Problem One – Retail Store

A retail store is trying to come up with app for its customers that can help customers browse products and create a cart with products that they wish to purchase.

List of products should be available in the app. The products available in app are:

Product	**Category**
Microwave oven	Electronics
Television	Electronics
Vacuum Cleaner	Electronics
Table	Furniture
Chair	Furniture
Almirah	Furniture

As part of initial release, the app should have the following features:

1. User should be able to view list of products grouped by categories.
2. User should be able to view details by selecting a product from list.
3. The product details includes an image, name and price of product.
4. Product details page should have a button to add the product to cart.
5. Cart displays a list of products along with its price.
6. Cart also displays the total price for all the products added.
7. User should be able to view cart at any time.
8. User should be able to navigate to product details from Cart as well.
9. User should be able to delete any product from the cart.
10. You can use external service to persist the data in the Cart or store it in cookies. For example, close the web page and reload it again, cart info shall still be there.
11. All the data needs to be stored and you can use a simple service to store those data in a file.

The app would be evaluated based on following criteria:

1. Compliance with platform specific guidelines.
2. Coding conventions and standards adhered to.
3. Simplicity and maintainability of the code

Enhanced visual appearance/beautification of app is not a criterion for evaluation of the app. Also adding more features will not earn you a better evaluation.

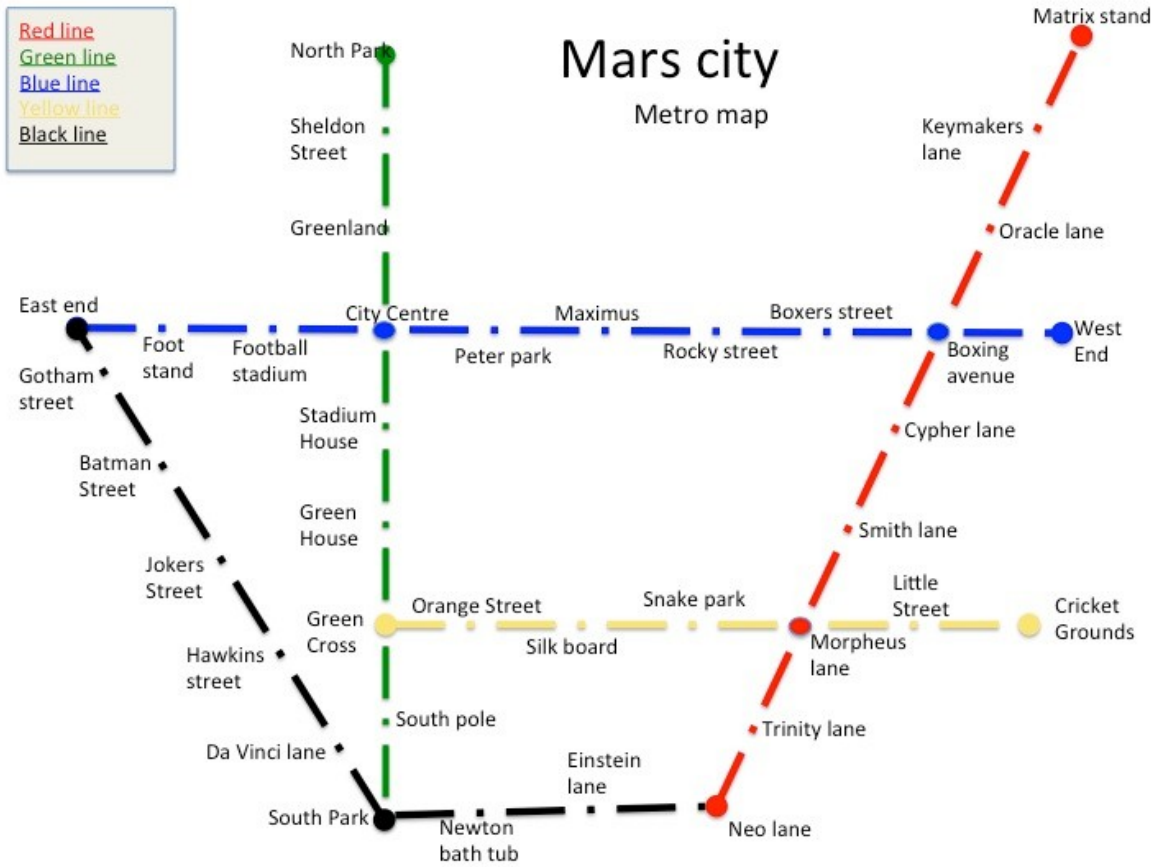
Problem Two - Easy Metro

Harvey Dent the mayor of Mars city has thrown open the newly built metro lines to the public. The metro connects all prominent places in the city. The metro consists of 5 lanes each indicated by the color as shown in the below map.

The stations are placed exactly 5 minutes away from each other. Ticket cost are calculated as 1$ for every station to destination (inclusive) and 1$ at stations where they switch line.

People find it difficult to find the fastest way to reach the destination and the cost of tickets that they need to buy.

Design a application that can help the tech savvy people of the Mars city so that they reach the destination in the minimal possible time and also display the cost.



The metro stations and the lines in order of the stations. Note the train moves in both the directions.

Blue Line – East end, Foot stand, Football stadium, City Centre, Peter Park, Maximus, Rocky Street, Boxers Street, Boxing avenue, West End.

Green Line – North Pole, Sheldon Street, Greenland, City Centre, Stadium House, Green House, Green Cross, South Pole, South Park

Red Line – Matrix Stand, Keymakers Lane, Oracle Lane, Boxing avenue, Cypher lane, Smith lane, Morpheus Lane, Trinity lane, Neo Lane.

Yellow line – Green Cross, Orange Street, Silk Board, Snake Park, Morpheus lane, Little Street, Cricket Grounds

Black line – East end, Gotham street, Batman street, Jokers street, Hawkins street, Da Vinci lane, South Park, Newton bath tub, Einstein lane, Neo lane.

Time between each station is 5 minutes.
Cost of ticket between each station is 1$.
Switching the line will cost 1$ extra.
Trains travel in both directions. The directions are identified by the end stations (for example a train moving north in red line is a train moving towards Matrix stand).

Examples

If I want to travel from East end to Peter Park then
Time it would take – 5 * 4 = 20 minutes.
Cost – 1 * 4 = 4 $
Path
Take blue line at East end going through Foot stand, Football stadium, City Centre to reach at City Centre.

If I want to travel from Green Cross to Neo Lane.
Time it would take = 5 * 5 = 25 minutes.
Cost = 5 * 1 + 1 (line change) = 6$.
Path
Take green line at Green cross moving towards south park, at south park change to black line and move towards Neo lane.

If you want to travel from Stadium house to East end
Time --- 4 * 5 = 20 mins
Cost – 4*1 + 1(line change at City centre) = 5$
Path
Take green line at Stadium House moving towards North Park. Get down at City centre and take Blue line moving towards East end.