

CSCI 485 Programming Languages

Assignment 8

Due Friday, April 8

1. (10 points) What are the three general characteristics of subprograms?
2. (10 points) What characteristic of Python subprograms sets them apart from those of other languages? Illustrate it using an example in Python.
3. (20 points) Some programming languages support variable number of subprogram parameters. Give an example in C/C++ and an example in JavaScript to illustrate how these two languages deal with variable number of subprogram parameters.
4. (10 points) What are the differences between a function and a procedure?
5. (10 points) What are the design issues for subprograms?
6. (20 points) In the context of subprograms, what is *closure*, what is a *delegate*, and what is *lambda expression*? Illustrate your answers using examples in actual programming languages.
7. (10 points) What are the three semantic models of parameter passing?
8. (10 points) What are the modes, the conceptual models of transfer, the advantages, and the disadvantages of pass-by-value, pass-by-result, pass-by-valueresult, and pass-by-reference parameter-passing methods?