* Computer science is the study of problem solving.
* Computer science uses abstraction as a tool for representing both processes and data.
* Abstract data types allow programmers to manage the complexity of a problem domain by hiding the details of the data.
* Python is a powerful, yet easy-to-use, object-oriented language.
* Lists, tuples, and strings are built in Python sequential collections.
* Dictionaries and sets are nonsequential collections of data.
* Classes allow programmers to implement abstract data types.
* Programmers can override standard methods as well as create new methods.
* Classes can be organized into hierarchies.
* A class constructor should always invoke the constructor of its parent before continuing on with its own data and behavior.

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| --- | --- | --- |
| abstract data type | abstraction | algorithm |
| class | computable | data abstraction |
| data structure | data type | deep equality |
| dictionary | encapsulation | exception |
| format operator | formatted strings | HAS-A relationship |
| implementation-independent | information hiding | inheritance |
| inheritance hierarchy | interface | IS-A relationship |
| list | list comprehension | method |
| mutability | object | procedural abstraction |
| programming | prompt | self |
| shallow equality | simulation | string |
| subclass | superclass | truth table |

\_\_radd\_\_ method is used when we have object which is not instance of the class and we want to add an instance of the class to this.

Example:

2+object of the class will use \_\_radd\_\_

Object of the class + 2 will use \_\_add\_\_

\_iadd\_\_ method is used to overload object+=another object

Str() vs repr() in Python

str() and repr() both are used to get a string representation of object.

if we print string using repr() function then it prints with a pair of quotes and if we calculate a value we get more precise value than str() function.

Implement \_\_repr\_\_ for any class you implement. This should be second nature. Implement \_\_str\_\_ if you think it would be useful to have a string version which errs on the side of readability.