
Functional Cohesion

- ***Functional cohesion**** – each module should do just one thing and do it well

* Special thanks to Dr. McCormick for the use of his materials from the book: Dale, Weems, and McCormick. [Programming and Problem Solving with ADA 95.](#)

Which module lack functional cohesion?

- a) Process credit card transactions
- b) Determine weight and pick color
- c) Print final score
- d) Pick floor covering and large screen television
- e) Determine costs of tuition and entertainment expenses
- f) Determine the cost of baking a cake
- g) Ask user preferences
- h) Determine average and letter grade

How to write cohesive modules

1. Think about how you would solve the subproblem by hand
2. Begin writing down the major steps
3. If the step is simple enough to implement directly in Python, it is already concrete (do not refine it further)
4. If you still need to think about implementing the step as a series of smaller steps, it is still abstract

How to write cohesive modules (cont.)

5. If you are trying to write a series of steps and get overwhelmed by the details, you probably bypassed one or more levels of abstraction
 - Look for pieces that can be written as more abstract steps to be broken down later

Example: Card Game War

- We can use the hierarchical solution tree we built to convert our script version into a version with functions that map to each module!