Indian Institute of Technology Mandi

IC150: Computation for Engineers

Tutorial 2 9th April 2014

1. The coefficients of two *n*-degree polynomials are stored in the arrays *p1* and *p2*. Write pseudo-code to add the two polynomials and store the result in array *p3*. Do **not** write C code.
2. Draw a neat flowchart to read an integer *n*, add its digits and print the result. Eg, given *n* = 726, the output is 15.
3. A simple calculator, `scalc`, takes several integers on the command-line and computes their average. If the 1st argument is "`-t`", it prints the total instead of the average. Eg, the command
   ```
   $ scalc 4 5 -7 12
   ```
   prints `3.5`, and
   ```
   $ scalc -t 4 5 -7 12
   ```
   prints `14`. If no arguments are given, it prints an appropriate error message. Write C code for `scalc.c`.
4. Define a type `ComplexType` that can hold a complex number. Write the following functions:
   `MakeComplex(x, y)` – returns a complex number <x + iy>
   `AddComplex(c1, c2)` – returns the sum of the two complex numbers `c1` and `c2`
   `MultComplex(c1, c2)` – returns the product of the two complex numbers `c1` and `c2`
5. Write the function `strend(s, t)` which returns `1` if the string `t` occurs at the end of the string `s`, and `0` otherwise.