

# Virtual & Polymorphism

CS 165 – Object Oriented Software Development

Macbeth – Lesson 9.1



# Agenda

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- Opening Prayer
- Scripture
- Virtual & Polymorphism
- Skeet Project
- Looking Forward

# Scripture

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## 2 Kings 6:15-17

And when the servant of the man of God was risen early, and gone forth, behold, an host compassed the city both with horses and chariots. And his servant said unto him, Alas, my master! how shall we do?

And he answered, Fear not: for they that be with us are more than they that be with them.

And Elisha prayed, and said, Lord I pray thee, open his eyes, that he may see. And the Lord opened the eyes of the young man; and he saw: and, behold, the mountain was full of horses and chariots of fire round about Elisha.

# Definitions

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- **Virtual** – A function in a base class that must be implemented in each derived class. Defines the required interface for all derived classes. A default implementation is provided in the base class.
- **Pure Virtual** – The base class does not provide a default implementation of the virtual function.
- **Abstract Class** – If a class has at least one pure virtual function, then the class is abstract. You can not create an object of an abstract class.
- **Polymorphism** – Ability for a base class to call the virtual functions which will execute the implementation in the appropriate derived class.

# Looking Forward

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- End of Today - Create classes and stub out all functions to match your UML. It does not need to compile. Turn in by the end of the day Monday as milestone 08 (update makefile to say this).
- Read the textbook chapters shown in I-Learn
- Work on checkpoints
- Team Activity on Wednesday will practice virtual functions and polymorphism.