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 == 1 ]
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:

```
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 19. 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!"
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        to watch, they don't have a clue! @FoxNews totally gets it!"
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    , "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
    }]

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