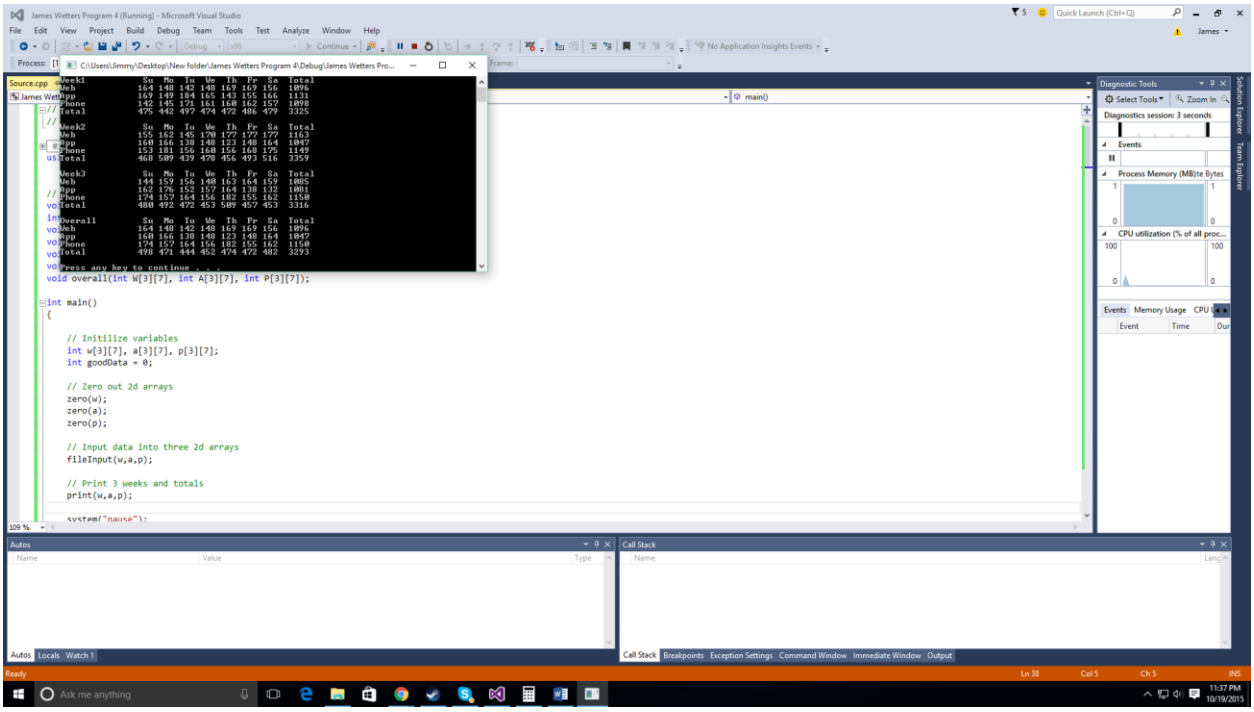
James Wetters CST 280 Program 4



Week1	Su	Mo	Tu	We	Th	Fr	Sa	Total
Web	164	148	142	148	169	169	156	1096
App	169	149	184	165	143	155	166	1131
Phone	142	145	171	161	160	162	157	1098
Total	475	442	497	474	472	486	479	3325

Week2	Su	Mo	Tu	We	Th	Fr	Sa	Total
Web	155	162	145	170	177	177	177	1163
App	160	166	138	148	123	148	164	1047
Phone	153	181	156	160	156	168	175	1149
Total	468	509	439	478	456	493	516	3359

Week3	Su	Mo	Tu	We	Th	Fr	Sa	Total
Web	144	159	156	140	163	164	159	1085
App	162	176	152	157	164	138	132	1081
Phone	174	157	164	156	182	155	162	1150
Total	480	492	472	453	509	457	453	3316

Overall	Su	Mo	Tu	We	Th	Fr	Sa	Total
Web	164	148	142	148	169	169	156	1096
App	160	166	138	148	123	148	164	1047
Phone	174	157	164	156	182	155	162	1150
Total	498	471	444	452	474	472	482	3293

Press any key to continue . . .

```
// This Program reads in raw data and out puts ...
// Author James Wetters

#include<iostream>
#include<iomanip>
#include<string>
#include<cstring>
#include<fstream>
using namespace std;


// Prototypes
void fileInput(int W[3][7], int A[3][7], int P[3][7]);
int stringToInt(string convert);
void zero(int device[3][7]);
void print(int W[3][7], int A[3][7], int P[3][7]);
void printWeek(int W[3][7], int A[3][7], int P[3][7], int week);
void printTotal(int W[3][7], int A[3][7], int P[3][7], int week);
void overall(int W[3][7], int A[3][7], int P[3][7]);

int main()
{

	// Initilize variables
```

```
	int w[3][7], a[3][7], p[3][7];
	int goodData = 0;

	// Zero out 2d arrays
	zero(w);
	zero(a);
	zero(p);

	// Input data into three 2d arrays
	fileInput(w,a,p);

	// Print 3 weeks and totals
	print(w,a,p);

	system("pause");
	return 0;
}

//*************************************************************************
//      File Input
//
// Inputs from a text document
//*************************************************************************

void fileInput(int W[3][7], int A[3][7], int P[3][7])
{
	// Input
	ifstream inputFile("rawData.txt");

	// Test file, will close if file fails to open
	if (inputFile.fail())
	{
		cout << "Problem opening file";
		system("pause");
		exit(-1);
	}

	// Prime read
	int week, day;
	string temp;

	getline(inputFile, temp, ',');
	char device = temp[0];

	getline(inputFile, temp, ',');
	week = stringToInt(temp);

	getline(inputFile, temp);
	day = stringToInt(temp);

	if (device == 'W')
	{
		W[week - 1][day]++;
	}
	else if (device == 'A')
	{
		A[week - 1][day]++;
	}
```

```
	else if (device == 'P')
	{
		P[week - 1][day]++;
	}

	// Step through collum

	while (!inputFile.eof())
	{
		int j = 0;
		// Step through row
		// Get Device
		getline(inputFile, temp, ',');
		char device = temp[0];

		// Get Week
		getline(inputFile, temp, ',');
		week = stringToInt(temp);

		// Get Day
		getline(inputFile, temp);
		day = stringToInt(temp);

		// Find device and add one to the day of the week
		if (device == 'W')
		{
			W[week - 1][day]++;
		}
		else if (device == 'A')
		{
			A[week - 1][day]++;
		}
		else if (device == 'P')
		{
			P[week - 1][day]++;
		}
	}

	// Close file
	inputFile.close();
}


//*************************************************************************
//     cstrings to int
//
// Recivies a string line
// Converts to a number to send back
//*************************************************************************

int stringToInt(string convert)
{
	// Convert string to cstring to number
	int number = atoi(convert.c_str());

	return number;
}
```

```
//*************************************************************************
//     Zero
//
// Recivies a 2d array
// Zeros out all spots of the array
//*************************************************************************

void zero(int device[3][7])
{
	for (int i = 0; i < 3; i++)
	{
		for (int j = 0; j < 7; j++)
		{
			device[i][j] = 0;
		}
	}
}

//*************************************************************************
//     Print
//
// Recivies a 2d array
// Prints 3 weeks of data and a total
//*************************************************************************

void print(int W[3][7], int A[3][7], int P[3][7])
{
	// Initilize variables
	int week = 0;

	// Print weeks
	while (week < 3)
	{
		// Print the week
		printWeek(W, A, P, week);

		// Increment week by 1
		week++;
	}

	overall(W, A, P);
}


//*************************************************************************
//     Print
//
// Recivies a 2d array
// Prints 3 weeks of data
//*************************************************************************

void printWeek(int W[3][7], int A[3][7], int P[3][7], int week)
{
	// Initilize variables
	int total = 0;

	// Top Line
```

```
	cout << "Week" << week + 1 << setw(13) << "Su" << setw(4) << "Mo";
	cout << setw(4) << "Tu" << setw(4) << "We" << setw(4) << "Th";
	cout << setw(4) << "Fr" << setw(4) << "Sa" << setw(7);
	cout << "Total" << endl;

	// First Line
	cout << "Web" << setw(15);

	for (int j = 0; j < 7; j++)
	{

		cout << W[week][j] << " ";
		total = total + W[week][j];
	}
	cout << " " << total << endl;

	// Secound Line
	total = 0;
	cout << "App" << setw(15);
	for (int j = 0; j < 7; j++)
	{

		cout << A[week][j] << " ";
		total = total + A[week][j];
	}
	cout << " " << total << endl;

	// Third Line
	total = 0;
	cout << "Phone" << setw(13);
	for (int j = 0; j < 7; j++)
	{

		cout << P[week][j] << " ";
		total = total + P[week][j];
	}
	cout << " " << total << endl;

	// Fourth line
	printTotal(W, A, P, week);
}


//*************************************************************************
//     Print
//
// Recivies a 2d array
// Prints Total
//*************************************************************************

void printTotal(int W[3][7], int A[3][7], int P[3][7], int week)
{
	// Initilize variables
	int finalTotal = 0;
	int total = 0;

	// Row header
	cout << "Total" << setw(13);
```

```
	// Collums
	for (int j = 0; j < 7; j++)
	{
		// Reset Total
		total = 0;

		// Find the total for each device
		total = total + W[week][j];
		total = total + A[week][j];
		total = total + P[week][j];

		// Write total
		cout << total << " ";

		// Add totals
		finalTotal = finalTotal + total;
	}

	// Write Final Total
	cout << " " << finalTotal << "\n" << endl;
}


//*************************************************************************
//	Print
//
// Recivies a 2d array
// Prints 3 weeks of data and a total
//*************************************************************************

void overall(int W[3][7], int A[3][7], int P[3][7])
{
	// Initilize variables
	int total = 0;
	int finalTotal = 0;
	int overAll[3][7];

	// Zero Out Array
	zero(overAll);

	cout << "Overall" << setw(11) << "Su" << setw(4) << "Mo";
	cout << setw(4) << "Tu" << setw(4) << "We" << setw(4) << "Th";
	cout << setw(4) << "Fr" << setw(4) << "Sa" << setw(7);
	cout << "Total" << endl;

	// Populate Array overAll
	for (int i = 0; i < 3; i++)
	{
		for (int j = 0; j < 7; j++)
		{
			overAll[0][j] = overAll[0][j] + W[i][j];
			overAll[1][j] = overAll[1][j] + A[i][j];
			overAll[2][j] = overAll[2][j] + P[i][j];
		}
	}
```

```
// Write Overall

// First Line
cout << "Web" << setw(15);

for (int j = 0; j < 7; j++)
{

	cout << W[0][j] << " ";
	total = total + W[0][j];
}
cout << " " << total << endl;

// Secound Line
// Reset total
total = 0;
cout << "App" << setw(15);
for (int j = 0; j < 7; j++)
{

	cout << A[1][j] << " ";
	total = total + A[1][j];
}
cout << " " << total << endl;

// Third Line
// Reset total
total = 0;
cout << "Phone" << setw(13);
for (int j = 0; j < 7; j++)
{

	cout << P[2][j] << " ";
	total = total + P[2][j];
}
cout << " " << total << endl;

// Fourth Line
// Row header
cout << "Total" << setw(13);
// Reset final total
finalTotal = 0;
// Reset total
total = 0;

// Collums
for (int j = 0; j < 7; j++)
{
	total = 0;

	total = total + W[0][j];
	total = total + A[1][j];
	total = total + P[2][j];
	cout << total << " ";
	finalTotal = finalTotal + total;
}

// Write Final Total
```

```
        cout << " " << finalTotal << "\n" << endl;
}
```