Week 1: Exercises

Problem 1.

For randomly given $n + 1$ values which are input from the command-line in the following order:
Input: $a_0\ a_1\ a_2 \cdots a_{n-1}\ x$

Write C++ functions to compute the value of the following expressions:
(1) $a_0 + a_1 \times x + a_2 \times x^2 + \cdots + a_{n-1} \times x^{n-1}$ (polynomial function, 多项式)
(2) $a_0 + a_1 \times x^{-1} + a_2 \times x^{-2} + \cdots + a_{n-1} \times x^{-(n-1)}$ (posynomial function, 正项式)

Requirement:
(1) All values in the above expressions are of type double (may need function atof to convert character string into double value).
(2) For Expression (2), the program should check illegal inputs when x is 0 and report error message instead of computing the value.
(3) Implement a multiple-file project including the following files:
   a) polynomial.cpp: implement the function for computing Expression (1)
   b) posynomial.cpp: implement the function for computing Expression (2)
   c) func.h: Declare the two functions in polynomial.cpp and posynomial.cpp
   d) main.cpp: read the inputs from command-line and call the two functions
   e) makefile: manage the compilation process

Rules for Submission: First, make a folder named "Problem1" (or "Problem2") for each problem and place all the files into the folder. Then move the folder of the problem into a folder named "xxxxxxxxxx_yyyy", where "xxxxxxxxxx" represents the student No and "yyyy" represents the Chinese Or English name of the student (either Chinese or English characters are ok). And then pack the folder into "xxxxxxxxxx_yyyy.rar" or "xxxxxxxxxx_yyyy.zip". Finally, submit the package through Tsinghua Web Learning. All the homeworks through this Semester should be submitted in the above-mentioned way.