

**Simon Fraser University
School of Computing Science**

CMPT 383

Assignment 1

Due date: October 6, 2005

- 1) Pick a programming language you know or have heard that was not mention in your textbook/notes. Write a report on its development, its major features, and its place in the history of programming languages.
- 2) Each of the following languages is historically related to a language or languages mentioned in your textbook/notes. Determine and briefly describe this relationship.
 - a) JOVIAL
 - b) Euler
 - c) BCPL
 - d) Alphard
 - e) HOPE
- 3) Choose a feature from a programming language of your choice that you think should be removed. Why should the feature be removed? What problems might arise as result of the removal?
- 4) Choose a feature that you think should be added to a programming language of your choice. Why should the feature be added?
- 5) In Pascal integer can be assigned to real variables, but not vice versa. What design principle does this violate? Would it be a good idea to allow reals to be assignable to integer variables? Why?
- 6) In words, describe a program to read a sequence of integers and to write the integers that appear one or more times in the input sequence. For example, if the input sequence is 617, 201, 415, 201, then 201 must appear just once in the output.
- 7) In the language of your choice, write programs to read two integers m and n and produce the desired result without using multiplication and division. Use repeated additions and subtractions instead.
 - a) $m * n$ (the result of multiplication).
 - b) $m \mathbf{div} n$ (the result of integer division).
 - c) $m \mathbf{mod} n$ (the remainder after integer division).
- 8) How many different ways can you write the assignment $x=2*x$ in C? What are the advantages and disadvantages of this flexibility?