

CS 103000

Prof. Madeline Blount

Week 11:

OBJECT-ORIENTED  
PROGRAMMING

attendance link:

NONE TODAY



*Dall-E 2: cats learning C++ in the forest on '90's technology*



## OBJECT ORIENTED = NEW PARADIGM, classes

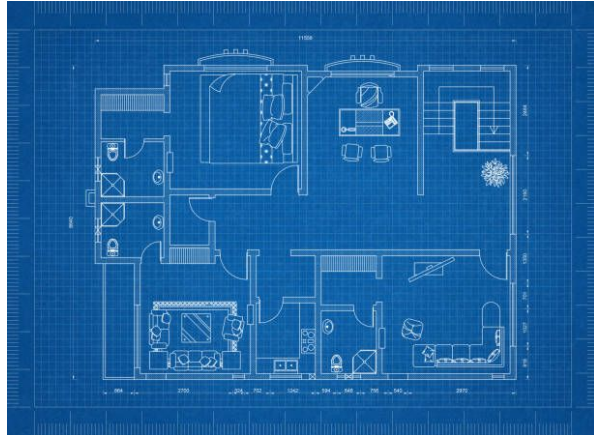
- Bjarne Stroustrup made C++ with classes in mind
- CLASS = make your own data type
- WHEN make a class?
  - When some data type will repeat
  - When your data will have multiple attributes
  - “Model” something in the world

# CLASS vs. OBJECT

- Class is the blueprint; object is an INSTANCE of the class

CLASS

blueprint



OBJECT

building



# CLASS vs. OBJECT

- Class is the blueprint; object is an INSTANCE of the class

CLASS

cookie cutter




OBJECT

cookie



# MAKING A CLASS

- Class definition
- Attributes, or member data (what are the THINGS that define the objects in this class? Size, name, color, rate, cost, etc.)
- Methods, or member functions (what are the things you can DO with the objects in this class)
  - functions defined with ::
  - "Get" functions = accessor
  - "Set" functions = mutator 





Jacarezinho, Rio de Janeiro, Brazil



Opinion

# Brazil's Favelas Offer Lessons in Building Trust

<https://www.nytimes.com/2023/04/09/opinion/brazil-favelas-pandemic-trust.html>



# CONSTRUCTOR

- object initialization function, runs automatically
- declared in **public** encapsulation
- Funny definitions syntax ... **DOES NOT HAVE RETURN TYPE!**

example: class named Movie

```
Movie::Movie() {  
  
}
```





# FILE STRUCTURE

imagine class called Movie...



main.cpp

#include



Movie.h

Class encapsulation,  
(attributes, member  
data, declarations)

#include



Movie.cpp

Class methods  
(function  
definitions)

```
compile: g++ main.cpp Movie.cpp
```