Design Methods

- In the 4 design methods to be considered, what are the critical levels and concepts for evaluating design structure? Which is the design level? What are the levels of cohesion and what do they mean? Which is the best level, which is the worst?
- What does Bergland propose as the general design goals?
- What is *functional decomposition* and why is it important, useful? What are its strengths and weaknesses? What is the difference/similarity between FD and the Clement/Parnas ideal process? What is the critical decomposition question?
- Exercise: consider an ATM – what are the top level functions/concepts? How would you decompose to the next level?

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Design Methods

- What is *data flow design* and why is it important and useful? What is the design strategy/method and what are its strengths and weaknesses? How does it align with Jackson's rule about problems and solutions? What is the critical evaluation question?
- Exercise: In the ATM system, what data do we start with? What else do we need? What do we end with? How does the data get transformed?
- What is the *data structure design* method? How does it differ from the first two methods? What is the design strategy/method? What kind of structure results? What are the strengths and weaknesses? What is the critical evaluation question?
- Exercise: What are the critical data you need for an ATM? How would you structure it?

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Design Methods

- What is the *program calculus* methods? What is the design strategy/method? Why and where is it useful? What are its strengths and weaknesses? What is hard/difficult?
- Exercise: What would the main postcondition be for an ATM and what preconditions are necessary to reach that postcondition?
- How do the different methods compare with each other? Where is each useful and an appropriate approach? Which of the 4 is closest to a real method (ie, which is likely to produce very similar designs?)

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