

Quiz Practice: Syntactic Sugar

CSCI040: ~~Computing for the Web~~ Introduction to Hacking

Problem 1. What is the output of the following code:

```
names = ['alice', 'bob', 'charlie', 'dave', 'eve']
accumulator = []
for i,name in enumerate(names):
    text = name + '_is_number_' + str(i)
    accumulator.append(text)
print('accumulator[3]=', accumulator[3])
```

Problem 2. What is the output of the following code:

```
names = ['alice', 'bob', 'charlie', 'dave', 'eve']
accumulator = []
for i,name in enumerate(names):
    text = 'number_' + str(i) + '_is_' + name
    accumulator.append(text)
print('accumulator[-1]=', accumulator[-1])
```

Problem 3. What is the output of the following code:

```
sentence = 'python_is_weird*'
accumulator = ''
for i,char in enumerate(sentence):
    if char == '*' and sentence[i-1] == '_':
        accumulator += '_'
    elif char == '*':
        accumulator += '!'
    else:
        accumulator += char
print('accumulator=', accumulator)
```

Problem 4. What is the output of the following code:

```
names = [ 'alice', 'bob', 'charlie', 'dave', 'eve' ]  
greetings = [ 'hello_' + name for name in names ]  
greeting = greetings[2]  
print( 'greeting=', greeting)
```

Problem 5. What is the output of the following code:

```
xs = [ x*x for x in range(10) ]  
num = xs[5]  
print( 'num=', num)
```

Problem 6. What is the output of the following code:

```
xs = [ x*x for x in range(10) if x%2 ]  
num = xs[3]  
print( 'num=', num)
```

Problem 7. What is the output of the following code:

```
xs = [ x**x for x in range(-3,3) ]  
num = xs[5]  
print( 'num=', num)
```

Problem 8. What is the output of the following code:

```
xs = [ x for x in range(-3,3) if x ]  
num = xs[3]  
print( 'num=', num)
```

Problem 9. What is the output of the following code:

```
sentence = "This is an example sentence with a few words in it."  
small_words = [ word.lower() for word in sentence.split() if len(word) <= 2]  
print( 'len(small_words)=', len(small_words))
```

Problem 10. What is the output of the following code:

```
names = [ 'alice', 'bob', 'charlie', 'dave', 'eve']  
greetings = [ name[0].upper() + name[1:].lower() for name in names ]  
greeting = greetings[1]  
print( 'greeting=', greeting)
```

Problem 11. What is the output of the following code:

```
sentence = "This is an example sentence with a few words in it."
words = [ word.lower() for word in sentence.split() if 't' in word ]
print('len(words)=', len(words))
```

Problem 12. What is the output of the following code:

```
sentence = "This is an example sentence with a few words in it."
xs = [ x.upper() for x in sentence if 't' in x ]
print('xs[1]=', xs[1])
```

Problem 13. What is the output of the following code:

```
sentence = "This is an example sentence with a few words in it."
small_words = [ word.lower() for word in sentence.split() if len(word) <= 2]
print('len(small_words)=', len(small_words))
```

Problem 14. What is the output of the following code:

```
xss = [ [ i for i in range(x) ] for x in [2, 3, 4] ]  
x = xss[-1][-2]  
print( 'x=', x)
```

Problem 15. What is the output of the following code:

```
xss = [ [ i for i in range(x) ] for x in [2, 3, 4] if x%2 == 0 ]  
x = xss[-1][-2]  
print( 'x=', x)
```

Problem 16. What is the output of the following code:

```
xss = [ [ i for i in range(x) if i%3 == 1 ] for x in [4, 5, 6] if x%2 == 1 ]  
x = xss[-1][-1]  
print( 'x=', x)
```

Problem 17. What is the output of the following code:

```
xss = [ [ i for i in range(x) if x%3 == 1 ] for x in [4, 5, 6] if x%2 == 1 ]  
print( 'xss=', xss)
```

Problem 18. What is the output of the following code:

```
xss = [ i for x in [2, 3, 4] if x%2 == 0 for i in range(x) ]  
x = xss[-1][-2]  
print( 'x=', x)
```

Problem 19. What is the output of the following code:

```
xss = [ i for x in [4, 5, 6] if x%2 == 1 for i in range(x) if i%3 == 1 ]  
x = xss[-1]  
print('x=', x)
```

Problem 20. What is the output of the following code:

```
xss = [ i for x in [4, 5, 6] if x%2 == 1 for i in range(x) if x%3 == 1 ]  
print('xss=', xss)
```

Problem 21. What is the output of the following code:

```

tweets = [
    { "source": "Twitter_Web_Client"
      , "text": "From_Donald_Trump: _Wishing_everyone_a_wonderful_holiday_&a_
        happy,_healthy,_prosperous_New_Year._Let\u2019s_think_like_champions_
        in_2010!"
      , "retweet_count": 28
    },
    { "source": "Twitter_Web_Client"
      , "text": "Trump_International_Tower_in_Chicago_ranked_6th_tallest_
        building_in_world_by_Council_on_Tall_Buildings_&_Urban_Habitat_http://
        bit.ly/sqvQq"
      , "retweet_count": 33
    },
    { "source": "Twitter_Web_Client"
      , "text": "Wishing_you_and_yours_a_very_Happy_and_Bountiful_Thanksgiving!"
      , "retweet_count": 13
    },
    { "source": "Twitter_for_iPhone"
      , "text": "RT_@realDonaldTrump: _Happy_Birthday_@DonaldJTrumpJr!\nhttps://t
        .co/uRxyCD3hBz"
      , "retweet_count": 9529
    },
    { "source": "Twitter_for_iPhone"
      , "text": "Happy_Birthday_@DonaldJTrumpJr!\nhttps://t.co/uRxyCD3hBz"
      , "retweet_count": 9529
    },
    { "source": "Twitter_for_Android"
      , "text": "Happy_New_Year_to_all,_including_to_my_many_enemies_and_those_
        who_have_fought_me_and_lost_so_badly_they_just_don't_know_what_to_do..
        Love!"
      , "retweet_count": 141853
    },
    { "source": "Twitter_for_Android"
      , "text": "Russians_are_playing_@CNN_and_@NBCNews_for_such_fools_--funny_
        to_watch,_they_don't_have_a_clue!_@FoxNews_totally_gets_it!"
      , "retweet_count": 23213
    },
    { "source": "Twitter_for_iPhone"
      , "text": "Join_@AmerIcan32,_founded_by_Hall_of_Fame_legend_@JimBrownNFL32
        _on_1/19/2017_in_Washington,_D.C._\u2026_https://t.co/9WJZ8iTCQV"
      , "retweet_count": 7366
    }
]

trump_tweets = [tweet for tweet in tweets if 'trump' in tweet['text'].lower()]
print('len(trump_tweets)=', len(trump_tweets))

```


Problem 22. What is the output of the following code:

```

tweets = [
    { "source": "Twitter_Web_Client"
      , "text": "From_Donald_Trump: _Wishing_everyone_a_wonderful_holiday_&a_
        happy,_healthy,_prosperous_New_Year._Let\u2019s_think_like_champions_
        in_2010!"
      , "retweet_count": 28
    },
    { "source": "Twitter_Web_Client"
      , "text": "Trump_International_Tower_in_Chicago_ranked_6th_tallest_
        building_in_world_by_Council_on_Tall_Buildings_&_Urban_Habitat_http://
        bit.ly/sqvQq"
      , "retweet_count": 33
    },
    { "source": "Twitter_Web_Client"
      , "text": "Wishing_you_and_yours_a_very_Happy_and_Bountiful_Thanksgiving!"
      , "retweet_count": 13
    },
    { "source": "Twitter_for_iPhone"
      , "text": "RT_@realDonaldTrump: _Happy_Birthday_@DonaldJTrumpJr!\nhttps://t
        .co/uRxyCD3hBz"
      , "retweet_count": 9529
    },
    { "source": "Twitter_for_iPhone"
      , "text": "Happy_Birthday_@DonaldJTrumpJr!\nhttps://t.co/uRxyCD3hBz"
      , "retweet_count": 9529
    },
    { "source": "Twitter_for_Android"
      , "text": "Happy_New_Year_to_all,_including_to_my_many_enemies_and_those_
        who_have_fought_me_and_lost_so_badly_they_just_don't_know_what_to_do..
        Love!"
      , "retweet_count": 141853
    },
    { "source": "Twitter_for_Android"
      , "text": "Russians_are_playing_@CNN_and_@NBCNews_for_such_fools_—funny_
        to_watch,_they_don't_have_a_clue!_@FoxNews_totally_gets_it!"
      , "retweet_count": 23213
    },
    { "source": "Twitter_for_iPhone"
      , "text": "Join_@AmerIcan32,_founded_by_Hall_of_Fame_legend_@JimBrownNFL32
        _on_1/19/2017_in_Washington,_D.C.\u2026https://t.co/9WJZ8iTCQV"
      , "retweet_count": 7366
    }
]

popular_tweets = [tweet for tweet in tweets if tweet['retweet_count'] > 100]
print('len(popular_tweets)=', len(popular_tweets))

```