CS 145 Day 18 worksheet – objects

Part A: design a class

A music app needs a `Song` class.

1. What attributes should each song have? Give each a name and an example value.

Attribute name	Example value
title	*'Clair de Lune'*
artist	'Debussy'
seconds	303
plays	12

2. What methods might a song have? Write how you would call each one on a song named `song`.

Method call	What it does or returns
song.play()	*plays the song*
song.length()	returns length as string, eg '5:03'
song.longer_than(other)	returns True if song longer than other
song.add_play()	adds 1 to its number of plays

3. The app also has playlists. What attributes does a `Playlist` have?

Attribute name	Example value
name	'Workout'
songs	a list of Song objects

4. What methods might a playlist have? Write how you would call each one on a playlist named `playlist`.

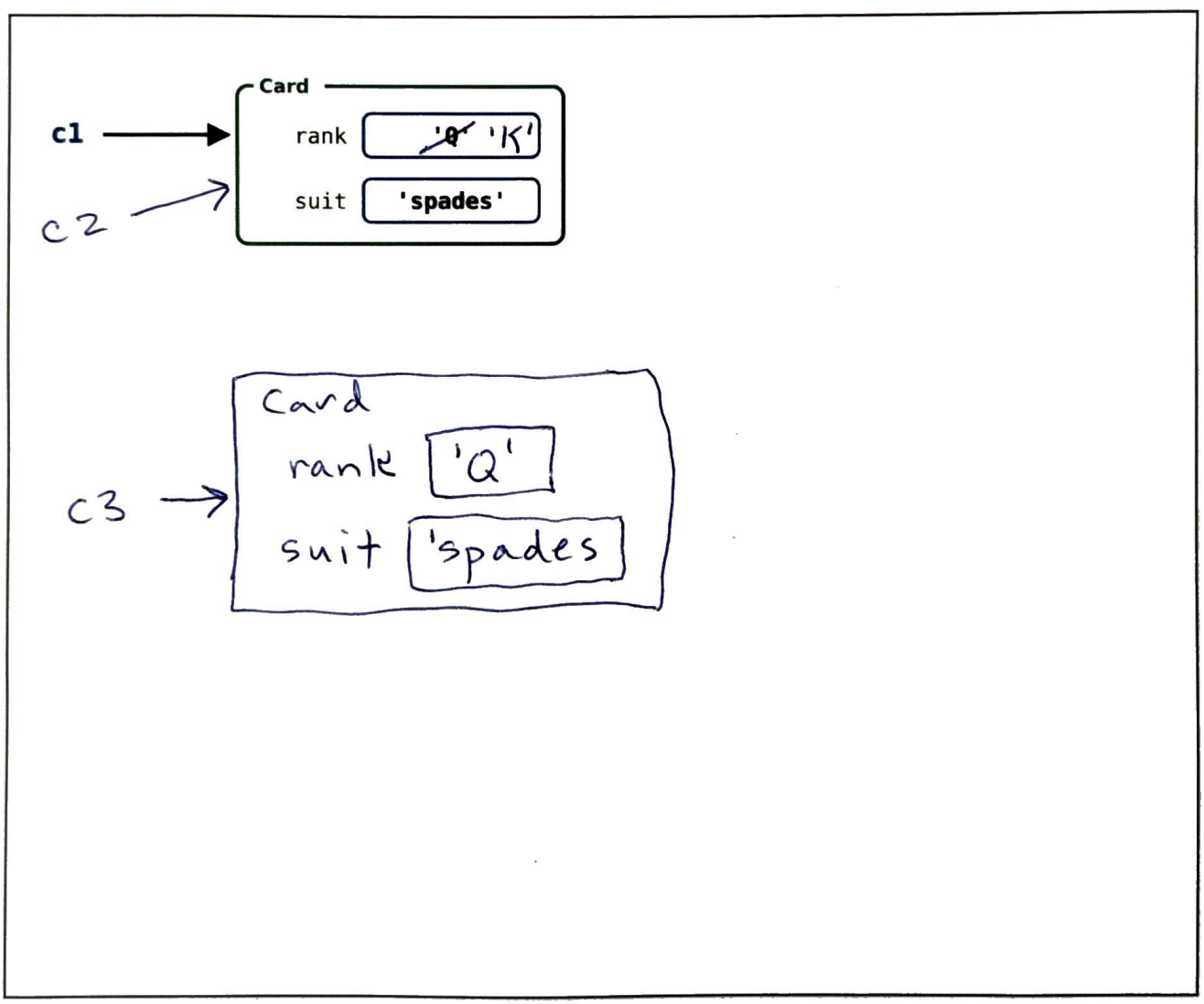
Method call	What it does or returns
playlist.add(song)	adds song to end of playlist
playlist.total_seconds()	returns total length in seconds
playlist.longest()	returns the longest Song

Part B: trace the objects

5. `Card` is the class from the slides, with `__str__` defined to return `self.rank + " of " + self.suit`.
Draw the variables and objects after all five lines of this code run. Then write what it prints.

```
c1 = Card("Q", "spades")
c2 = c1
c3 = Card("Q", "spades")
c2.rank = "K"
print(c1, c3)
```

Line 1 is drawn for you in the box. Add lines 2–5 to the same picture: draw each variable with an arrow to its object, and each object as a box with its attributes inside.



Output: K of spades Q of spades