WEEKLY MEAL PLANNER

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COMSC 165
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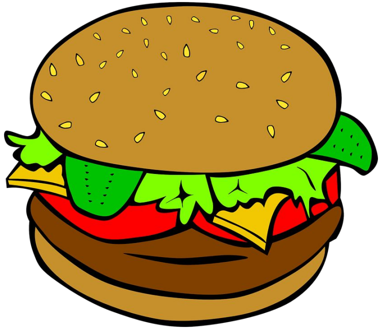
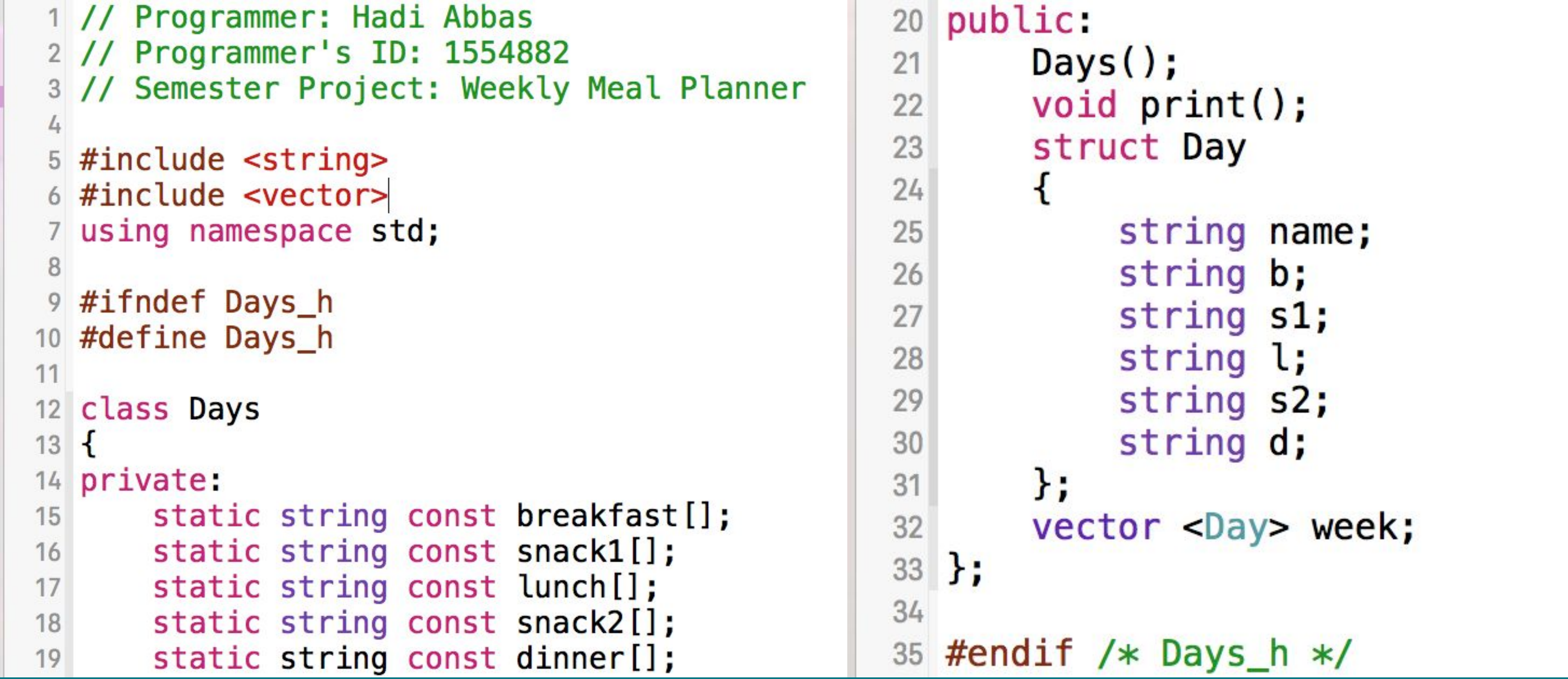
Background

- Deciding what to eat is a problem many people face on a daily basis.
- This program provides the user with a weekly meal plan encompassing a variety of menu items and food groups.
- The project randomly generates a meal plan for a week consisting of five daily meals (breakfast, lunch, dinner, and two snacks).
- Menu is saved to a file and can be printed.

Program Files

- Days.h header file
  - Defines the Days class
    - Contains five private member variables:
      - All are are static string const arrays used to store the different food possibilities for each meal.
    - Contains public member functions and variables:
      - Functions: Days ( ), void print ( )
      - Variables: struct Day which contains six string member variables and vector <Day> week





```cpp
// Programmer: Hadi Abbas
// Programmer's ID: 1554882
// Semester Project: Weekly Meal Planner

#include <string>
#include <vector>
using namespace std;

#ifndef Days_h
#define Days_h

class Days
{
private:
    static string const breakfast[];
    static string const snack1[];
    static string const lunch[];
    static string const snack2[];
    static string const dinner[];
public:
    Days();
    void print();
    struct Day
    {
        string name;
        string b;
        string s1;
        string l;
        string s2;
        string d;
    };
    vector <Day> week;
};

#endif /* Days_h */
```

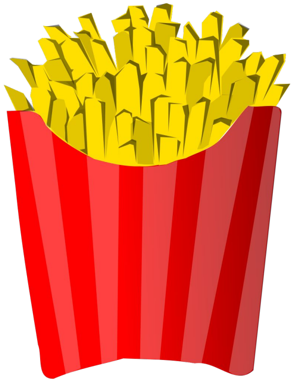
This is the “Days.h” header file described on the previous slide. The structure is created to represent each individual day in a week. Directly below the structure definition, a vector of Day is declared to store seven Day variables (represent a week). This becomes particularly useful when formatting the meal plan as a table later on.

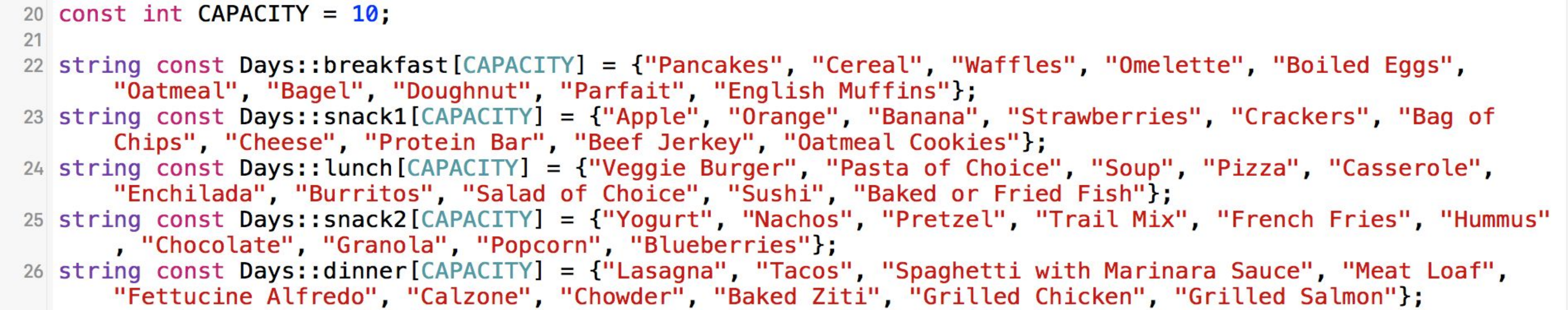
Program Files (con.)

- Days.cpp
  - Defines and stores values in the five string const arrays
  - Uses a print( ) function to randomly generate numbers which are then stored in vector<int>positions
    - The random values in the position vector are used to randomly select food items for the five meals for seven different instances of the Day structure (one for each day of the week).

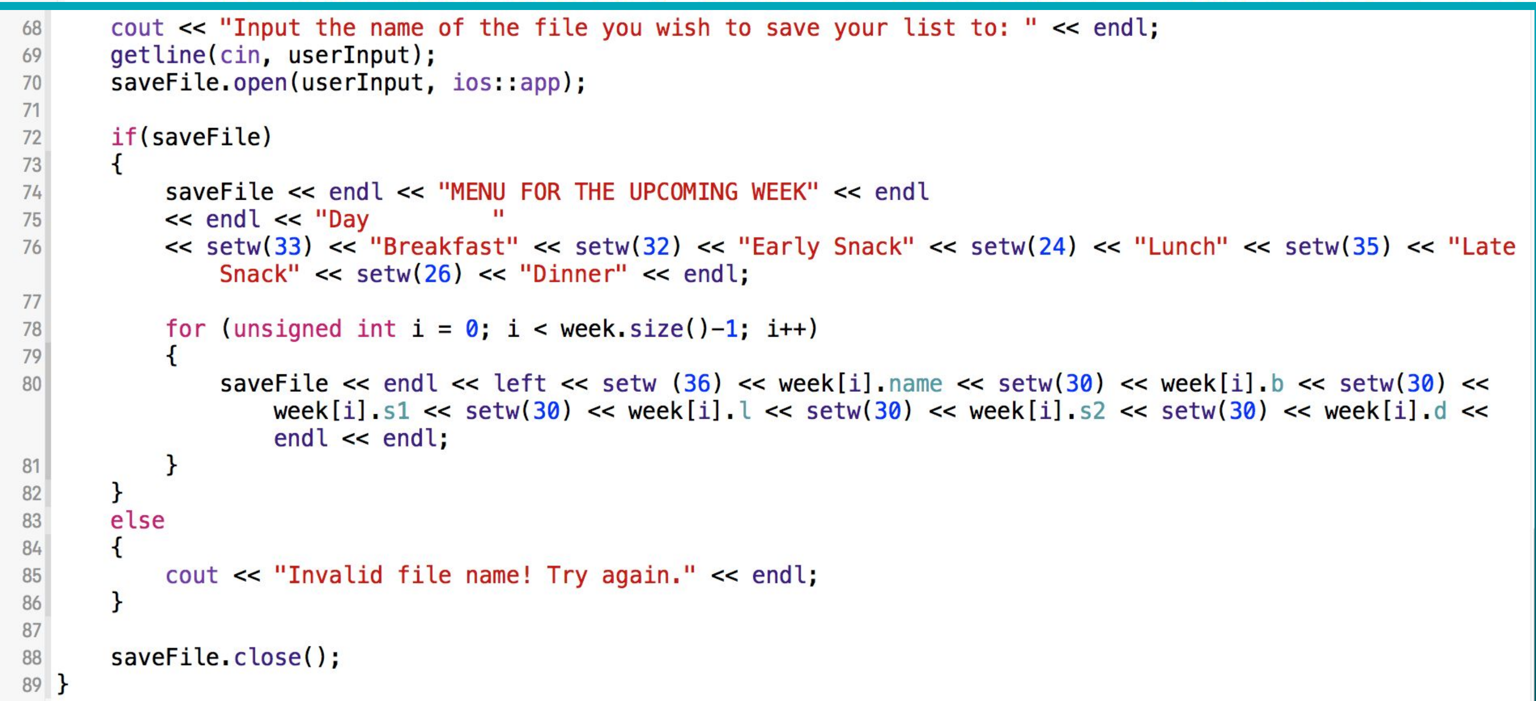
Program Files (con.)

- Days.cpp (con.)
  - The Day variables are now stored in the vector<Day>week.
    - Using headers and output formatting with the setw and left functions (#include <iomanip> and <iostream>), the Day variables are printed one by one in a table format.
    - This same formatting is used to output to a file of the user's choice.
      - The user is prompted to enter a filename.
        - If it does not exist, it is automatically created.





```cpp
const int CAPACITY = 10;

string const Days::breakfast[CAPACITY] = {"Pancakes", "Cereal", "Waffles", "Omelette", "Boiled Eggs", "Oatmeal", "Bagel", "Doughnut", "Parfait", "English Muffins"};
string const Days::snack1[CAPACITY] = {"Apple", "Orange", "Banana", "Strawberries", "Crackers", "Bag of Chips", "Cheese", "Protein Bar", "Beef Jerkey", "Oatmeal Cookies"};
string const Days::lunch[CAPACITY] = {"Veggie Burger", "Pasta of Choice", "Soup", "Pizza", "Casserole", "Enchilada", "Burritos", "Salad of Choice", "Sushi", "Baked or Fried Fish"};
string const Days::snack2[CAPACITY] = {"Yogurt", "Nachos", "Pretzel", "Trail Mix", "French Fries", "Hummus", "Chocolate", "Granola", "Popcorn", "Blueberries"};
string const Days::dinner[CAPACITY] = {"Lasagna", "Tacos", "Spaghetti with Marinara Sauce", "Meat Loaf", "Fettucine Alfredo", "Calzone", "Chowder", "Baked Ziti", "Grilled Chicken", "Grilled Salmon"};
```

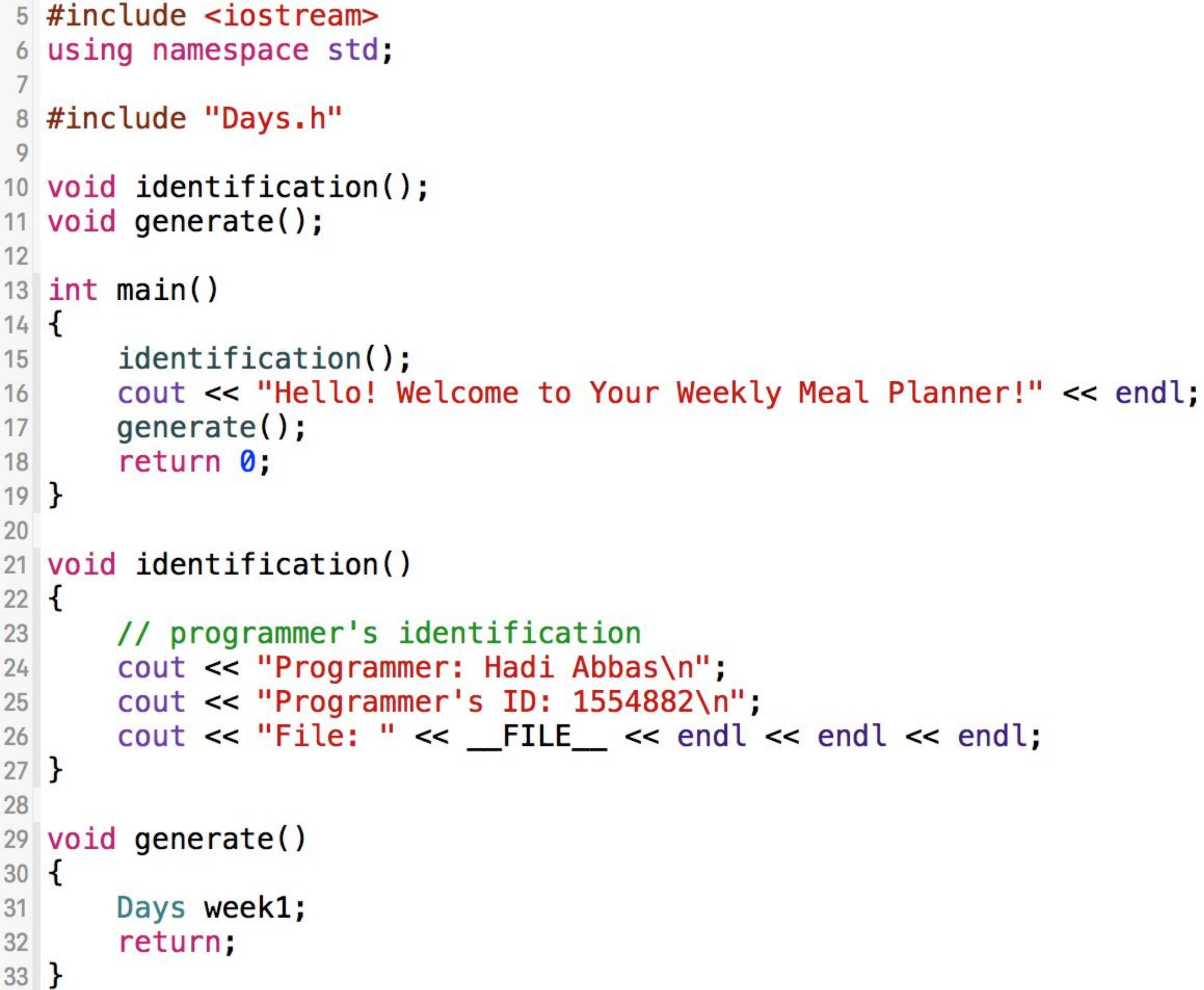


```cpp
    cout << "Input the name of the file you wish to save your list to: " << endl;
    getline(cin, userInput);
    saveFile.open(userInput, ios::app);

    if(saveFile)
    {
        saveFile << endl << "MENU FOR THE UPCOMING WEEK" << endl
        << endl << "Day         "
        << setw(33) << "Breakfast" << setw(32) << "Early Snack" << setw(24) << "Lunch" << setw(35) << "Late Snack" << setw(26) << "Dinner" << endl;

        for (unsigned int i = 0; i < week.size()-1; i++)
        {
            saveFile << endl << left << setw (36) << week[i].name << setw(30) << week[i].b << setw(30) << week[i].s1 << setw(30) << week[i].l << setw(30) << week[i].s2 << setw(30) << week[i].d << endl << endl;
        }
    }
    else
    {
        cout << "Invalid file name! Try again." << endl;
    }

    saveFile.close();
}
```

These are some excerpts from “Days.cpp”. The food items included for this example are stored in their respective arrays (*above*). The file output is demonstrated with formatting using a for loop, setw, left, and conditional statements (*left*).

Program Files (con.)

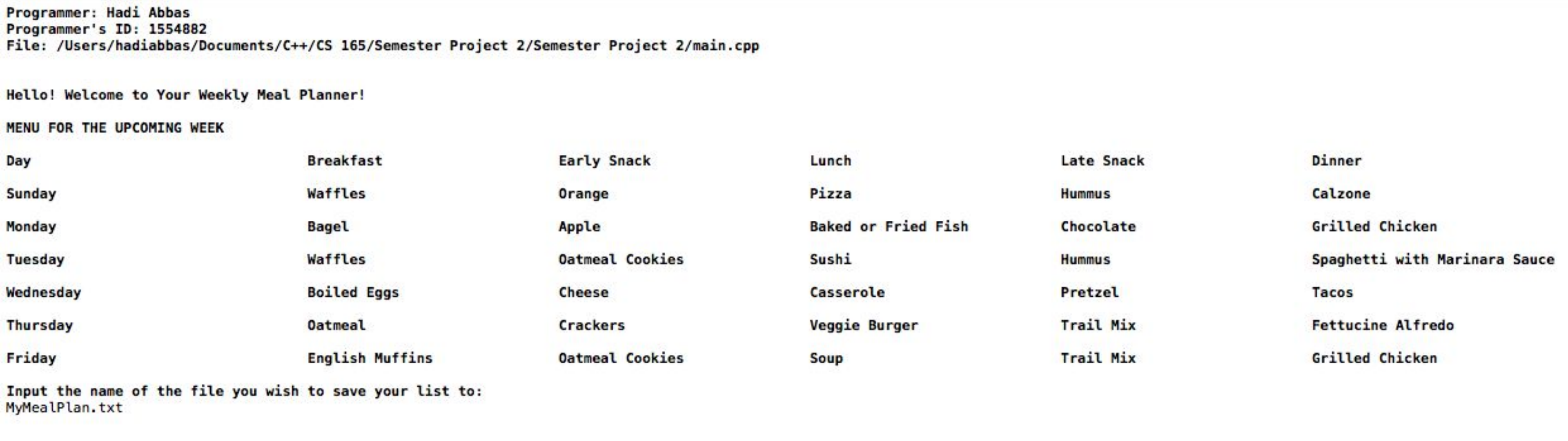
- main.cpp
  - int main( )
    - Prints welcome message and calls generate( )
  - void generate( ) function
    - Creates a Days object called week1
    - The constructor Days( ) is automatically created.
      - Days( ) calls other member functions to generate, print, and save a menu, as described in previous slides.



```cpp
#include <iostream>
using namespace std;

#include "Days.h"

void identification();
void generate();

int main()
{
    identification();
    cout << "Hello! Welcome to Your Weekly Meal Planner!" << endl;
    generate();
    return 0;
}

void identification()
{
    // programmer's identification
    cout << "Programmer: Hadi Abbas\n";
    cout << "Programmer's ID: 1554882\n";
    cout << "File: " << __FILE__ << endl << endl << endl;
}

void generate()
{
    Days week1;
    return;
}
```

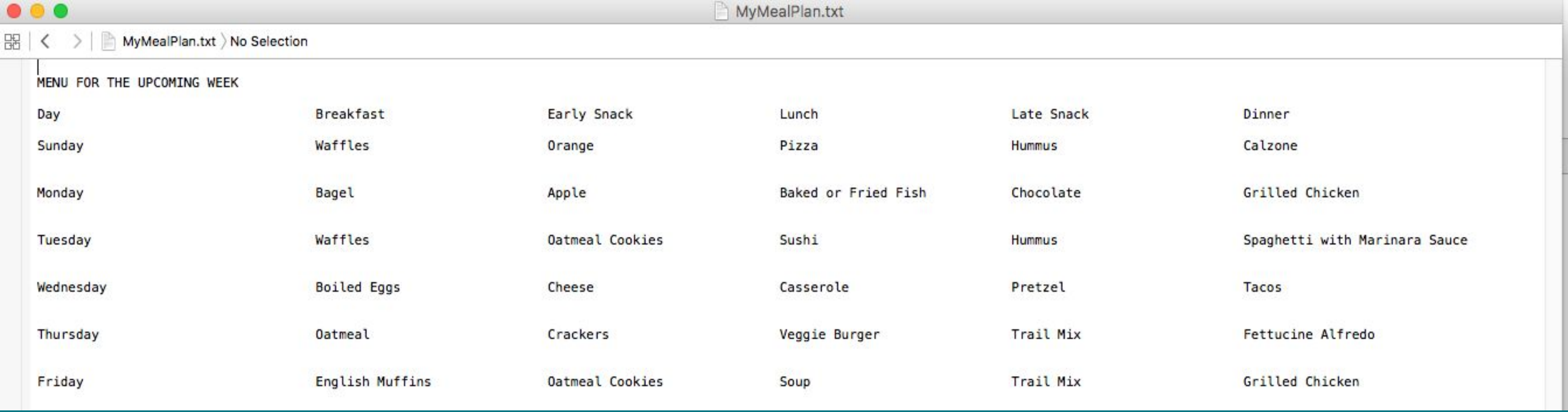
main.cpp is depicted to the left. It consists of three functions including int main( ), an identification function to print programmer information, and a generate function that creates a Days object named week1.

Console Output



```
Programmer: Hadi Abbas
Programmer's ID: 1554882
File: /Users/hadiabbas/Documents/C++/CS 165/Semester Project 2/Semester Project 2/main.cpp


Hello! Welcome to Your Weekly Meal Planner!

MENU FOR THE UPCOMING WEEK

Day                                 Breakfast                     Early Snack                   Lunch                         Late Snack                    Dinner

Sunday                              Waffles                       Orange                        Pizza                         Hummus                        Calzone

Monday                              Bagel                         Apple                         Baked or Fried Fish           Chocolate                     Grilled Chicken

Tuesday                             Waffles                       Oatmeal Cookies               Sushi                         Hummus                        Spaghetti with Marinara Sauce

Wednesday                           Boiled Eggs                   Cheese                        Casserole                     Pretzel                       Tacos

Thursday                            Oatmeal                       Crackers                      Veggie Burger                 Trail Mix                     Fettucine Alfredo

Friday                              English Muffins               Oatmeal Cookies               Soup                          Trail Mix                     Grilled Chicken

Input the name of the file you wish to save your list to:
MyMealPlan.txt
```

File Output



```
MENU FOR THE UPCOMING WEEK
Day                                 Breakfast                     Early Snack                   Lunch                         Late Snack                    Dinner
Sunday                              Waffles                       Orange                        Pizza                         Hummus                        Calzone

Monday                              Bagel                         Apple                         Baked or Fried Fish           Chocolate                     Grilled Chicken

Tuesday                             Waffles                       Oatmeal Cookies               Sushi                         Hummus                        Spaghetti with Marinara Sauce

Wednesday                           Boiled Eggs                   Cheese                        Casserole                     Pretzel                       Tacos

Thursday                            Oatmeal                       Crackers                      Veggie Burger                 Trail Mix                     Fettucine Alfredo

Friday                              English Muffins               Oatmeal Cookies               Soup                          Trail Mix                     Grilled Chicken
```

enjoy
food
gourmande
Bon Appétit
BON APPÉTIT
BON
gourmet
food
food delight
Bon Appétit
Bon Appétit
enjoy your meal
BON APPÉTIT
good food
good health
good cheer
delight
eat
love
Enjoy
relax
APPÉTIT
good food
Bon Appé
GOURMET
made with love by Johnny