feb3 assignment

March 15, 2023

[ ]:
```
'''

1. Which keyword is used to create a function? Create a function to return a list of odd numbers in the
range of 1 to 25.

ans : def if used to create a function

'''
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[9]:
```
def print_odd_numbers():
    odd_numbers=[]
    for i in range (0, 26):
        if i% 2 !=0:
            odd_numbers.append(i)
    return odd_numbers
```

[11]:
```
print_odd_numbers()
```

[11]:
```
[1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25]
```

[ ]:
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'''
2. Why *args and **kwargs is used in some functions? Create a function each for *args and **kwargs to demonstrate their use.

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'''
ans: We use *args when we have to pass more than expected arguements in a tuple.
 We use it when we do not know how many arguements we will pass into it.

**kwargs is used to pass a variable number of keyword arguments to a function.(for dictionary)

'''
```

[1]:
```
def test1(*args):
    return args
```

[2]:
```
test1(1,2,3,4,5,6,7,7, "joswin",[1,2,3,4],(1,2,3,4,5))
```

[2]:
```
(1, 2, 3, 4, 5, 6, 7, 7, 'joswin', [1, 2, 3, 4], (1, 2, 3, 4, 5))
```

[3]:
```
test1(1,2,3,4,5,6,7,7, "joswin",[1,2,3,4],(1,2,3,4,5, 6))
```

[3]:
```
(1, 2, 3, 4, 5, 6, 7, 7, 'joswin', [1, 2, 3, 4], (1, 2, 3, 4, 5, 6))
```

[4]:
```
def test6(**kargs):
    return kargs
```

[6]:
```
test6()
```

[6]:
```
{}
```

[ ]:
```
'''
3. What is an iterator in python? Name the method used to initialise the␣
 ↪iterator object and the method
used for iteration. Use these methods to print the first five elements of the␣
 ↪given list [2, 4, 6, 8, 10, 12, 14, 16,
18, 20].

'''
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'''
ans: an object that contains a countable number of values.

The method used to initialize the iterator object in Python is __iter__().

The method used for iteration is __next__().
'''
```

[10]:
```
my_list = [2, 4, 6, 8, 10, 12, 14, 16, 18, 20]
my_itr=iter(my_list)
```

[11]:
```
for i in range(5):
    print(next(my_itr))
```

```
2
4
6
8
10
```

[ ]:
```
'''
4. What is a generator function in python? Why yield keyword is used? Give an␣
 ↪example of a generator
function?
ans :In Python, a generator function is a special kind of function that uses␣
 ↪the yield keyword instead of return to return a sequence of values.

The yield keyword is used in Python generator functions to return a sequence of␣
 ↪values, one at a time, without actually terminating the function.
'''
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[12]:
```
def even_numbers(n):
    i = 0
    while i < n:
        yield i*2
        i += 1
```

[13]:
```
for num in even_numbers(5):
    print(num)
```

```
0
2
4
6
8
```

[ ]:
```
'''
5. Create a generator function for prime numbers less than 1000. Use the next()␣
 ↪method to print the
first 20 prime numbers.
'''
```

[14]:
```
def primes():

    primes = [2]
    num = 3
    while num < 1000:
        is_prime = True
        for prime in primes:
            if num % prime == 0:
                is_prime = False
                break
        if is_prime:
            primes.append(num)
            yield num
        num += 2
prime_generator = primes()
```

```
for i in range(20):
    print(next(prime_generator))
```

```
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
```

[ ]: