The University of Newcastle

School of Electrical Engineering and Computing

COMP3290 Compiler Design

Semester 2, 2019

Project Part 2 **CD19 Source Files (5%)** **Due: August 30th**

Change Notes: additions and updates will be highlighted, while redundant sections of text are ~~struck out~~. Document updates will result in a change of version number – this is v1.0

Part 2 - CD19 Source File Test Programs

You are to write a **suite of programs** in the language **CD19**.

This part of the project has 3 main purposes:

1) To help you to ***learn*** the CD19 Programming Language;
2) To ensure that you have the beginnings of an adequate *suite of* ***test data*** for the later stages of your compiler, and;
3) To see if you can *uncover any inconsistencies* in the definition of CD19.

At this stage, you are to simply use the `.txt` for your *source file extension*, for the purposes of ease of marking.

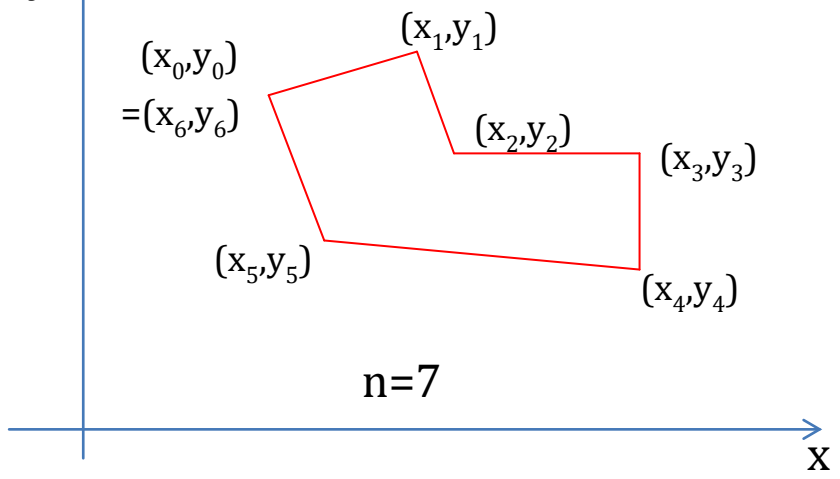
Your suite of programs should contain:

a) *at least one* that fails syntactically (but *succeeds lexically*); (1)
b) *at least one* that fails semantically(but *succeeds lexically and syntactically*); (1)
c) what you consider to be the *simplest possible* working program in CD19; (1)
d) several that you expect to *run successfully* when later compiled by your compiler (*and also part 3*).
   These should include *at least one* that *just has a main program and simple variables, one that has arrays*, and *one that has function(s)/procedure(s)* using all *three methods* of parameter passing that are allowed in CD19. (3)
e) Write a program in CD19 that will *compute the area of a polygon from a set of (x, y) Cartesian points*. (1)
   The program should have functions to (i) *input the number of points* (up to 20) and the points themselves, and (ii) *compute the area of the polygon*.
   The main program should be used to *output the result*.

The operative formula is:

$$A = \tfrac{1}{2}\left| \sum_{i=0}^{n-2} (x_{i+1} + x_i)(y_{i+1} - y_i) \right|$$

e.g.



The submission for Part 2 will be *typed as text files*, and placed in a folder called **`/test`** in your submission archive. You must include comments that explain exactly what the program is doing, *in the source*.

Also include (as **`notes.txt`**) comments on any inconsistencies or ambiguities that you may find in the specifications of CD19. You may also include a readme file (as **`readme.txt`**) with any additional information that is not applicable to the **`notes.txt`** file.

Note that some of your test files *MAY become part of a standard test suite for the whole class*.

Submission:

Project Part 2 (*CD19 Source Files*), is due on **Friday August 30th at 23:59pm** (end of Week 5) – please zip up all your files and submit them via the **Part 2 Submission Point** within the assessments tab on **Blackboard**.

Use a file name that contains your student number and "**`pt2`**" (e.g. **`c9876543_pt2.zip`**), and put your name into the associated comment field for the submission. Remember to incorporate an assignment cover sheet into your submission.

Place your **CD19 source files** in a folder called **`/test`** in the root of your zip archive; your **coversheet** (as a *PDF*) will also be placed in the root of the archive.

Please do not deviate from these folder structures and standards.

DB

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