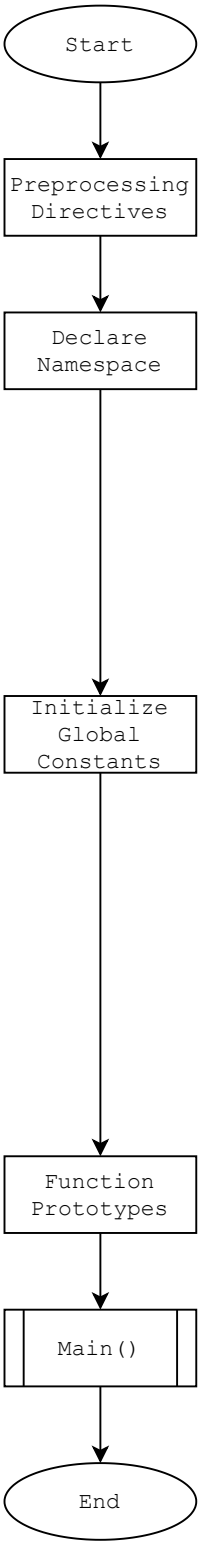
Weston Gibson
w1421760 Project 1
CISP 360 LEC 11442




```
#include <iostream>
#include <iomanip>
#include <string>
#include <fstream>
#include <limits>
```

```
using namespace std;

const string BREAK = "****************************************\n";

const string CITIES[] = {
  "Sacramento",
  "San Francisco",
  "Portland",
  "Orlando",
  "Los Angeles",
  "Exit Application" };

const string HEADERS[] = {
  "City Name...................: ",
  "Standard Mile Cost..........: ",
  "Weekend Rate................: ",
  "Flat Rate Cost..............: ",
  "Flat Rate Time..............: ",
  "Flat Rate Max Free Miles....: ",
  "Flat Rate Stop Time Allowed: ",
  "Discount Day................: ",
  "Discount Time...............: ",
  "Discount Amount.............: " };

const int CITIES_LENGTH = *(&CITIES + 1) - CITIES;

const string CITYFILE = "CityNames.dat";
const string RATEFILE = "CityTaxiRates.dat";
```

```
string DisplayCityMenu(int&);
void CityMenu();
bool IsValidCity(string, string, int&);
bool GetCityData(string, int, int&, int&, int&, \
  double&, double&, double&, double&, double&, double&);
```

```
int main() {
  see Main tab
}
```

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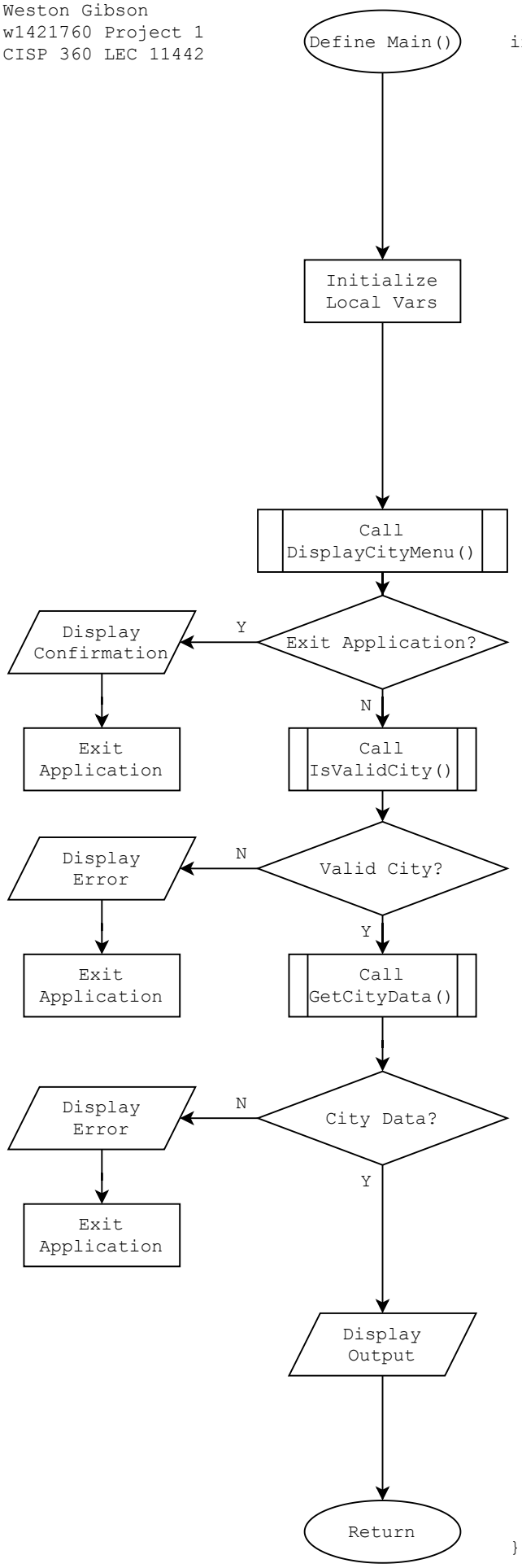
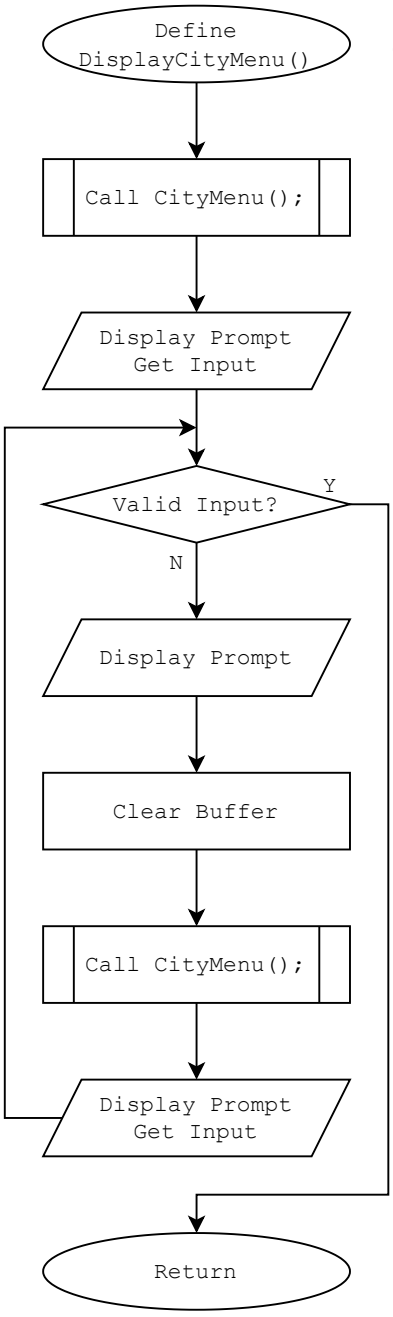
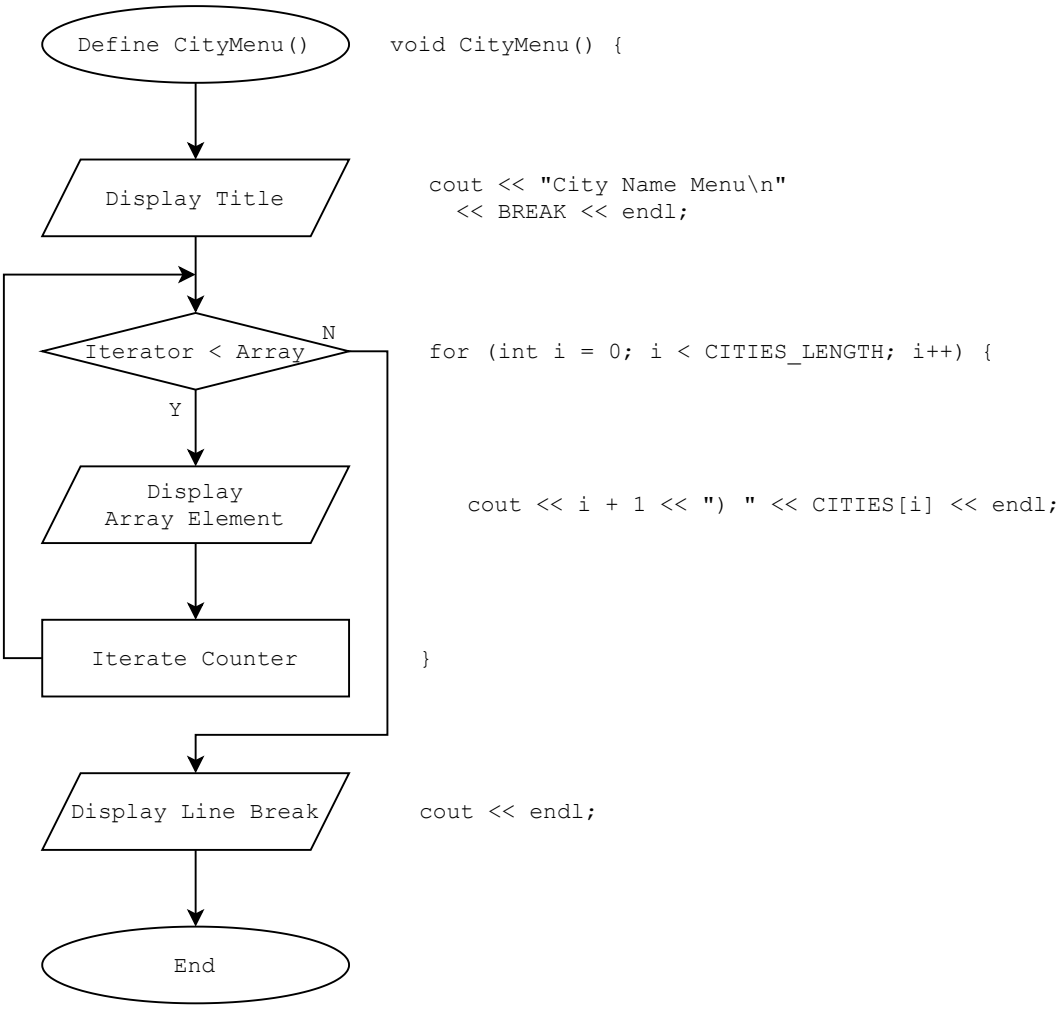



```
int main() {

   string cityName;

   bool
     validCity = false,
     cityData = false;

   int
     selection = 0,
     filePosition = 0,
     flatRateTime = 0,
     discountDay = 0,
     discountTime = 0;

   double
     perMileStandard = 0.00,
     perMileWeekend = 0.00,
     flatRateCost = 0.00,
     flatRateFree = 0.00,
     flatRateStop = 0.00,
     discountAmount = 0.00;

   cityName = DisplayCityMenu(selection);


   if (cityName == "Exit Application") {
     cout << endl
       << "User exited the application successfully.\n";
     exit(0);
   }


   validCity = IsValidCity(CITYFILE, cityName, filePosition);


   if (validCity == false) {
     cout << endl
       << "Error: City not found: " << cityName << endl;
     exit(0);
   }

   cityData = GetCityData(RATEFILE, filePosition, \
     flatRateTime, discountDay, discountTime, \
     perMileStandard, perMileWeekend, flatRateCost, \
     flatRateFree, flatRateStop, discountAmount);

   if (cityData == false) {
     cout << endl
       << "Error: Rate data not found for city: "
       << cityName << endl;
     exit(0);
   }
   cout << fixed << setprecision(2);

   cout << "\nTaxi Cab Rates\n"
     << BREAK
     << HEADERS[0] << cityName << endl
     << HEADERS[1] << perMileStandard << endl
     << HEADERS[2] << perMileWeekend << endl
     << HEADERS[3] << flatRateCost << endl
     << HEADERS[4] << flatRateTime << endl
     << HEADERS[5] << flatRateFree << endl
     << HEADERS[6] << flatRateStop << endl
     << HEADERS[7] << discountDay << endl
     << HEADERS[8] << discountTime << endl;
     << HEADERS[9] << discountAmount << endl;
   return(0);
}
```




```
string DisplayCityMenu(int& selection) {
    CityMenu();
    cout << "Please select a city: ";
    cin >> selection;
    while (selection < 1 || selection > CITIES_LENGTH || cin.fail()) {
        cout << endl
          << "Please only use one of the numbers provided." << endl;
        cin.clear();
        cin.ignore(numeric_limits<streamsize>::max(), '\n');
        CityMenu();
        cout << "Please select a city: ";
        cin >> selection;
    }
    return CITIES[selection - 1]
}
```


Define CityMenu()
void CityMenu() {
Display Title
cout << "City Name Menu\n"
<< BREAK << endl;
Iterator < Array
N
for (int i = 0; i < CITIES_LENGTH; i++) {
Y
Display
Array Element
cout << i + 1 << ") " << CITIES[i] << endl;
Iterate Counter
}
Display Line Break
cout << endl;
End

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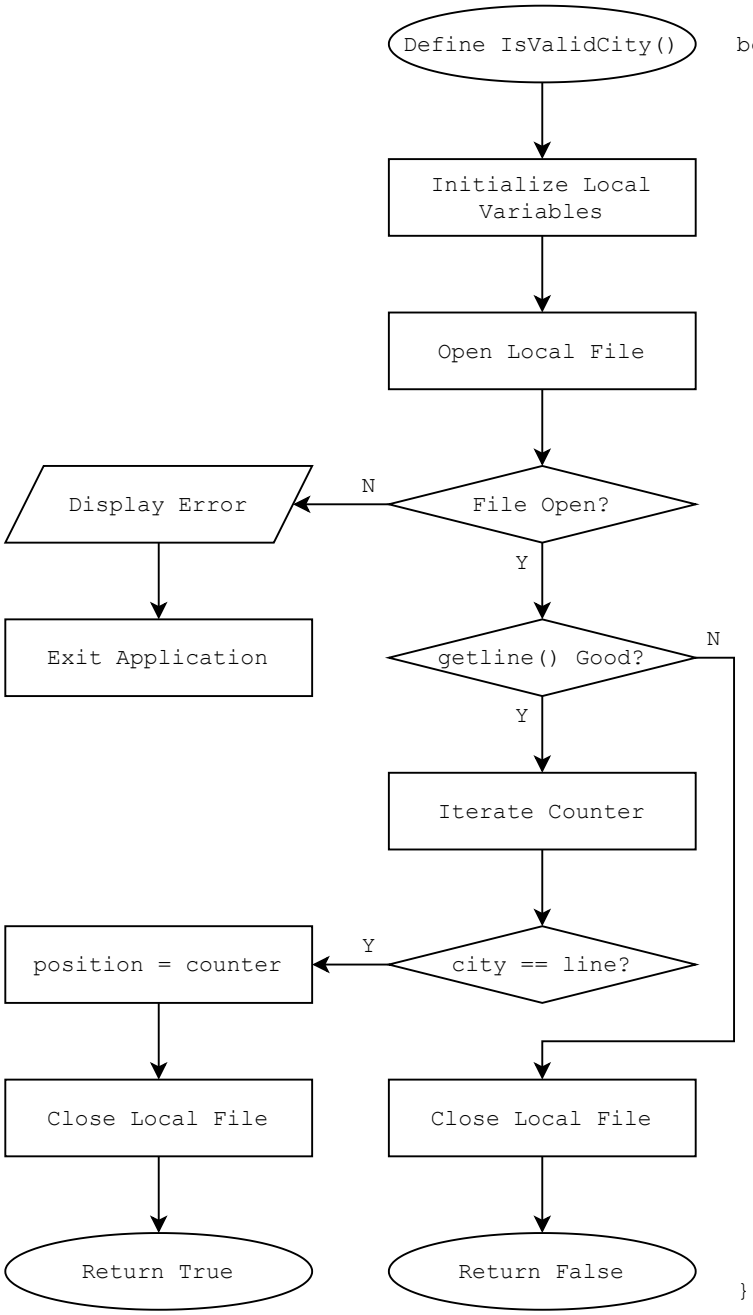


```
bool IsValidCity(string file, string city, int& position) {
   int counter = 0;
   string line;

   ifstream inFile(file);

   if (!inFile.is_open()) {
     cout << "City data file not found.\n"
       << endl << "File not found: " << file;
     exit(0);
   }

   while (getline(inFile, line)) {

      counter++;

      if (city== line) {
        position = counter;
        inFile.close();
        return true;
      }

   }
   inFile.close()

   return false;
}
```

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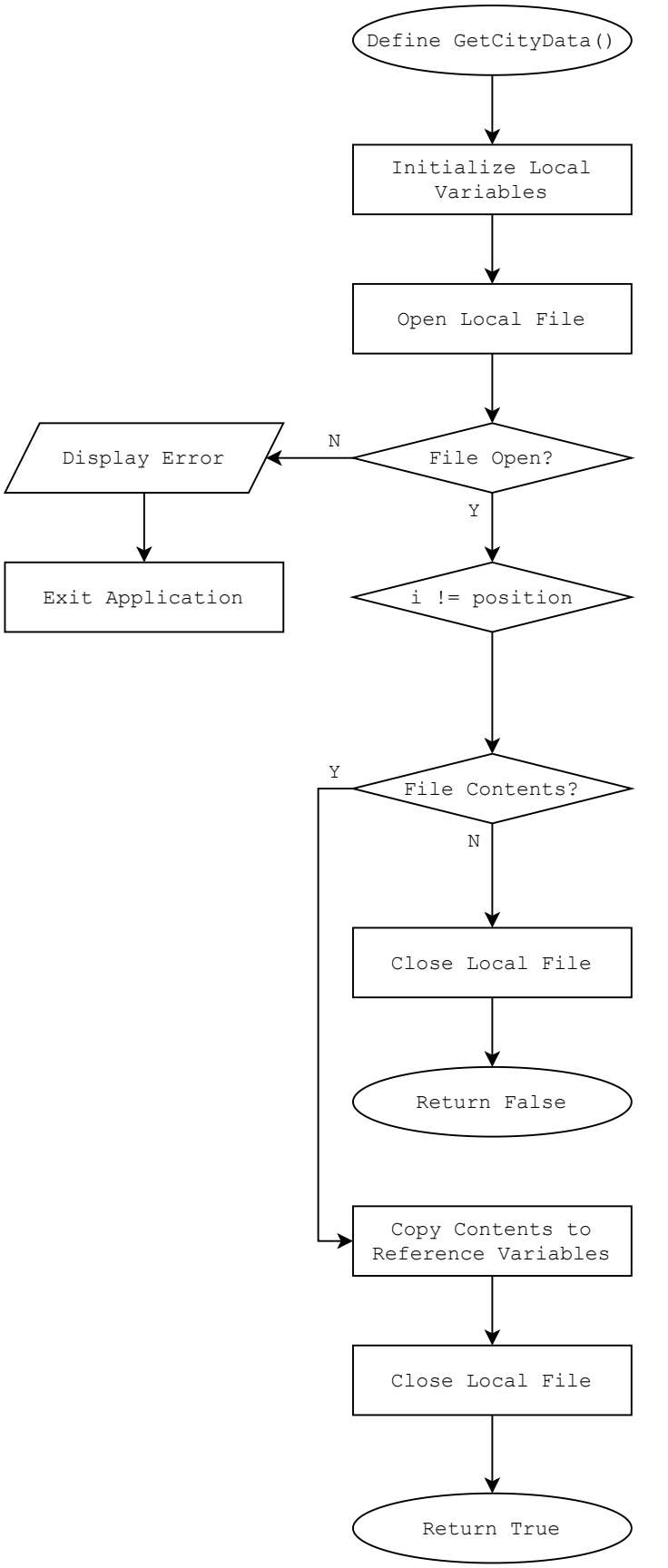


```
bool GetCityData(string file, int position, \
  int& flatRateTime, int& discountDay, \
  int& discountTime, double& perMileStandard, \
  double& perMileWeekend, double& flatRateCost, \
  double& flatRateFree, double& flatRateStop, \
  double& discountAmount) {

   string line;

   ifstream inFile(file);

   if (!inFile.is_open()) {
     cout << "Rate data file not found.\n"
       << endl << "File not found: " << file;
     exit(0);
   }

   for (int i = 0; i != position; i==) {

      if (inFile.good()) {
        inFile >> perMileStandard;
        inFile >> perMileWeekend;
        inFile >> flatRatecost;
        inFile >> flatRateTime;
        inFile >> flatRateFree;
        inFile >> flatRateStop;
        inFile >> discountDay;
        inFile >> discountTime;
        inFile >> discountAmount;
      }

      else {
        inFile.close();

        return false;
      }

   }
   inFile.close()

   return true;
}
```