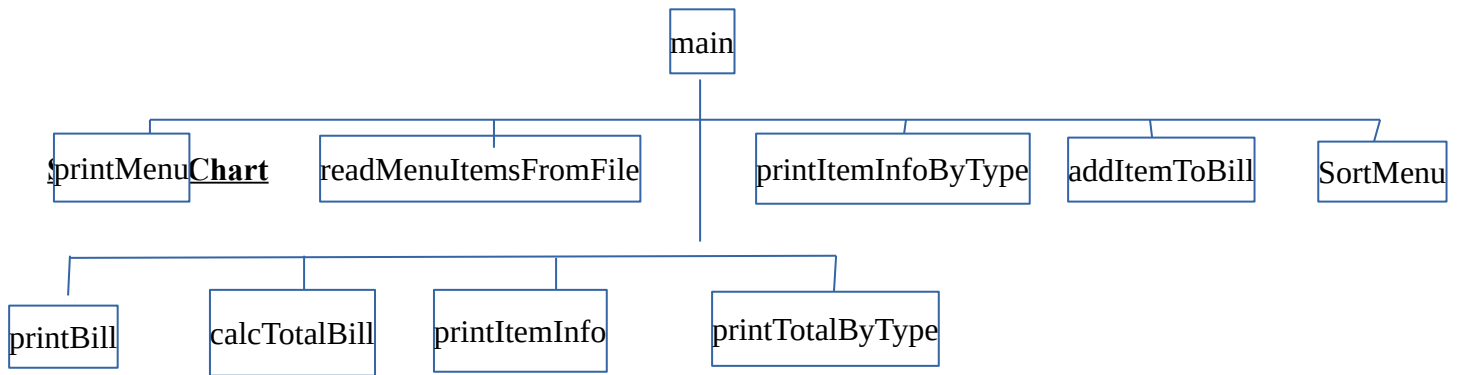


## CSC 250 – Program Design Document



### Function Design (give the prototype and a short description for each function)

```
struct MenuItem {string name; ItemType type; float cost; int qty;}; //qty used for revenue  
//logs and quantity ordered
```

```
struct Check {float total; float tax; float tip;}; //used to store calculated check costs
```

```
int printMenu(const string[], int, string &); // prints the given menu to the screen, with  
//n options, and prompts the user using string[n], stores input in string, returns  
// {-1=invalid, 0=string, 1=int}
```

```
int readMenuItemsFromFile(vector<MenuItem> &); //reads the menuitems from the file  
//taco menu.txt
```

```
//and stores them in the given array
```

```
void printItemInfoByType(vector<MenuItem>, ItemType); // menu option 1 - prints the item  
//info of all the items matching the given itemtype
```

```
void printItemInfo(MenuItem, bool, bool); // prints the info of the given menuitem, only  
//prints itemType and qty if specified
```

```
void addItemToBill(vector<MenuItem> &, MenuItem); //asks user for quantity and adds the  
//given item(s) to the vector
```

```
int searchItems(vector<MenuItem>, MenuItem[], string); //searches the first array for the  
//given string and fills the second array with the results, returns the quantity of items  
//stored in results
```

```
void printTotalCost(vector<MenuItem>); // prints the total cost of the items in the array
```

```
void printBill(vector<MenuItem> &, vector<MenuItem> &, bool); //prints the bill, if final  
//fills array with revenue logs and clears bill
```

```
void printTotalByType(vector<MenuItem>, ItemType); // calculates the total cumulative sales  
//of the given item type
```

```
void calcTotalBill(MenuItem[], int, Check &); // calculates the total cost and tax/tip of  
//items in the array and fill the Check with it
```

```
void sortMenu(vector<MenuItem> &); // selection sorts the menu by itemType  
// {entrees, drinks, desserts}
```

### Time Estimate

	Estimated Time	Actual Time
Program Design	<u>20</u>	<u>17</u>
(list each function name and the time required to code each)		
<u>printMenu</u>	<u>5</u>	<u>16</u>
<u>readMenuItemsFromFile</u>	<u>10</u>	<u>8</u>
<u>printItemInfoByType</u>	<u>10</u>	<u>6</u>
<u>printItemInfo</u>	<u>5</u>	<u>4</u>
<u>addItemToBill</u>	<u>5</u>	<u>6</u>
<u>searchItems</u>	<u>10</u>	<u>12</u>
<u>printTotalCost</u>	<u>5</u>	-----
<u>printBill</u>	<u>15</u>	<u>7</u>
<u>printTotalByType</u>	<u>10</u>	<u>8</u>
<u>calcTotalBill</u>	<u>5</u>	<u>3</u>
<u>sortMenu</u>	-----	<u>3</u>
<u>vectorization</u>	-----	<u>+12</u>
Program Test	<u>15</u>	<u>20+6</u>
Total Time	<u>115</u>	<u>110+18 = 128</u>