JerryCheng cj1-6

In [ ]:
```python
import math

def sin_x(x):
    """Return the sine of x."""
    return math.sin(x)
```

In [ ]:
```python
def cos_x(x):
    """Return the cosine of x."""
    return math.cos(x)
```

In the first two Python cells, we defined two functions:

- `sin_x(x)` : This function takes a number `x` and returns its sine value.
- `cos_x(x)` : This function takes a number `x` and returns its cosine valu.

In [ ]:
```python
import numpy as np

# Generate 1000 points between 0 and 2
x_values = np.linspace(0, 2, 1000)
sin_values = [sin_x(x) for x in x_values]
cos_values = [cos_x(x) for x in x_values]
```

In the fourth Python cell, we created an array `x_values` with 1000 points between 0 and 2. Then, we used our previously defined functions `sin_x` and `cos_x` to compute the sine and cosine values for each x in `x_values`.

In [ ]:
```python
# Print the first 10 values
print("x\t\t sin(x)\t\t cos(x)")
for i in range(10):
    print(f"{x_values[i]:.5f}\t {sin_values[i]:.5f}\t {cos_values[i]:.5f}")
```

```
x               sin(x)          cos(x)
0.00000  0.00000         1.00000
0.00200  0.00200         1.00000
0.00400  0.00400         0.99999
0.00601  0.00601         0.99998
0.00801  0.00801         0.99997
0.01001  0.01001         0.99995
0.01201  0.01201         0.99993
0.01401  0.01401         0.99990
0.01602  0.01602         0.99987
0.01802  0.01802         0.99984
```

In [ ]:
```python

```