

# COMP 110/L Lecture 2

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Slides adapted from Dr. Kyle Dewey

# Programming Languages as Natural Languages

# Syntax

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Defines what valid sentences are

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---

Megan goes to the store.

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The goes store to Megan.

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~~The goes store to Megan.~~

# Semantics

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Defines what valid sentences *mean*

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Megan goes to the store.

# Semantics

Defines what valid sentences *mean*

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Megan goes to the store.

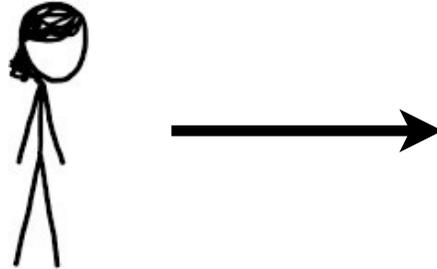


# Semantics

Defines what valid sentences *mean*

---

Megan **goes to** the store.



# Semantics

Defines what valid sentences *mean*

Megan goes to **the store**.



# Semantics

Defines what valid sentences *mean*

Megan goes to the store.

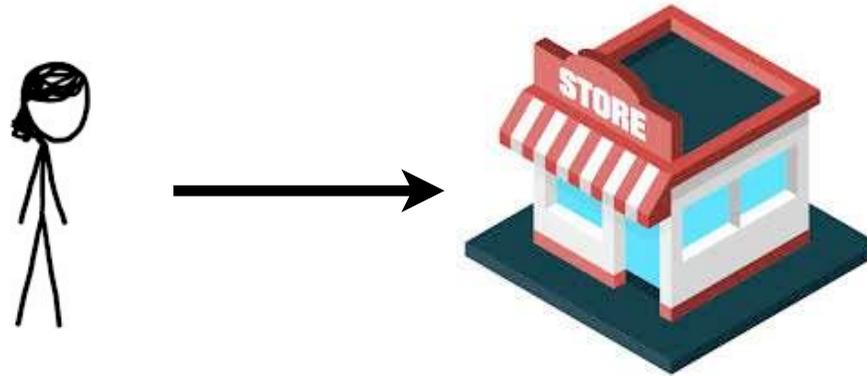


Colorless green ideas sleep furiously.

# Semantics

Defines what valid sentences *mean*

Megan goes to the store.



Colorless green ideas sleep furiously.

???

# Programming Language Semantics

- Some languages have the same problem!
- All syntactically valid sentences in Java have prescribed meaning
  - ...this meaning might not be useful...
  - ...and it definitely could be unintended...

# Learning a Language

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Have to start somewhere

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Megan goes to the store.

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Megan goes to the store.

Need nouns  
(that which can act  
or can be acted on)

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Megan **goes** to the store.

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(that which can act  
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**Need verbs**  
**(the actions)**

# Learning a Language

Have to start somewhere

---

Megan goes **to the** store.

Need nouns  
(that which can act  
or can be acted on)

Need verbs  
(the actions)

**Need connections between the two**

# The Point

- To make complete sentences, we need a lot of stuff
- Java requires a *lot* for a complete sentence

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- To make complete sentences, we need a lot of stuff
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public class MyClass {  
    public static void  
    main(String[] args) {  
        . . .  
    }  
}
```

# The Point

- To make complete sentences, we need a lot of stuff
- Java requires a *lot* for a complete sentence

```
public class MyClass {  
    public static void  
    main(String[] args) {  
        . . .  
    }  
}
```

For now, a  
magical  
incantation

**Let's see some code!**  
**(in jGrasp)**

**Example:**

HelloWorld.java

# Java Coding Process

Text  
Editor

Text  
Editor

emacs,vi,pico,nano...



Text  
Editor

emacs,vi,pico,nano...



Microsoft Word, Google Docs

Text  
Editor

emacs, vi, pico, nano...



~~Microsoft Word, Google Docs~~

Wanted: plain text without formatting

Also nice: syntax highlighting

