

HTML

Additem.html:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Title</title>
  <link rel="stylesheet"
href="http://code.jquery.com/mobile/1.4.5/jquery.mobile.structure-
1.4.5.min.css" />
  <script src="http://code.jquery.com/jquery-1.11.1.min.js"
type="text/javascript"></script>
  <script src="http://code.jquery.com/mobile/1.4.3/jquery.mobile-
1.4.3.min.js" type="text/javascript"></script>
  <script
src="../../CostManagerProject/CostManager/CostManager.js"></script>
  <script
src="../../CostManagerProject/CostManager/Item.js"></script>
</head>
<body>
  <script>
    $(document).ready(function () {

      window.CostManager.clearDb = function () {
        window.CostManager.clearItems(true);
        window.CostManager.clearCategories(true);
        window.CostManager.clearIds(true);
      }

      window.CostManager.testAddItem = function() { //tests
addItem
        window.CostManager.clearDb();
        var size =
window.CostManager.getItems(true).length;
        var vec =window.CostManager.getItems(true);

        try{
window.CostManager.addItem("title","description","category",-5,2,true);
        }
        catch (e) {
          if(e.toString().valueOf() != "Amount must be
greater than 0".valueOf()){
            console.log("addItem not working");
            return;
          }
        }

        window.CostManager.addItem("title","description","category",5,3,true);
        if(vec.length = size +1){
          console.log("addItem is working");
        }
      }
    }
  </script>

```

```

        else{
            console.log("addItem not working");
        }
    }

};

window.CostManager.testFindItem = function () { //test
findItem
    window.CostManager.clearDb();

window.CostManager.addItem("title","description","category",5,3,true);
    var item1 = window.CostManager.findItem(60,true);
    if(item1 != undefined){
        console.log("findItem is not working");
        return;
    }
    var item2 = window.CostManager.findItem(0,true);
    if(item2.name == "title" && item2.description ==
"description" && item2.category == "category"&& item2.amount == 5&&
item2.price == 3){
        console.log("findItem is working")
    }
    else {
        console.log("findItem is not working")
    }
}

window.CostManager.testEditItem =function(){ //test editItem
    window.CostManager.clearDb();

window.CostManager.addItem("title","description","category",5,3,true);
    var date = new Date();

window.CostManager.updateItem(0,"title2","description2","category2",date,5,3,true);
    var item = window.CostManager.getItems(true)[0];
    if(item.name == "title2" && item.description ==
"description2" && item.category == "category2"){
        console.log("updateItem is working");
    }
    else{
        console.log("updateItem is not working");
    }
}

};

window.CostManager.testGetItemsPerMonth = function () { //test
getItemsPerMonth
    window.CostManager.clearDb();

window.CostManager.addItem("title1","description1","category1",2,3,true

```

```

);

window.CostManager.addItem("title2","description2","category2",6,1,true);

window.CostManager.addItem("title3","description3","category3",8,3,true);

window.CostManager.addItem("title4","description4","category4",5,9,true);

        var date1 = new Date();
        date1.setMonth(3);
        var date2 = new Date();
        date1.setMonth(5);

window.CostManager.updateItem(0,"title1","description1","category1",date1,2,3,true);

window.CostManager.updateItem(1,"title2","description2","category2",date1,6,1,true);

window.CostManager.updateItem(2,"title3","description3","category3",date2,8,3,true);

window.CostManager.updateItem(3,"title4","description4","category4",date1,5,9,true);

        var items =
window.CostManager.getItemsPerMonth(3,true);
        if(items.length == 3){
            console.log("getItemsPerMonth is working");
        }
        else{
            console.log("getItemsPerMonth is working");
        }
    };

    window.CostManager.testAddCategory = function () { //tset
addCategory

        window.CostManager.clearDb();
        var size =
window.CostManager.getCategories(true).length;
        window.CostManager.addCategory("category",true);
        var categories =
window.CostManager.getCategories(true);
        if(categories.length == size +1){
            console.log("addCategory is working");
        }
        else {
            console.log("addCategory is not working");
        }
    }

    window.CostManager.testGetCategoryAmount = function ()
{ //getCategoryAmount
        window.CostManager.clearDb();

window.CostManager.addItem("title1","description1","category1",2,3,true

```

```
);  
  
window.CostManager.addItem("title2","description2","category1",6,1,true  
);  
  
window.CostManager.addItem("title3","description3","category2",8,3,true  
);  
  
window.CostManager.addItem("title4","description4","category1",5,9,true  
);  
  
        var amount =  
window.CostManager.getCategoryAmount("category1",true);  
        if(amount == 3){  
            console.log("getCategoryAmount is working");  
        }  
        else {  
            console.log("getCategoryAmount is not working");  
        }  
    }  
  
    window.CostManager.testAddItem();  
    window.CostManager.testFindItem();  
    window.CostManager.testEditItem();  
    window.CostManager.testGetItemsPerMonth();  
    window.CostManager.testAddCategory();  
    window.CostManager.testGetCategoryAmount();  
  
    })  
  
    </script>  
</body>  
</html>
```

Edititem.html:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <link rel="stylesheet" href="themes/theme1.min.css" />
  <link rel="stylesheet" href="themes/jquery.mobile.icons.min.css" />
  <link rel="stylesheet"
href="http://code.jquery.com/mobile/1.4.5/jquery.mobile.structure-
1.4.5.min.css" />
  <script src="http://code.jquery.com/jquery-1.11.1.min.js"></script>
  <script src="http://code.jquery.com/mobile/1.4.3/jquery.mobile-
1.4.3.min.js"></script>
  <script src="CostManager.js"></script>
  <script src="Item.js"></script>
  <title>ToDo List</title>
</head>
<body>
<style>
  #errorMsg {
    color: red;
    text-align: center;
  }
</style>
<div data-role="page" id="home">
  <div data-role="header">
    <h1>Cost Manager Project</h1>
  </div>
  <div data-role="content">
    <form>
      <h2 id="errorMsg" color=red></h2>

      title: <input type="text" id="title"/>
      <br/>
      description: <input type="text" id="description"/>
      <br/>
      select category:
      <br/>
      <select id="category-select" name="category">
        <option value="" selected disabled hidden></option>
      </select>
      new category: <input type="text" id="newCategory">
      <br/>
      <label for="date">Start date:</label>
      <input type="date" id="date" name="trip-start"
placeholder="dd-mm-yyyy">
      <br/>
      amount: <input type="number" id="amount"/>
      <br/>
      price: <input type="number" id="price"/>
      <br/>
      <input type="button" value="Save Item" id="save" />
      <input type="button" value="Back" id="back" />
      <br/>
      <div id="message"></div>
```

```

        </form>

    </div>
    <script>

        var data = localStorage.getItem("item_id");//get id of selected
item
        var itemId = data;
        window.CostManager.loadUI = function () {
            if(data!=null){//load selected item to ui
                let item = window.CostManager.findItem(data);
                localStorage.removeItem("item_id")
                var title = document.getElementById("title").value;
                var description =
document.getElementById("description").value;
                var amount = document.getElementById("amount").value;
                var price = document.getElementById("price").value;

                document.getElementById("title").value = item.name;
                document.getElementById("description").value =
item.description;
                document.getElementById("amount").value = item.amount;
                document.getElementById("price").value = item.price;

                var jsonDataForCategory =
window.CostManager.getCategories();
                for (var field in jsonDataForCategory) {
                    $('<option value="'+ jsonDataForCategory[field]
+'">' + jsonDataForCategory[field] + '</option>').appendTo('#category-
select');
                }
                //set category selector values
                var options = document.getElementById("category-
select").options;
                for ( var i = 0; i < options.length; i++) {
                    if (options[i].value.toString().valueOf() ==
item.category.toString().valueOf()) {
                        options[i].selected = true;
                        break;
                    }
                }
                document.getElementById("date").valueAsDate = new
Date(item.year,item.month-1,item.day+1);

            }
        }
        window.CostManager.loadUI();

        window.CostManager.handleSaveButtonClick = function() { //save
edited item button

```

```

        var ob = {};
        var title = document.getElementById("title").value;
        var description =
document.getElementById("description").value;
        var selector = document.getElementById("category-select")
        var category =
selector.options[selector.selectedIndex].value;
        var amount = document.getElementById("amount").value;
        var price = document.getElementById("price").value;
        var date = new Date($('#date').val());
        if(title != "" && description != "" && amount != "" && price
!= "") {
            if(category.toString().valueOf() == "New
Category"){//check if new category is selected
                category =
document.getElementById("newCategory").value;
            }
            if(category.toString().valueOf() == ""){//category
field is empty
                document.getElementById("errorMsg").innerHTML =
"You need to select category";
                return;
            }
            document.getElementById("errorMsg").innerHTML = "";
            try {

window.CostManager.updateItem(itemId,title,description,category,date,am
ount,price);//update item in db
            }
            catch (exception){
                document.getElementById("errorMsg").innerHTML =
exception;//print error message
            }
        }

        window.CostManager.handleBackButtonClick = function (){//back
button
            location.href = "showitems.html";
        }

document.getElementById("back").addEventListener("click",window.CostMan
ager.handleBackButtonClick);
        document.getElementById("save").addEventListener("click",
window.CostManager.handleSaveButtonClick);

        window.CostManager.handleCategorySelect = function (){//disable
and enable the new category field
            var selector = document.getElementById("category-select")
            var selectedCategory =
selector.options[selector.selectedIndex].value;
            if(selectedCategory == "New Category"){
                document.getElementById("newCategory").disabled =
false;

```

```
        }
        else {
            document.getElementById("newCategory").disabled = true;
        }

        window.CostManager.addCategory(selectedCategory);

    }

    document.getElementById("category-
select").addEventListener('change', window.CostManager.handleCategorySel
ect)

    $(document).ready(function() {
        document.getElementById("newCategory").disabled = true;

    });

</script>
<div data-role="footer">
    <h4>    </h4>
</div>
</div>
</body>
</html>
```


Itemschart:

```
<!DOCTYPE html>
<html>
<head>
  <title>todo list</title>
  <link rel="stylesheet" href="themes/theme1.min.css" />
  <link rel="stylesheet" href="themes/jquery.mobile.icons.min.css" />
  <link rel="stylesheet"
href="http://code.jquery.com/mobile/1.4.5/jquery.mobile.structure-
1.4.5.min.css" />
  <script src="http://code.jquery.com/jquery-1.11.1.min.js"
type="text/javascript"></script>
  <script src="http://code.jquery.com/mobile/1.4.3/jquery.mobile-
1.4.3.min.js" type="text/javascript"></script>
  <script src="CostManager.js"></script>
  <script src="Item.js"></script>
</head>
<body>
<div data-role="page" id="home">
  <div data-role="header" >
    <h1>Cost Manager Project</h1>
  </div>
  <div data-role="content">
    <a href="showitems.html" data-ajax="false" data-role="button"
data-inline="true" >show items</a>

  </div>
  <h2 id="errorMsg" color=red></h2>
  <label for="startDate">Start date:</label>
  <input type="date" id="startDate" name="trip-start">
  <label for="endDate">End date:</label>
  <input type="date" id="endDate" name="trip-end">
  <br/>
  <input type="button" value="Filter chart" id="filterBtn"/>
  <input type="button" value="Reset chart" id="resetFilterBtn"/>
  <br/>
  <div data-role="footer">
    <h4>    </h4>
  </div>
  <div id="piechart"></div>

  <script type="text/javascript"
src="https://www.gstatic.com/charts/loader.js"></script>
</div>
<script type="text/javascript">
  // Load google charts
  google.charts.load('current', {'packages':['corechart']});
  google.charts.setOnLoadCallback(drawChart);

  // Draw the chart and set the chart values
  function drawChart() {
    var dataArray = [['Category','Purches Amount']];
    var categories = window.CostManager.getCategories();
    for (var n=0; n < categories.length; n++) {
      var amount =
```

```

parseInt(window.CostManager.getCategoryAmount(categories[n]))
    dataArray.push ([categories[n]+" total cost:
"+window.CostManager.getCostPerCategory(categories[n]), amount ])
    }
    // set chart properties
    var options = {'title':'My purchases', 'width':200,
'height':200,left:20,top:0,width:'75%',height:'75%'};

    var data = new
google.visualization.arrayToDataTable(dataArray);
    var chart = new
google.visualization.PieChart(document.getElementById('piechart'));
    chart.draw(data, options);
    }
    window.CostManager.handleFilterButtonClick = function(){//redraw
chart with filtered dates
    var startDate = new Date($('#startDate').val());
    var endDate = new Date($('#endDate').val());
    startDate.setHours(0,0,0,0);
    endDate.setHours(0,0,0,0);
    if(startDate <= endDate){
        document.getElementById("errorMsg").innerHTML = "";
        var filteredItems =
window.CostManager.filterDates(startDate,endDate);
        var dataArray = [['Category','Purchases Amount']];
        var categories = window.CostManager.getCategories();
        for (var n =0; n < categories.length; n++) {
            var amount =
parseInt(window.CostManager.getCategoryAmountByDate(categories[n],start
Date,endDate))
            dataArray.push ([categories[n]+" total cost:
"+window.CostManager.getCostPerCategoryByDate(categories[n],startDate,e
ndDate), amount ])
            }
            // set chart properties
            var options = {'title':'My purchases', 'width':200,
'height':200,left:20,top:0,width:'75%',height:'75%'};

            var data = new
google.visualization.arrayToDataTable(dataArray);
            var chart = new
google.visualization.PieChart(document.getElementById('piechart'));
            chart.draw(data, options);
        }
        else {
            document.getElementById("errorMsg").innerHTML = "Start date
must be less then end date";
        }
    }

    document.getElementById("filterBtn").addEventListener("click",
window.CostManager.handleFilterButtonClick);

    window.CostManager.resetFilter = function (){//redraw chart without
filtered dates

```

```
document.getElementById("errorMsg").innerHTML = "";

var dataArray = [['Category', 'Purchases Amount']];
var categories = window.CostManager.getCategories();
for (var n=0; n < categories.length; n++) {
    var amount =
parseInt(window.CostManager.getCategoryAmount(categories[n]))
    dataArray.push ([categories[n]+" total cost:
"+window.CostManager.getCostPerCategory(categories[n]), amount ])
}
// set chart properties
var options = { 'title': 'My purchases', 'width': 200,
'height': 200, left: 20, top: 0, width: '75%', height: '75%' };

var data = new
google.visualization.arrayToDataTable(dataArray);
var chart = new
google.visualization.PieChart(document.getElementById('piechart'));
chart.draw(data, options);
}
document.getElementById("resetFilterBtn").addEventListener("click",
window.CostManager.resetFilter);
</script>
</body>
</html>
```

Showitems.html:

```
<!DOCTYPE html>
<html>
<head>
  <title>todo list</title>
  <link rel="stylesheet" href="themes/theme1.min.css" />
  <link rel="stylesheet" href="themes/jquery.mobile.icons.min.css" />
  <link rel="stylesheet"
href="http://code.jquery.com/mobile/1.4.5/jquery.mobile.structure-
1.4.5.min.css" />
  <script src="http://code.jquery.com/jquery-1.11.1.min.js"
type="text/javascript"></script>
  <script src="http://code.jquery.com/mobile/1.4.3/jquery.mobile-
1.4.3.min.js" type="text/javascript"></script>
  <script src="CostManager.js"></script>
  <script src="Item.js"></script>
</head>
<body>
<div data-role="page" id="home">
  <div data-role="header">
    <h1>Cost Manager Project</h1>
  </div>

  <div data-role="content" >

    <a href="additem.html" data-ajax="false" data-role="button"
data-inline="true" data-rel = "dialog" >add item</a>
    <br/>
    <a href="itemschart.html" data-ajax="false" data-role="button"
data-inline="true">items chart</a>
    <form>
      <h2 id="errorMsg" color=red></h2>
      filter month: <input type="number" min="1" max="12"
id="filter"/>
      <br/>
      <input type="button" value="Filter list" id="filterBtn"/>
      <input type="button" value="ResetFilter"
id="resetFilterBtn"/>
      <br/>
    </form>
    <ul data-role="listview" id="list">
    </ul>
  </div>

  <div data-role="footer">
    <h4> </h4>
  </div>
</div>
<script type="text/javascript">
  $(document).ready(function () {
    (
      window.CostManager.initializeList = function() {
        document.getElementById("errorMsg").innerHTML = "";

        var list = document.getElementById('list');
```

```

        var myList = $('#list');
        myList.empty();

        //load items into the list
        var vec = window.CostManager.getItems();
        vec.forEach(
            function (ob) {
                var item = new Item(ob);
                var li = document.createElement("li");
                var a = document.createElement("a");
                var text = document.createTextNode(item.name);
                var description =
document.createTextNode(item.description);
                description.fontSize = "10px"
                a.appendChild(text);
                a.appendChild(document.createElement("br"))
                a.appendChild(description);
                a.setAttribute("href", "#");
                li.appendChild(a);
                li.onclick = function () {
                    localStorage.setItem("item_id", item.myId);
                    location.href = "edititem.html?";
                }
                list.appendChild(li);
            }
        );

        myList.listview().listview('refresh');

    })();

    window.CostManager.handleFilterButtonClick =
function(){//filter button
    var month = document.getElementById("filter").value;
    if(month > 0 && month < 13){
        document.getElementById("errorMsg").innerHTML = "";
        var list = document.getElementById('list');
        var myList = $('#list');

        myList.empty();

        var vec =
window.CostManager.getItemsPerMonth(document.getElementById("filter").v
alue);//load items from db by selected month
        vec.forEach(
            function (ob) {
                var item = new Item(ob);
                var li = document.createElement("li");
                var a = document.createElement("a");
                var text = document.createTextNode(item.name);
                var description =
document.createTextNode(item.description);
                description.fontSize = "10px"
                a.appendChild(text);
                a.appendChild(document.createElement("br"))
                a.appendChild(description);
                a.setAttribute("href", "#");

```

```

        li.appendChild(a);
        li.onclick = function () {
            localStorage.setItem("item_id", item.myId);
            location.href = "edititem.html"
        }
        list.appendChild(li);
    }
};

myList.listview().listview('refresh');
}
else {
    document.getElementById("errorMsg").innerHTML = "Month
must be between 1 to 12";
}

}
document.getElementById("filterBtn").addEventListener("click",
window.CostManager.handleFilterButtonClick);

window.CostManager.handleResetButtonClick = function () {

}

document.getElementById("resetFilterBtn").addEventListener("click",
window.CostManager.initializeList);
}))

</script>
</body>
</html>

```

Javascript

Item.js:

```
class Item
{
    //class properites
    #name;
    #description;
    #category;
    #amount;
    #price;
    #day;
    #month;
    #year;
    //static id;
    #myId;

    //constructor
    constructor(obj,isTest,name, description,category,amount,price,day,
month,year) {
        if(arguments.length >2){//normal constructor
            var idIndex;
            if(isTest){
                idIndex = localStorage.getItem("id_indexTest");
            }
            else {
                idIndex = localStorage.getItem("id_index");
            }

            if(idIndex == null){
                idIndex = 0;
                this.myId = idIndex;
            }
            else {
                idIndex++;
                this.myId = idIndex;
            }
            if(isTest){//check if test so test won't override db
                localStorage.setItem("id_indexTest",idIndex);
            }
            else {
                localStorage.setItem("id_index",idIndex);
            }

            this.#name = name;
            this.#description = description;
            this.#category = category;
            this.#amount = amount;
            this.#price = price;
            this.#day = day;
```

```

        this.#month = month;
        this.#year = year;

    }
    else { //copy constructor
        obj && Object.assign(this, obj);
    }
}

//getters and setters
get name(){
    return this.#name;
}

set name(name) {
    this.#name = name;
}

get description(){
    return this.#description;
}

set description(description){
    this.#description = description;
}

get category(){
    return this.#category;
}

set category(category){
    this.#category = category;
}

get amount(){
    return this.#amount;
}

set amount(amount){
    this.#amount = amount;
}

get price(){
    return this.#price;
}

set price(price){
    this.#price = price;
}

get day(){
    return this.#day;
}

```



```

    }

    set day(day) {
        this.#day = day;
    }

    get month() {
        return this.#month;
    }

    set month(month) {
        this.#month = month;
    }

    get year() {
        return this.#year;
    }

    set year(year) {
        this.#year = year;
    }

    get myId() {
        return this.#myId;
    }

    set myId(id) {
        this.#myId = id;
    }

    toJSON() {
        return {
            name: this.#name,
            description: this.#description,
            category: this.#category,
            amount: this.#amount,
            price: this.#price,
            day: this.#day,
            month: this.#month,
            year: this.#year,
            myId: this.#myId
        }
    }

    fromJson() {
    }
}

```

CostManager.js

```
window.CostManager = {};  
  
window.CostManager.CostManagerException = function (msg){  
}  
  
window.CostManager.addItem = function(title, description, category,  
amount, price, isTest) { //add item to db  
    //check input  
    if(amount <=0){  
        throw "Amount must be greater then 0";  
    }  
    if(!Number.isInteger(parseFloat(amount))){  
        throw "Amount must be whole number";  
    }  
    if(price <=0){  
        throw "price must be greater then 0";  
    }  
    var date = new Date();  
    var day = date.getDate();  
    var month = date.getMonth() +1;  
    var year = date.getFullYear();  
    category = category.toString();  
    ob = new  
Item(undefined,isTest,title,description,category,amount,price,day,month  
,year);  
    window.CostManager.addCategory(category);  
    if(isTest){ //check if test so test won't override db  
        var data = localStorage.getItem("todoTest");  
  
    }  
    else{  
        var data = localStorage.getItem("todo");  
  
    }  
  
    if(data==null) {  
        // running the application for the first time  
        var arrayOfObjects = [];  
        arrayOfObjects.push(ob);  
        var text = JSON.stringify(arrayOfObjects);  
        if(isTest){  
            localStorage.setItem("todoTest", text);  
        }  
        else {  
            localStorage.setItem("todo", text);  
        }  
    }  
    } else {  
        // the data already exists in the local storage  
        var arrayOfObjects = JSON.parse(data);  
        arrayOfObjects.push(ob);  
        var text = JSON.stringify(arrayOfObjects);  
        if(isTest){ //check if test so test won't override db  
            localStorage.setItem("todoTest", text);  
        }  
    }  
}
```

```

        }
        else{
            localStorage.setItem("todo", text);
        }
    }

};

window.CostManager.getItems = function(isTest) { //get item from db
    if(isTest){ //check if test so test won't override db
        var data = localStorage.getItem("todoTest");

    }
    else{
        var data = localStorage.getItem("todo");
    }
    if(data==null) {
        return [];
    } else {
        var result = JSON.parse(data);
        return result;
    }
}

window.CostManager.getItemsPerMonth = function (month, isTest){ //get
all items from month
    var items = [];
    var vec = window.CostManager.getItems(isTest); //get all items
    var i = 0;
    vec.forEach(
        function (ob) { //check if same month
            if(ob.month == month){
                items[i] = ob;
                i++;
            }
        }
    );
    return items;
}

window.CostManager.findItem = function (id, isTest){ //get specific item
by id
    var vec = window.CostManager.getItems(isTest);
    var foundItem;
    vec.forEach(
        function (ob){
            if(ob.myId == id){
                foundItem = ob;
            }
        }
    );
}

```

```

    }
    )
    return foundItem;
}

window.CostManager.updateItem = function (id, name, description,
category, date, amount, price, isTest){//change existing item
    //check input is valid
    if(amount <=0){
        throw "Amount must be greater then 0";
    }
    if(!Number.isInteger(parseFloat(amount))){
        throw "Amount must be whole number";
    }
    if(price <=0){
        throw "price must be greater then 0";
    }
    var vec = window.CostManager.getItems(isTest);
    category = category.toString();
    window.CostManager.addCategory(category,isTest);
    var i = 0;

    vec.forEach(
        function (ob){
            if(ob.myId == id){

                vec[i].name = name;
                vec[i].description = description;
                vec[i].category = category;
                vec[i].amount = amount;
                vec[i].price = price;
                vec[i].year = date.getFullYear();
                vec[i].month = date.getMonth() +1;
                vec[i].day = date.getDate();

                var text = JSON.stringify(vec);
                if(isTest){//check if test so test won't override db
                    localStorage.removeItem("todoTest")
                    localStorage.setItem("todoTest",text);
                }
                else {
                    localStorage.removeItem("todo")
                    localStorage.setItem("todo",text);
                }

                return;
            }
            i++;
        }
    )
}

window.CostManager.getCategories = function (isTest){//get all
categories

```

```

        if(isTest){
            var data = localStorage.getItem("categoriesTest");
        }
        else{
            var data = localStorage.getItem("categories");
        }
        if(data==null) {
            return ["New Category"];
        } else {
            var result = JSON.parse(data);
            return result;
        }
    }
}

window.CostManager.addCategory = function(category, isTest){//add
category to db
    var categories = window.CostManager.getCategories(isTest);
    var found = false;
    categories.forEach(function (ob) {
        if(ob.toString().toUpperCase().valueOf() ==
category.toString().toUpperCase().valueOf()){
            found = true;
        }
    })
    if(found){
        return;
    }

    categories.push(category);
    var text = JSON.stringify(categories);
    if(isTest){
        localStorage.setItem("categoriesTest", text);
    }
    else {
        localStorage.setItem("categories", text);
    }
}

window.CostManager.getCategoryAmount = function (category,
isTest){//get amount of items from specific category
    var count = 0;
    var items = window.CostManager.getItems(isTest);
    items.forEach(
        function (ob) {
            if(ob.category == category){
                count++;
            }
        }
    );
    return count;
}

window.CostManager.filterDates = function (startDate, endDate,
isTest){//get all items from range of dates
    var items = window.CostManager.getItems(isTest);
    var filteredItems = [];

```

```

        items.forEach(
            function (ob) {
                var itemDate = new Date(ob.year,ob.month,ob.day);
                if(startDate <= itemDate && itemDate <=endDate){
                    filteredItems.push(ob);
                }
            }
        );
        return filteredItems;
    }

    window.CostManager.getCategoryAmountByDate = function (category,
    startDate, endDate, isTest){//get amount of items from specific
    category in specific range
        var count = 0;
        var items = window.CostManager.getItems(isTest);
        items.forEach(
            function (ob) {
                var itemDate = new Date(ob.year,ob.month-1,ob.day);
                if(ob.category == category && startDate <= itemDate &&
itemDate <=endDate){
                    count++;
                }
            }
        );
        return count;
    }

    window.CostManager.clearItems = function (isTest){//clear all items
    from db
        if(isTest){//check if test so test won't override db
            localStorage.removeItem("todoTest");
        }
        else{
            localStorage.removeItem("todo");
            //localStorage.setItem("todo",null);
        }
    }

    window.CostManager.clearCategories = function (isTest){//clear all
    categories from db
        if(isTest){//check if test so test won't override db
            localStorage.removeItem("categoriesTest");
            //localStorage.setItem("categoriesTest",null);
        }
        else{
            localStorage.removeItem("categories");
            //localStorage.setItem("categories",null);
        }
    }

    window.CostManager.clearIds = function (isTest){//clear all ids from db
        if(isTest){//check if test so test won't override db
            localStorage.removeItem("id_indexTest");

```

```

        //localStorage.setItem("categoriesTest",null);
    }
    else{
        localStorage.removeItem("id_index");
        //localStorage.setItem("categories",null);
    }
}

window.CostManager.getCostPerCategory = function (category,
isTest){//get total of item costs in category
    var items;
    if(isTest){//check if test so test won't override db
        items = window.CostManager.getItems(true);
        //items =
window.CostManager.filterDates(startDate,endDate,true)
    }
    else{
        items = window.CostManager.getItems();
        //items = window.CostManager.filterDates(startDate,endDate);
    }
    if(items != null){
        var costSum = 0;
        for(var i = 0; i < items.length; i++){
            var ob = items[i];
            if(ob.category.toString().toUpperCase().valueOf() ==
category.toString().toUpperCase().valueOf()){
                costSum = costSum + (parseInt(ob.amount) *
parseFloat(ob.price));
            }
        }

        return costSum;
    }
}

window.CostManager.getCostPerCategoryByDate = function
(category,startDate,endDate, isTest){//get total of item costs in
category
    var costSum = 0;
    var items = window.CostManager.getItems(isTest);
    items.forEach(
        function (ob) {
            var itemDate = new Date(ob.year,ob.month-1,ob.day);
            if(ob.category == category && startDate <= itemDate &&
itemDate <=endDate){
                costSum = costSum + (parseInt(ob.amount) *
parseFloat(ob.price));
            }
        }
    );
    return costSum;
}

```

Tests

costmanagertests.html:

```
window.CostManager = {};  
  
window.CostManager.CostManagerException = function (msg){  
}  
  
window.CostManager.addItem = function(title, description, category,  
amount, price, isTest) { //add item to db  
    //check input  
    if(amount <=0){  
        throw "Amount must be greater then 0";  
    }  
    if(!Number.isInteger(parseFloat(amount))){  
        throw "Amount must be whole number";  
    }  
    if(price <=0){  
        throw "price must be greater then 0";  
    }  
    var date = new Date();  
    var day = date.getDate();  
    var month = date.getMonth() +1;  
    var year = date.getFullYear();  
    category = category.toString();  
    ob = new  
Item(undefined,isTest,title,description,category,amount,price,day,month  
,year);  
    window.CostManager.addCategory(category);  
    if(isTest){ //check if test so test won't override db  
        var data = localStorage.getItem("todoTest");  
  
    }  
    else{  
        var data = localStorage.getItem("todo");  
  
    }  
  
    if(data==null) {  
        // running the application for the first time  
        var arrayOfObjects = [];  
        arrayOfObjects.push(ob);  
        var text = JSON.stringify(arrayOfObjects);  
        if(isTest){  
            localStorage.setItem("todoTest", text);  
        }  
        else {  
            localStorage.setItem("todo", text);  
        }  
    }  
    } else {  
        // the data already exists in the local storage  
        var arrayOfObjects = JSON.parse(data);
```



```

        arrayOfObjects.push(ob);
        var text = JSON.stringify(arrayOfObjects);
        if(isTest){//check if test so test won't override db
            localStorage.setItem("todoTest", text);
        }
        else{
            localStorage.setItem("todo", text);
        }
    }

};

window.CostManager.getItems = function(isTest) { //get item from db
    if(isTest){//check if test so test won't override db
        var data = localStorage.getItem("todoTest");
    }
    else{
        var data = localStorage.getItem("todo");
    }
    if(data==null) {
        return [];
    } else {
        var result = JSON.parse(data);
        return result;
    }
}

window.CostManager.getItemsPerMonth = function (month, isTest){ //get
all items from month
    var items = [];
    var vec = window.CostManager.getItems(isTest); //get all items
    var i = 0;
    vec.forEach(
        function (ob) { //check if same month
            if(ob.month == month){
                items[i] = ob;
                i++;
            }
        }
    );
    return items;
}

window.CostManager.findItem = function (id, isTest){ //get specific item
by id
    var vec = window.CostManager.getItems(isTest);
    var foundItem;
    vec.forEach(

```

```

        function (ob) {
            if (ob.myId == id) {
                foundItem = ob;
            }
        }
    )
    return foundItem;
}

window.CostManager.updateItem = function (id, name, description,
category, date, amount, price, isTest) { //change existing item
    //check input is valid
    if (amount <= 0) {
        throw "Amount must be greater than 0";
    }
    if (!Number.isInteger(parseFloat(amount))) {
        throw "Amount must be whole number";
    }
    if (price <= 0) {
        throw "price must be greater than 0";
    }
    var vec = window.CostManager.getItems(isTest);
    category = category.toString();
    window.CostManager.addCategory(category, isTest);
    var i = 0;

    vec.forEach(
        function (ob) {
            if (ob.myId == id) {

                vec[i].name = name;
                vec[i].description = description;
                vec[i].category = category;
                vec[i].amount = amount;
                vec[i].price = price;
                vec[i].year = date.getFullYear();
                vec[i].month = date.getMonth() + 1;
                vec[i].day = date.getDate();

                var text = JSON.stringify(vec);
                if (isTest) { //check if test so test won't override db
                    localStorage.removeItem("todoTest")
                    localStorage.setItem("todoTest", text);
                }
                else {
                    localStorage.removeItem("todo")
                    localStorage.setItem("todo", text);
                }

                return;
            }
            i++;
        }
    )
}

```

```

window.CostManager.getCategories = function (isTest){//get all
categories
    if(isTest){
        var data = localStorage.getItem("categoriesTest");
    }
    else{
        var data = localStorage.getItem("categories");
    }
    if(data==null) {
        return ["New Category"];
    } else {
        var result = JSON.parse(data);
        return result;
    }
}

window.CostManager.addCategory = function(category, isTest){//add
category to db
    var categories = window.CostManager.getCategories(isTest);
    var found = false;
    categories.forEach(function (ob){
        if(ob.toString().toUpperCase().valueOf() ==
category.toString().toUpperCase().valueOf()){
            found = true;
        }
    })
    if(found){
        return;
    }

    categories.push(category);
    var text = JSON.stringify(categories);
    if(isTest){
        localStorage.setItem("categoriesTest", text);
    }
    else {
        localStorage.setItem("categories", text);
    }
}

window.CostManager.getCategoryAmount = function (category,
isTest){//get amount of items from specific category
    var count = 0;
    var items = window.CostManager.getItems(isTest);
    items.forEach(
        function (ob) {
            if(ob.category == category){
                count++;
            }
        }
    );
    return count;
}

```

```

window.CostManager.filterDates = function (startDate, endDate,
isTest){//get all items from range of dates
    var items = window.CostManager.getItems(isTest);
    var filteredItems = [];
    items.forEach(
        function (ob) {
            var itemDate = new Date(ob.year,ob.month,ob.day);
            if(startDate <= itemDate && itemDate <=endDate){
                filteredItems.push(ob);
            }
        }
    );
    return filteredItems;
}

window.CostManager.getCategoryAmountByDate = function (category,
startDate, endDate, isTest){//get amount of items from specific
category in specific range
    var count = 0;
    var items = window.CostManager.getItems(isTest);
    items.forEach(
        function (ob) {
            var itemDate = new Date(ob.year,ob.month-1,ob.day);
            if(ob.category == category && startDate <= itemDate &&
itemDate <=endDate){
                count++;
            }
        }
    );
    return count;
}

window.CostManager.clearItems = function (isTest){//clear all items
from db
    if(isTest){//check if test so test won't override db
        localStorage.removeItem("todoTest");
    }
    else{
        localStorage.removeItem("todo");
        //localStorage.setItem("todo",null);
    }
}

window.CostManager.clearCategories = function (isTest){//clear all
categories from db
    if(isTest){//check if test so test won't override db
        localStorage.removeItem("categoriesTest");
        //localStorage.setItem("categoriesTest",null);
    }
    else{
        localStorage.removeItem("categories");
        //localStorage.setItem("categories",null);
    }
}

```

```

window.CostManager.clearIds = function (isTest){//clear all ids from db
    if(isTest){//check if test so test won't override db
        localStorage.removeItem("id_indexTest");
        //localStorage.setItem("categoriesTest",null);
    }
    else{
        localStorage.removeItem("id_index");
        //localStorage.setItem("categories",null);
    }
}

window.CostManager.getCostPerCategory = function (category,
isTest){//get total of item costs in category
    var items;
    if(isTest){//check if test so test won't override db
        items = window.CostManager.getItems(true);
        //items =
window.CostManager.filterDates(startDate,endDate,true)
    }
    else{
        items = window.CostManager.getItems();
        //items = window.CostManager.filterDates(startDate,endDate);
    }
    if(items != null){
        var costSum = 0;
        for(var i = 0; i < items.length; i++){
            var ob = items[i];
            if(ob.category.toString().toUpperCase().valueOf() ==
category.toString().toUpperCase().valueOf()){
                costSum = costSum + (parseInt(ob.amount) *
parseFloat(ob.price));
            }
        }

        return costSum;
    }
}

window.CostManager.getCostPerCategoryByDate = function
(category,startDate,endDate, isTest){//get total of item costs in
category
    var costSum = 0;
    var items = window.CostManager.getItems(isTest);
    items.forEach(
        function (ob) {
            var itemDate = new Date(ob.year,ob.month-1,ob.day);
            if(ob.category == category && startDate <= itemDate &&
itemDate <=endDate){
                costSum = costSum + (parseInt(ob.amount) *
parseFloat(ob.price));
            }
        }
    );
};

```

```
    return costSum;  
}
```