

Feature Story Steps for Test Driven Development

(derived from example in Barnes and Kolling, “Objects First With Java”)

Overall Problem:

Create a ticket machine for a transportation system (e.g. light rail in Minneapolis)

S1. A ticket machine can be created by specifying the cost of a ticket. The ticket machine can tell you the cost of a ticket on demand.

- Comment: The unit of money is the “dollar”. Partial units are not allowed. All tickets from a given machine cost the same.
- Comment: A ticket machine does not require a GUI at this time. It will be manipulated functionally (that is, by other code) for now.

S2. A user (that is, other code) can insert money into a ticket machine and the machine will keep track of how much money has been inserted.

S3. A ticket machine should be able to tell you how much has been collected for the current ticket.

S4. A ticket machine must be able to print tickets.

- Comment: Print directly, or return a ticket string and compare it
- Comment: Tickets are written to standard output as are other messages, including error messages

More Stories

S5. A ticket machine should be able to tell you how much money has been collected in total (for all tickets sold since the ticket machine was started).

S6. A ticket machine should be able to refund any balance for a given ticket before or after printing a ticket.

S7. A ticket machine should not issue a ticket unless sufficient money has been inserted. It should instead give a message stating insufficient funds and stating the amount lacking to the user.

S8. A ticket machine should complain (that is, display an error message) if you try to give it negative amounts of money.

S9. Management requires a total money report that contains the number of tickets sold and the total amount collected.

S10. First class fares have been implemented at twice the usual fare. Now we should permit printing first class tickets.

- Comment: The total money report should also be changed to itemize the number of regular and first class tickets sold, the total amount of money received in each category, and the overall total amount.

Future Stories

- Provide a GUI for the ticket machine with buttons for all functions except the total and get balance. It should use text fields for input and a text area in which to display the ticket and informational messages. It should show you the balance whenever you correctly insert money.
- Error messages should also be shown in the GUI text area.
- Create a second GUI for administrative functions such as getting the total money, resetting it to 0, etc.