Q.1.
index.html
```html
<html>
    <head>
        <title>Shopping List Application</title>
        <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">
        <link rel="stylesheet" href="css/shoppingstyle.css">
    </head>

<body>
</script>
    <div class="container">
        <nav class="navbar navbar-default">
            <div class="container-fluid">
            <div class="navbar-header">
                <a class="navbar-brand" href="#">Shopping List</a>
            </div>
            <ul class="nav navbar-nav">
                <li class="active"><a href="#">Home</a></li>
            </ul>
            </div>
        </nav>
      <div class="panel panel-default col-md-12">
        <div class="panel-body">
        <div class="row form-inline">

        <div class="form-group">
            <label for="itemname">Item Name</label>
            <input type=text class="form-control" name="itemname" id=itemname />
        </div>
        <div class="form-group">
        <label for="qty">Quantity</label>
        <select name="quantity" id="qty" class="form-control">
            <option value="1">1</option>
            <option value="2">2</option>
            <option value="3">3</option>
            <option value="4">4</option>
            <option value="5">5</option>
            <option value="6">6</option>
            <option value="7">7</option>
            <option value="8">8</option>
            <option value="9">9</option>
            <option value="10">10</option>
```

```html
          </select>
          </div>
          <div class="form-group">
          <label for="priority">Priority</label>
          <select name="priority" id="priority" class="form-control">
             <option value="low">low</option>
             <option value="medium">medium</option>
             <option value="high">high</option>
          </select>
       </div>
          </div>

          <div class="row form-inline" style="margin-top: 20px; margin-bottom: 20px;">
             <div class="form-group">
             <label for="store">Store Name</label>
             <select name="store" id="store" class="form-control">
             </select>
             </div>
             <div class="form-group">
             <label for="category">Store Section</label>
             <select name="category" id="category" class="form-control">
             </select>
             </div>
             <div class="form-group">
             <label for="price">Price</label>
             <input type="text" name="price" id="price" class="form-control">
             </div>
          </div>
          <div class="form-inline" style="float: right;">
          <button onclick="clickedon()" class="btn btn-primary" id=gobutt>Add Item</button>
          </div>
          </div>
       </div>
       <div class="col-md-12">
       <table class="table table-bordered">
          <thead>
             <tr>

<th></th><th>Item</th><th>Quantity</th><th>Store</th><th>Section</th><th>Price</th>
             </tr>
          </thead>
          <tbody id="shoppinglist"></tbody>
       </table>
       </div>
```
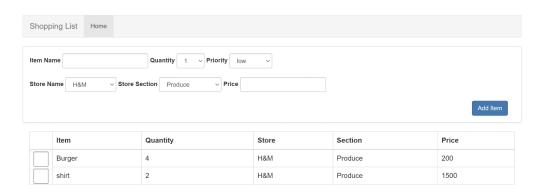
```
        </div>
        <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
        <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>
        <script src="model.js" type=text/javascript></script>
        <script src="view.js" type=text/javascript></script>
        <script src="controller.js" type=text/javascript></script>
    </body>
</html>

var stores = ['H&M', 'Amul', 'Kareems', 'Big Bazaar', 'L&T']
var sections = ['Produce', 'Meats', 'Cereal', 'Canned Goods', 'Frozen Foods', 'Dairy', 'Tools',
'Clothing']

function clickedon() {
    let rowcolids = ['itemname', 'qty', 'store', 'category', 'price']
    let vals = []
    for (let cid of rowcolids) {
        vals.push(document.getElementById(cid).value)
    }
    makeRow(vals, document.getElementById('shoppinglist'))
}

function makeRow(valueList, parent) {
    let row = document.createElement("tr")
    row.classList.add(document.getElementById("priority").value)
    let cb = document.createElement("input")
    cb.type = "checkbox"
    cb.classList.add("form-control")
    row.appendChild(cb)

    for (let val of valueList) {
        let td = document.createElement("td")
        td.innerHTML = val
        row.appendChild(td)
    }
    parent.appendChild(row)
}

function populateSelect(selectId, sList) {
    let sel = document.getElementById(selectId)
    for (let s of sList) {
        let opt = document.createElement("option")
        opt.value = s
        opt.innerHTML = s
```

```javascript
        sel.appendChild(opt)
    }
}

$(document).ready(function () {
    populateSelect('store', stores)
    populateSelect('category', sections)
})

class ShoppingView {
    constructor(model) {
        this.model = model;
        this.redrawList(this.model, 'init');
        model.subscribe(this.redrawList.bind(this))
    }

    redrawList(shoppingList, msg) {
        let tbl = document.getElementById("shoppinglist")
        tbl.innerHTML = ""
        for (let item of shoppingList.newItems) {
            this.addRow(item, tbl)
        }
    }

    addRow(item, parent) {
        let row = document.createElement("tr")
        row.classList.add(item.priority)
        let cb = document.createElement("input")
        cb.type = "checkbox"
        cb.classList.add("form-control")
        cb.onclick = function() { item.purchased = true; }
        row.appendChild(cb)

        for (let val of ['name', 'quantity', 'store', 'section', 'price']) {
            let td = document.createElement("td")
            td.innerHTML = item[val]
            row.appendChild(td)
        }
        parent.appendChild(row)
    }
}

'use strict';
class Item {
```

```javascript
  constructor(name, quantity, priority, store, section, price) {
    this.name = name;
    this.quantity = quantity;
    this.priority = priority;
    this.store = store;
    this.section = section;
    this.price = price;

    this._purchased = false;

  }

  get purchased() {
    return this._purchased;
  }

  set purchased(nv) {
    this._purchased = nv;
    alert(`${this.name} was purchased`)
  }


}

class Subject {

  constructor() {
    this.handlers = []
  }

  subscribe(fn) {
      this.handlers.push(fn);
    }

  unsubscribe(fn) {
    this.handlers = this.handlers.filter(
      function(item) {
        if (item !== fn) {
          return item;
        }
      }
    );
  }
```

```
    publish(msg, someobj) {
        var scope = someobj || window;
        for (let fn of this.handlers) {
            fn(scope, msg)
        }
    }
}


class ShoppingList extends Subject {
    constructor() {
        super()
        this.newItems = JSON.parse(localStorage.getItem('shoppingList')) || []
        this.oldItems = [];
    }

    addItem(it) {
        this.newItems.push(it)
        this.publish('newitem', this)
        localStorage.setItem('shoppingList', JSON.stringify(this.newItems))
    }
}
```

Shopping List	Home

Item Name		Quantity	1 ∨	Priority	low ∨
Store Name	H&M ∨	Store Section	Produce ∨	Price	

Add Item

	Item	Quantity	Store	Section	Price
☐	Burger	4	H&M	Produce	200
☐	shirt	2	H&M	Produce	1500

Q.2
```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
```

```html
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Page Access Counter</title>
</head>
<body>
<h1>Page Access Counter</h1>
<p>You have accessed this page <span id="counter">0</span> times.</p>

<script>
    let counter = localStorage.getItem('pageAccessCounter') || 0;
    document.getElementById('counter').textContent = counter;
    counter++;
    localStorage.setItem('pageAccessCounter', counter);
</script>
</body>
</html>
```

Page Access Counter

You have accessed this page 4 times.