**Function main**

***Input:*** fileName, productList[145][4], shoppingCart[145][2], productExists, rowFound, customerInfo[5]

***Processing:*** count

***Output:*** N/A

***Algorithm***

1. If function readFile = true

Display “If you would like to continue to checkout, enter 0.”

For (count=0, count < 145, count++)

Set shoppingCart to function productPurchase

If shoppingCart =0

Display “name”

Get customerInfo[0]

Display “street address”

Get customerInfo[1]

Display “city”

Get customerInfo[2]

Display “state”

Get customerInfo[3]

Display “zip code”

Get customerInfo[4]

Break loop

Set productExists to function searchProduct

If productExists = false

Output “product does not exist

Else If productExists = true

Output “how many of the item would you like”

Set shoppingCart to input from user

While function quanitityProduct =false

Display “reenter quantity”

Set shoppingCart to input from user

**Function readFile:** reads file from productData.csv and stores the data in a 2D array

***Parameters:*** productList[145][4], inputFileName

***Processing:*** inFile, row

***Output:*** int

***Return type:*** int

***Algorithm***

1. Open inputFile Name
2. If fstream does not open

Return 0

Else

Seek 2nd line of file

Do

Set productList[row][1] first item of file

Set productList[row][2] second item of file

Set productList[row][3] third item of file

Set productList[row][4] fourth item of file

Increase row++

Set productList[row][1] first item of following line

While row < 145 AND !end of file

1. Close file
2. Return int

**Function productPurchase:** asks the user which product they would like to purchase and return the product number

***Parameters****:* none

***Processing:*** productNumber

***Output:*** productNumber

***Return type:*** int

**Algorithm**

1. Get productNumber
2. Set productNumber
3. Return productNumber

**Function searchProduct:** searches for the product number in the array containing data from ProductData.csv

***Parameters:*** productList[145][4]***,*** shoppingCart[145][4]***,*** cartNumber***,*** rowFound by reference

***Processing:*** productExists

***Output:*** productExists

***Return type:*** Bool

***Algorithm***

1. For (row=0, row <145, row++)

If shoppingCart[cartNumber][row]!=productList[row][0]

Set productExists to false

Else

Set productExists to true

Output product Number and product Cost

Set row to rowFound

Return productExists

1. Return productExists

**Function quantatityProduct:** checks if the quantity being purchased is available and adds it to the shopping cart

***Parameters:*** productList[145][4], shoppingCart[145][4], cartNumber, rowFound by reference

***Processing:*** quantityExists

***Output:*** quantityExists

***Return type:*** Bool

***Algorithm***

1. If shoppingCart[cartNumber][1]> productList[rowFound] []

Set quantityExists to false

Else

Set productExsists to ture

Display “Item has been added to shopping cart”

Return quanitityExists

1. Return quantityExists

**Function displayInvoice:** displays the final invoice statement to a text file and the console

***Parameters:*** customerInfo[5], productList[145][4], shoppingCart[145][4], cartNumber

**Processing:** counter, row, outFile, total

***Output:*** int

***Return type:*** int

***Algorithm***

1. Open outFile “Invoice.txt”
2. If ofstream does not open

Return 0

Else

Output customerInfo to console

Display “item number, item name, qty, unit cost, total” to console

Output customerInfo to outFile

Outupue “item number, item name, qty, unit cost, total” to outFile

For (counter=0, counter< cartNum, counter++)

For (row=0, row< cartNum, row++)

If shoppingCart = productList

Set total to shoppingCart[countNumber][0]\*productList[row][0]

Output productList[row][0] item number to console

Output productList[row][1] product name to console

Output unit cost= shoppingCart[counter][1]\*productList[row][2] to consle

Output total to console

Output productList[row][0] item number to outFile

Output productList[row][1] product name to outFile

Output unit cost= shoppingCart[counter][1]\*productList[row][1] to outFile

Output total to outFile

Output final total value to console

Output final total value to outFile

1. Return int