Introduction to Computer Science - Fall Semester 1998/9
Exercise 2

Due: 31/12/1998

Ex 1.1 zyx..

Write a program that outputs the letters of the English alphabet in reverse.

Ex 1.2 Counting letters

Write a program that asks the user for a sequence of letters and then counts the number of times the first three letters of the alphabet (a,A,b,B,c,C) occur. Do not distinguish between lower-case and upper-case letters.

Ex 1.3 exp

Write a program that reads a real number x from the input, computes, and outputs $\exp(x) = e^x$. The value $\exp(x)$ should be computed according to the formula:

$$exp(x) = 1 + \sum_{i=1}^{20} \frac{x^i}{i!} \quad ,$$

where $i! = 1 \cdot 2 \cdot 3 \cdots i$. Note that the i-th element in this summation can be easily computed from the $(i-1)$-st element.

Ex 1.4 (bonus) Binary Representation

The binary representation of a number n is $b_k b_{k-1} \cdots b_0$ where

$$n = b_0 \cdot 2^0 + b_1 \cdot 2^1 + \ldots + b_k \cdot 2^k$$

Write a program that asks the user for an integer and then prints out its binary representation. (Hint: print first the reverse representation $b_0 b_1 \cdots b_k$).