Program Design
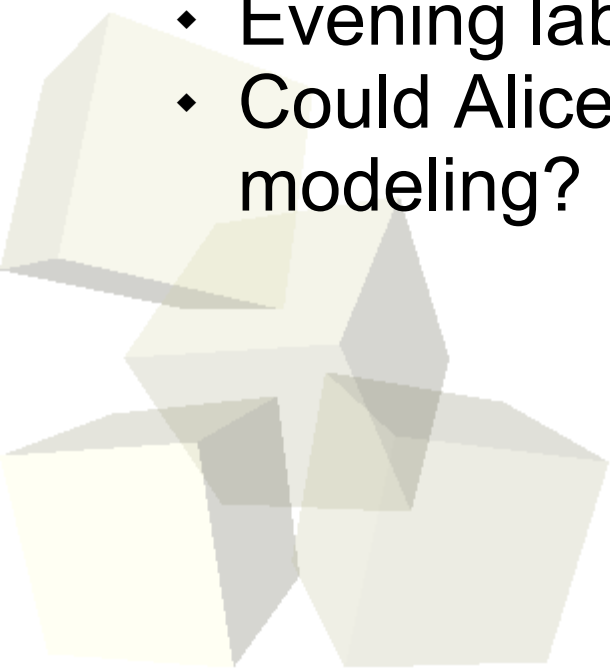
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- Let's now look at the solution to the interclass problem.
- Do you have any questions about the class or how it is going to work?
- Do you have any questions that came up in the reading or in the tutorials?
- Minute Essays
  - Evening lab access.
  - Could Alice or Java be applicable to economic modeling?

- Some would argue that a large component of computer science is striving to control complexity.
- In standard engineering projects, the laws of physics impose limitations on complexity. Structures can only be so big because materials are only so strong. Or the number of parts included in construction is limited by space, cost, etc.
- Software engineering doesn't have this limitation. Construction in virtual space is only limited by storage, and with current technology that isn't a meaningful limitation.
- We have to strive to not bury ourselves.

- There are many weapons in the war against complexity, but design is the most significant.
- Design is the act of planning out what a project will do and how it will do it.
- In this class, nothing you do will be that large or complex, but taking time to do proper design can still make your life easier.
- Every minute you spend thinking about what you are doing up front can easily save you ten minutes later on.
- The act of creating a program involves a lot of thinking, but you really want most of that thinking to happen during design.

- As you have seen, Alice is a very visual, graphical program. Your designs will be similarly visual in nature.
- Your book discusses design in the form of storyboards. These are literally drawing of what you expect your program to produce.
- Along with the storyboards you should have text descriptions of what is happening or what the user can do.
- Many Alice texts focus a bit too much on the use of Alice for story-telling or making movie like content. We want to go beyond this linear type of creation in our work.

- Let's bring up Alice and write a little program that has an evil mummy doing something bad.
- I want to place two other creatures in the world and have the mummy go up to each one and make it disappear.
- How are we going to do this in Alice?

- Minute essays can also be used to provide any feedback you want to or to ask any questions you have at the end of a class.
- Did the tutorials for Alice make sense when you ran through them? What aspects of them, if any, caused problems.
- Interclass Problem – Write an Alice program that demonstrates Zeno's paradox. Put two objects in a scene and have one repeatedly move half the distance to the other. Have it say it is half way there each time.