Week-5

October 20, 2023

[ ]:
```
def add(a, b=0):
    return a + b

result = add(3)
print(result)
```

[ ]:
```
def greet(name="Guest"):
    return "Hello, " + name

message = greet()
print(message)
```

[ ]:
```
def square(n):
    result = n * n

result = square(4)
print(result)
```

[ ]:
```
def greet(name):
    return "Hello, " + name

message = greet("Alice")
print(message)
```

[ ]:
```
def add(a, b):
    return a + b

result = add(3, 4)
print(result)
```

[ ]:
```
x = 10

def modify_x():
    x = 5

modify_x()
print(x)
```

[ ]:
```
x = 10

def modify_x():
    global x
    x = x + 5

modify_x()
print(x)
```

[ ]:
```
def power(base, exponent):
    result = 1
    for _ in range(exponent):
        result *= base
    return result

value = power(2, 3)
print(value)
```

[ ]:
```
def my_function(x):
    return x * 2

result = my_function(5)
result = my_function(result)
result = my_function(result)
print(result)
```

[ ]:
```
x = 10

def modify_x():
    x = 5
    return x

result = modify_x()
print(x, result)
```

1 Lists

[ ]:
```
# Create a list of fruits
fruits = ["apple", "banana", "cherry", "date"]
```

[ ]:
```
# Access the second element in the list
second_fruit = fruits[1]
print(second_fruit)
```

[ ]:
```
# Change the third fruit in the list
fruits[2] = "grape"
```

[ ]:
```
# Add a new fruit to the end of the list
fruits.append("kiwi")
```

[ ]:
```
# Insert a fruit at a specific position in the list
fruits.insert(2, "orange")
```

[ ]:
```
# Remove a specific fruit from the list
fruits.remove("banana")
```

[ ]:
```
# Create a new list containing a slice of the original list
selected_fruits = fruits[1:4]
```

[ ]:
```
# Create a new list with every second fruit from the original list
alternate_fruits = fruits[::2]
```

[ ]:
```
# Create a new list containing the last two fruits from the original list
last_two_fruits = fruits[-2:]
```

[ ]:
```
# Calculate the length of the list
num_fruits = len(fruits)
```

[ ]:
```
# Create a nested list of lists
matrix = [[1, 2, 3], [4, 5, 6], [7, 8, 9]]
```

[ ]:
```
# Remove and return the last element from the list
last_fruit = fruits.pop()
```

[ ]:
```
# Extend the list with additional fruits
more_fruits = ["pineapple", "blueberry"]
fruits.extend(more_fruits)
```

[ ]:
```
# Create a new list with the fruits in reverse order
reversed_fruits = fruits[::-1]
```

[ ]:
```
# Create a new list containing fruits from index 1 to 3
selected_fruits = fruits[1:4]
```