

Python Programming

Special Methods

Homework 2

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Teaching, Training and Coaching since more than a decade!

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Problem #1: MyStr!

```
s1 = strv2('abcd')
s2 = strv2('cd')

r = s1 - s2          # ab
r = r * 2 + 2 * s2   # abababcdcd
r -= 'dcd'           # ababc
r += 'Xabcd' - s1 - 'Y' # ababcX

print(r, type(r))
```

- Built-in str class provides + and *, but if we want to subtract
 - E.g. abcd - cd = ab
 - That is remove it from its suffix
- Provide this class, with the requested flexibility

Problem #2: Sorting!

```
class Employee:
    def __init__(self, name, salary, age):
        self.name = name
        self.salary = salary
        self.age = age

    def __repr__(self):
        return f'({self.name}, {self.salary}, {self.age})'

    def __lt__(self, other):...
```

- Create an Employee class with the following 3 attributes
- The **lt method** order based on following order:
 - Name: decreasing
 - Salary, then age increasing

Problem #2: Sorting!

```
lst = [Employee('mostafa', 10, 18),  
       Employee('Ziad', 100, 19),  
       Employee('mostafa', 7, 35),  
       Employee('mostafa', 7, 26),  
       Employee('warda', 9, 18)]  
lst.sort()  
print(lst)  
# [(warda, 9, 18), (mostafa, 7, 26), (mostafa, 7, 35),  
#  (mostafa, 10, 18), (Ziad, 100, 19)]
```

Problem #3: More Sorting!

- We would like also to sort the objects but using lambda in 3 ways:
- 1) Based on age then name then salary, all increasing
- 2) Based on name (increasing), salary (decreasing), age (increasing)
- Do request 2 in two (technically different) ways using lambda

```
TODO 1
lst.sort(key=lambda ????)
# [(mostafa, 10, 18), (warda, 9, 18), (Ziad, 100, 19), (mostafa, 7, 26), (mostafa, 7, 35)]
```

```
TODO 2
# [(Ziad, 100, 19), (mostafa, 10, 18), (mostafa, 7, 26), (mostafa, 7, 35), (warda, 9, 18)]
```

```
TODO 3 (same target as 2)
```

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”