Stock Market

Michał Drab

1. Task topic

Stock Market

2. Project Analysis

First I created a schedule of smaller tasks to perform:

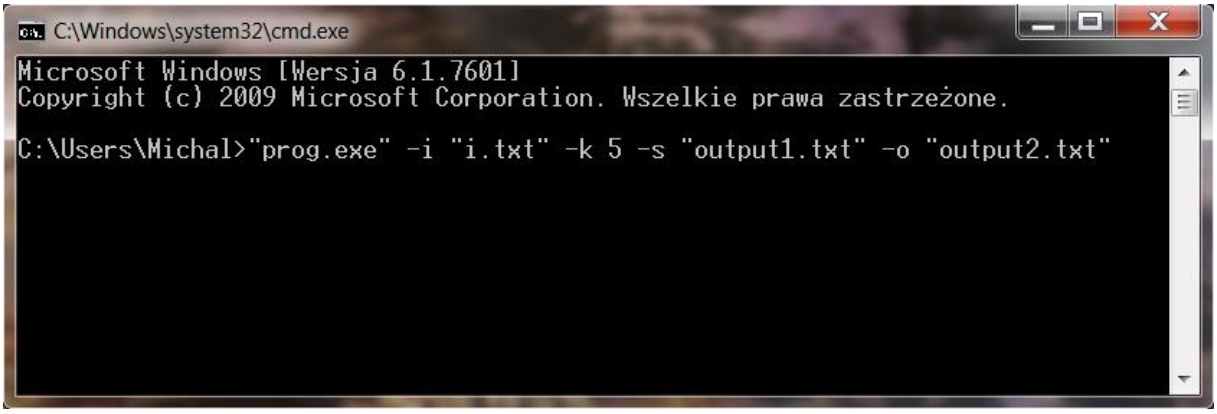
- Checking input parameters
- Loading input file
- Calculations
- Saving output files

Data structures:

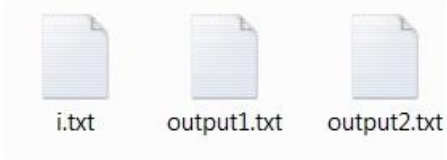
- typedef struct Struktura- This structure stores a pointer, which will indicate the memory allocated to our dynamic table, those are "float*Element" and its size that is "int rozmiar".
- void PrepareStruktura(Struktura* Element) - Prepares the table to perform.
- void Push(Struktura *Element, float f) – This function adds new element, takes greater memory, increases the variable that "remembers" the size.
- void ZwolnijStruktura(Struktura *Element)- cleans the memory allocated.
- void Argumenty(char** argv,int argc, int* input_file, int* step, int* output_srednia, int* odchylenie) - assigns indexes from argv table to variables (parameters).
- void WczytajZPliku(char* input_filename,Struktura* v)- reads a file, checks if file is not equal the end of file.
- int StrNaInt(char* str) - converts numbers from string form to integers.
- float SredniaRuch(int step, int t,Struktura* v)- this function calculates the moving average.
- float Odchylenie(float avg, int step, int t, Struktura* v)- this function calculates the standard deviation.
- void StworzPlik(char* out)- this function creates the output file.
- void BledneMozliwosci(char* out) – this function extracts improper cases.
- void ZapiszDane(char* str,float data)- records data to the file.
- int ZleDane(int input_file, int step, int output_srednia, int odchylenie, int argc)- it is responsible for three cases. The first checks if there is any parameter missing. The second works, when there is a file missing . The third is for a case, when there is a file name missing and instead of it there is given a next parameter.

3. Internal analysis

What does the program? The program is made to calculate moving average and standard deviation then it prints results to output files. How should the input file look like?
It should be txt file in which is placed list of numbers. First user has to run this program in command line – he have to give 5 parameters – name of program, name of input, step, output file name 1 and 2 (in which average and deviation would be saved).

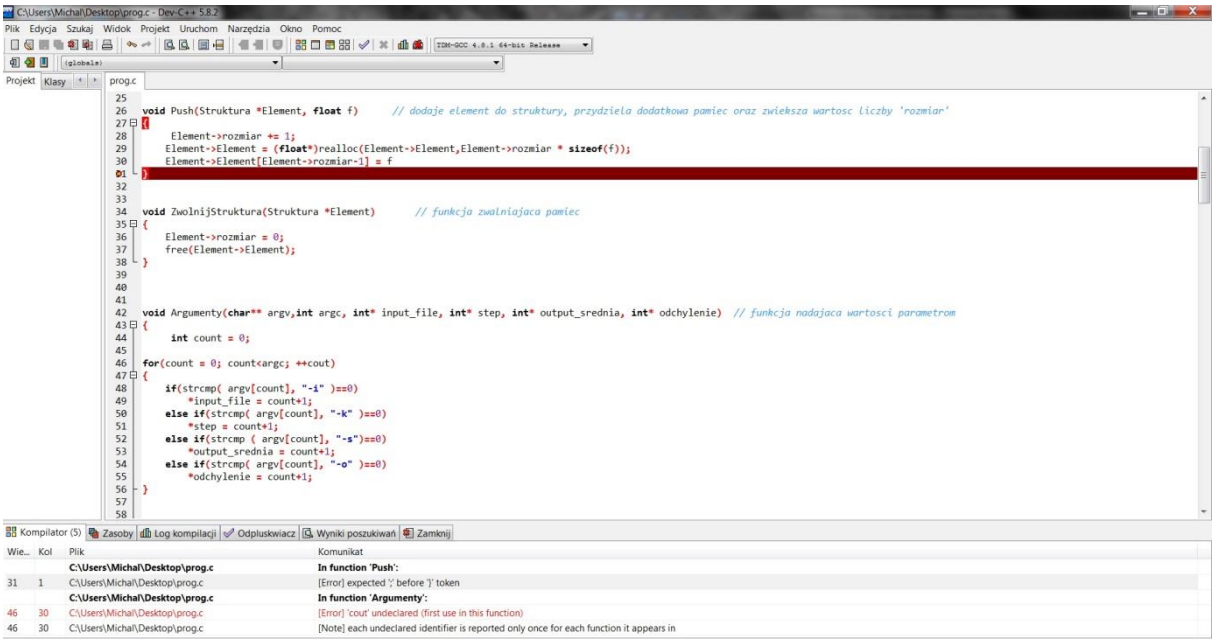


Next program takes data from input, copies numbers from input to dynamic structure and calculates moving average and a trailing standard deviation. At the end program prints all results to output files. Output files have a .txt extension like a input file.

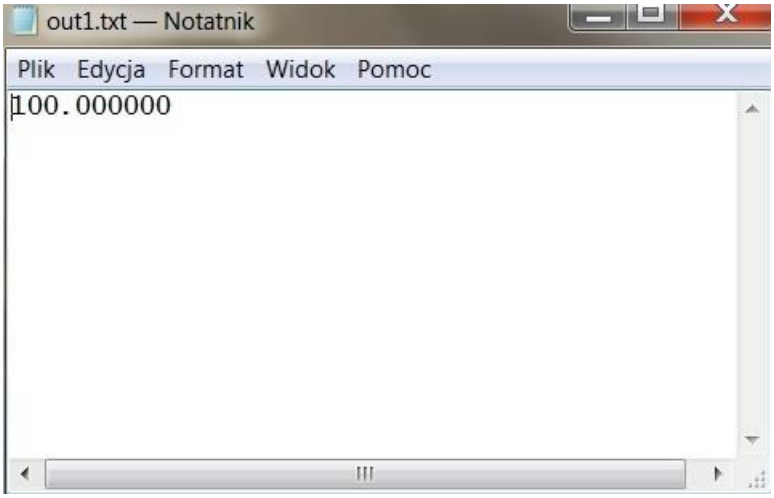


4. Testing

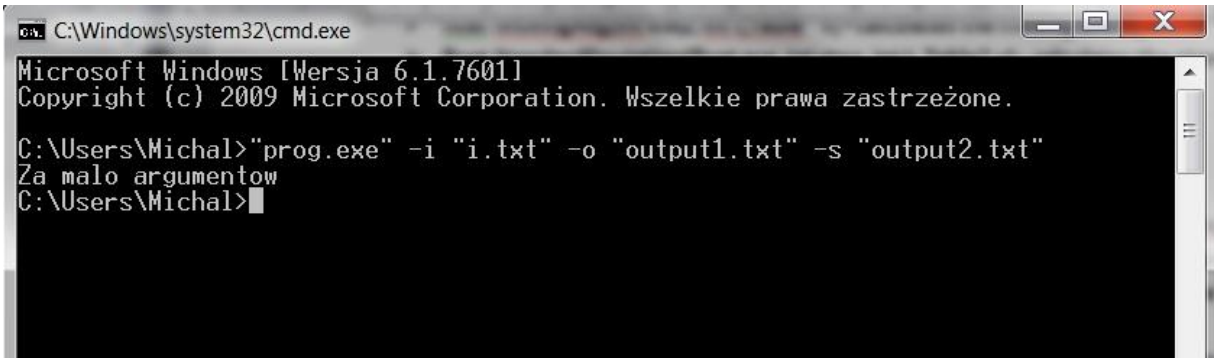
I ran my program a few times. There were small errors, for example sometimes I forgot to place the semicolon or I made mistakes in variable names.



For the first time my program calculated normal average. I had to search in the Internet what exactly moving average means and how to calculate it.

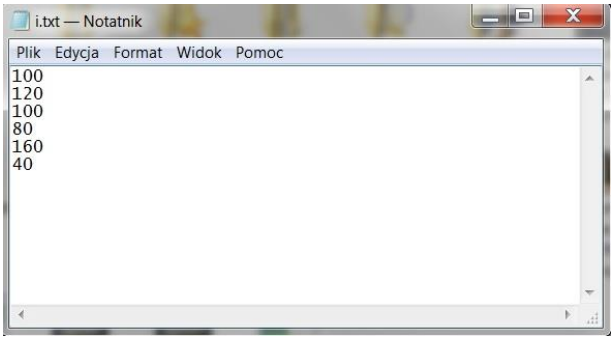


I also checked if I can run program if I give it wrong parameters. We know that program will crash so I have to write a function which will ask user to give parameters again.

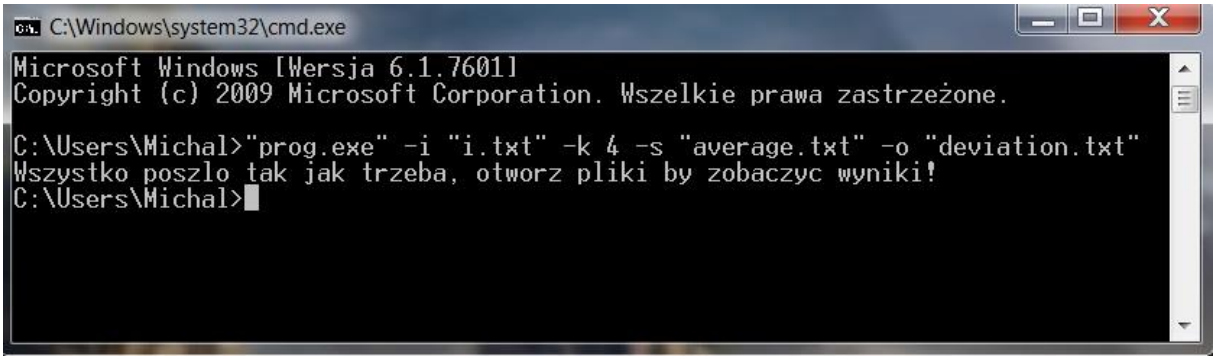


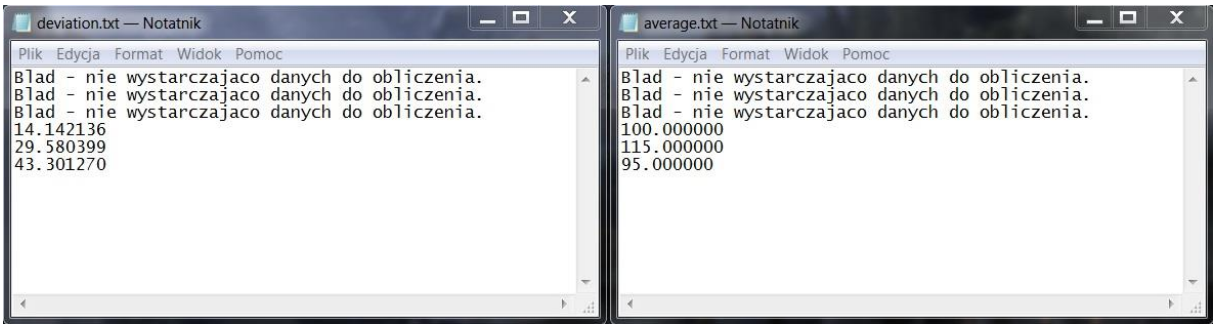
Now the program prints “Za malo argumentow” which means “Too less arguments” and user has to give parameters again.

After this all my program works correctly.



← this is the input file





There are an output files.