CSC 250 – Program Design Document

```
                              main
      ┌──────────┬───────────────┼────────────┬────────────┐
  printMenu  readMenuItemsFromFile  printItemInfoByType  addItemToBill  printTotalCost
   Chart
      ┌───────────┬──────────────┬───────────────┐
  printBill   calcTotalBill   printItemInfo   printTotalByType
```
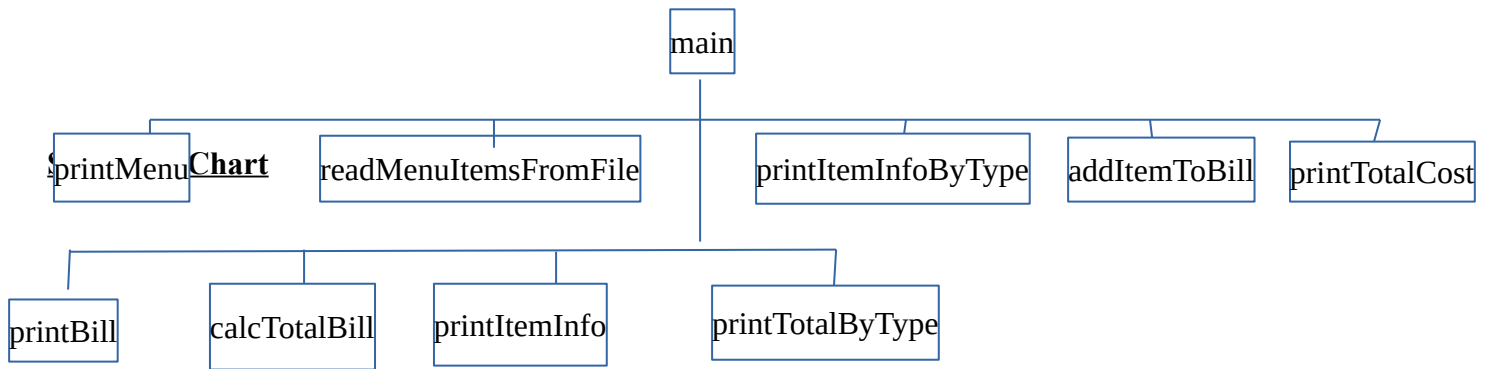
Function Design (give the prototype and a short description for each function)

```
struct Bill {float total; float tax; float tip;};

int printMenu(const string[], int, string &); // prints the int sized string array to the
//screen, stores user input in the string, and returns 0→ string, 1→ int, -1→ invalid
//input
int readMenuItemsFromFile(MenuItem []); //reads the menuItems from the file taco_menu.txt
//and stores them in the given array
void printItemInfoByType(MenuItem [], ItemType); // menu option 1 - prints the item info
//of all the items matching the given itemtype
void printItemInfo(MenuItem); // prints the info of the given menuitem
void addItemToBill(MenuItem[], vector<MenuItem>, int); // add the menuItem at the given
index          //to the given position in the bill (menu,bill,index)
               // also increments cumultiveSales of menuItems
void searchItems(MenuItem[], MenuItem[], string);//searches the first array for the given
string and fills the second array with the results
void printTotalCost(MenuItem[]); // prints the total cost of the items in the array
void printBill(MenuItem[], vector<MenuItem>); // finalizes the sale, prints the bill and
clears all selections
void printTotalByType(MenuItem[], ItemType); // calculates the total cumulative sales of
//the given item type
void calcTotalBill(MenuItem[], Bill &); // calculates the total cost and tax/tip of items
//in the array and fill the Bill with it
```

Time Estimate

	Estimated Time	Actual Time
Program Design	**20**	

(list each function name and the time required to code each)		
printMenu	**5**	
readMenuItemsFromFile	**10**	
printItemInfoByType	**10**	
printItemInfo	**5**	
addItemToBill	**5**	
searchItems	**10**	
printTotalCost	**5**	
printBill	**15**	
printTotalByType	**10**	
calcTotalBill	**5**	
Program Test	**15**	
Total Time	**115**	