

**System Manual for Term Project**

**Designer name: Lu Lin**

1. **Summary**

This manual provides a general overview of the system written in non-technical terminology. It includes two parts: part one is system general information, which, includes system overview; who are users/customers and what they can do with help of the system; and the contact information of the system designer. Part two indicates the system problem scopes and how to use it step by step. Simple examples are provided, the system outputs are highlighted in grey shade.

1. **General Information**
2. **System Overview.**

This application is designed for a local toy train factory, to help their customers build a train set. For each of toy train in this train collection, it can be customized according to customer’s requirements. When building train set is completed, the customer will get an estimate, and an instruction to test run trains will present to the customer, then he/she can test every train in his/her train set before purchase it.

1. **Users/Customers**

Anyone who is interested in purchasing a train set and would like to use this application to guide the purchase is the potential user and stakeholder. Most of train fans would like to diversify their choice when purchasing toy trains. With the help of this system the users can:

* customize every single train and get the price of the train
* build a set of train and get a total price of the train set
* test run every single train in the set and get their final coordinates in x-y axis plain at the end of testing

1. **Contact**

If you have any questions please contact the designer of the system at:

[lin\_lu@columbusstate.edu](mailto:lin_lu@columbusstate.edu)

1. **Using the System**

This system gives instruction to users when they open and run it. Follow instructions the users can input what they are asked and get corresponding output. The following steps indicate the scope of this system and how to use it.

1. When start running the system prints out statements as:

*“Now let's build your whole train set!*

*Would you like to build your first train? Input 'yes' if you do.”*

If user inputs ‘yes’ the system will next prompt the user to add some components to the first train, the choice of components includes fuel tender, brake tender, powered tender, and water cart.

*“The most basic train mode is one locomotive only!*

*Basic Train, the cost is $100*

*Enter what components you want to add to the train till input 'quit' to quit:”*

The user can add as many components as he/she wants till input ‘quit’ to indicate completion of his/her first train. Then this system calculates the price (the price of basic train plus the prices of components) and prints out a line of description of the train’s components and the price.

1. When complete the first train, the system prompts the user for other trains till he/she indicates no more trains.

*“Would you like to build another train? Input 'yes' if you do.”*

When the user input ‘yes’ the system will start from basic mode to build a new train:

*“The most basic train mode is one locomotive only!*

*Basic Train, the cost is $100*

*Enter what components you want to add to the train till input 'quit' to quit:”*

When the user is satisfied with the train set he/she would input ‘no’ or anything other than ‘yes’ to indicate no more trains to be added. The system then outputs statements and an estimate of total price for the train set:

*“Congratulations for your train set!*

*The estimate for your established train set is $”*

The total cost is printed after ‘$’, it is calculated by formula (n is the size of the train collection):

1. When the train set is completed, the system prints out statement and prompts the user for input of direction for the first train in the train set:

*“Start testing trains here... ... ...*

*Train No.1 original position is at x = 0 and y = 0.*

*Enter (left, right, up, down) to move the train till input 'quit' to quit:”*

After every input of (left, right, up, down) the system prints the train’s current position:

*“The train's current position is: x axis = and y axis = ”*

The x and y coordinates are printed after ‘=’. The start point is (0,0) in a x-y coordinate plain. When move towards right, x would add 1; when move towards left, x would minus 1; when move up, y would add 1, when move down, y would minus 1.

1. The system prompts user for input of (left, right, up, down) till he/she input ‘quit’, then it continues to prompt for the second train, the third train…in the train set till all trains are tested.