

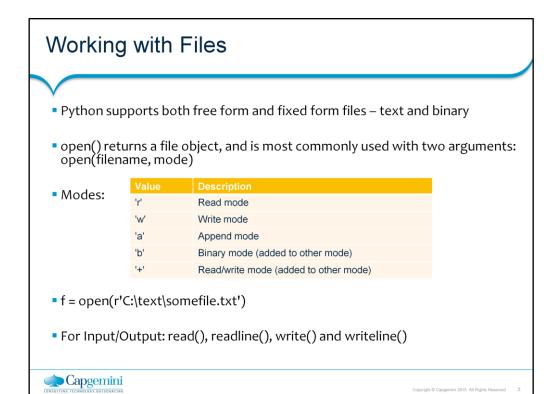
Instructor Notes:

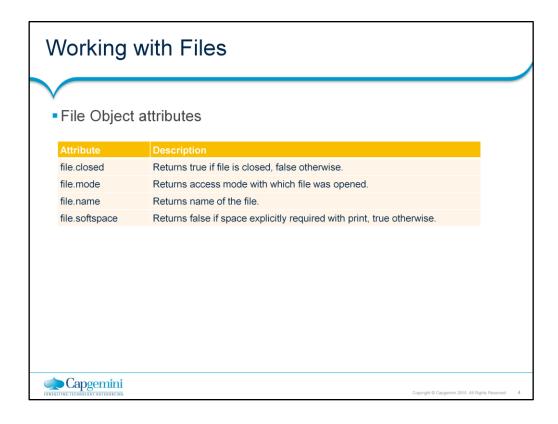
Lesson Objectives

- After completing this lesson, you will learn about:
 - File Handling
 - Class & Objects
 - Exception Handling









Instructor Notes:

Classes & Objects

- Python is an object-oriented programming language, which means that it provides features that support object-oriented programming (OOP).
- Sample class definition

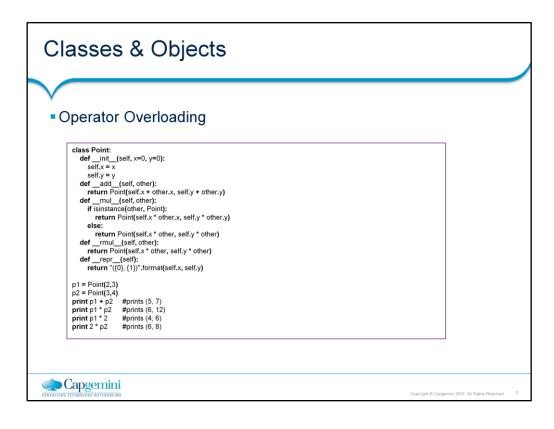
```
class Point:
    """ Point class represents and manipulates x,y coords. """
    def __init__(self):
        """ Create a new point at the origin """
        self.x = 0
        self.y = 0
p = Point()
print p.x, p.y
```

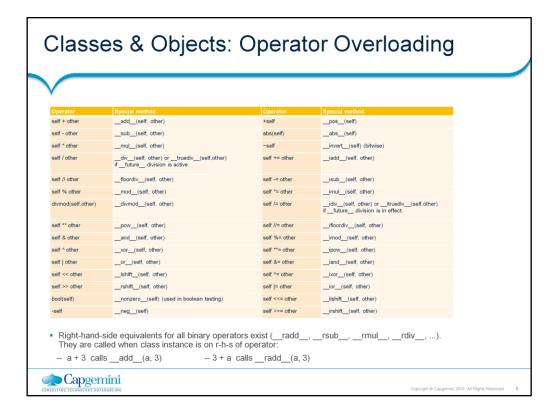
• Constructor: In Python we use __init__ as the constructor name

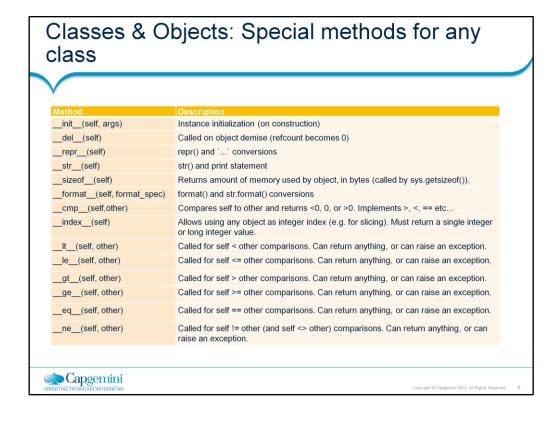


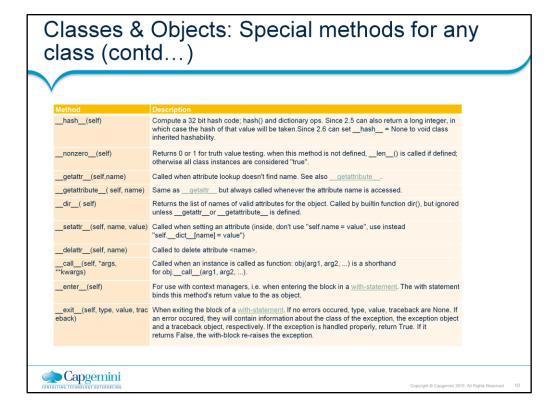
Instructor Notes:

■ Methods class Point: """ Point class represents and manipulates x,y coords. """ def __init__(self, x=0): self.x = x def x_square(self): return self.x ** 2 p = Point(2) print p.x_square() ■ Objects are mutable.









Instructor Notes:

Classes & Objects

- Inheritance / Sub-classing
 - We can create a class by inheriting all features from another class.

```
The "hello" method defined in class A will be inherited by class B.

The output will be:
Hello, I'm A.
Hello, I'm A.

Class A:

def hello(self):
print "Hello, I'm A."

class B(A):
pass
a = A()
b = B()
a.hello()
b.hello()
```

- Python supports a limited form of multiple inheritance as well.
 - class DerivedClassName(Base1, Base2, Base3):
- Derived classes may override methods of their base classes.



Instructor Notes:

Exception Handling

• Whenever a runtime error occurs, it creates an exception object. For example:

```
>>> print(55/0)
Traceback (most recent call last):
File "<interactive input>", line 1, in <module>
ZeroDivisionError: integer division or modulo by zero
```

• In python, the basic syntax of exception handling is

```
try:
some code to raise exception
except ExceptionClassName:
exception handler statements
```

Example

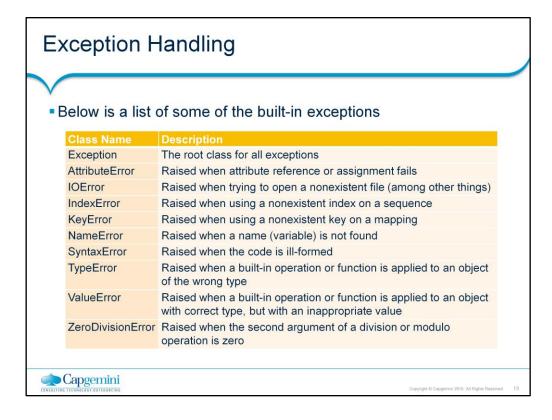
```
try:

1/0

except ZeroDivisionError:

print "Can't divide anything by zero."
```





Instructor Notes:

Exception Handling

- Catch more than one exception
 - except (ExceptionType1, ExceptionType2, ExceptionType3):
- Handle multiple exceptions one-by-one
 - except ExceptionType1: <code>
 - except ExceptionType2: <code>
- Catch all exceptions
 - except:
- Capture the exception object
 - except ExceptionType as e:
- Use the raise statement to throw an exception

raise ValueError("You've entered an incorrect value")

• The finally clause of try is used to perform cleanup activities



