In [1]:

```
# 1. For loops & While Loops with two example each
for i in range(10):
    print(i, end='\t')

print()
my_num = range(10)
my_square = [i**2 for i in my_num]
print(my_square)

i = 0
while i < 10:
    print(i, end='\t')
    i += 1

print()
i = 0
while True:
    print('true', end='\t')
    if i > 10:
        break
    i+=1
```

In [2]:

```
# 2. If Statement, if-else, if elif.
i = 0
if (i == 0):
    print('i is zero')
elif (i != 0):
    print('i is non zero')

i = 2
if (i == 0):
    print('i is zero')
elif (i == 0):
    print('i is one')
else:
    print('i is niether zero nor one')


x = 'true' if True else 'false'
print(x)

x = 'true' if False else 'false'
print(x)
```

In [3]:

```
# 3. Creating User-defined Functions

def square_number(x):
    return x**2

print(square_number(2))

def append_list(list):
    list.append(1)

my_list = [0]
append_list(my_list)
print(my_list)
```

```
4
[0, 1]
```

In [4]:

```
#4. Escape Sequence in python
print("i will print \n a new line")
print("i will not print \\n a new line")

print("here is a tab \t printed")
print("here is no tab \\t printed")
```

```
i will print
 a new line
i will not print \n a new line
here is a tab   printed
here is no tab \t printed
```

In [5]:

```
# 5.Python Operators
print(1 + 2)
print(1- 2)
print(2 * 3)
print(3 / 2)
print(10 % 3)
print(10 // 3)
print(3**4)

print(1 == 1)
print(3 > 1)
print( True or (1<0))
print(1 in [0, 1, 2])
print(1 not in [0, 1, 2])
print((1>0) and (2>1))
x = [1]
print(x is not x.copy())
```

```
3
-1
6
1.5
1
3
81
True
True
True
True
False
True
True
```

In [6]:

```
# 6.Working on Lambda functions
def wrapper(func):
    print(func(2))

wrapper(lambda x : x**2)

x = [(lambda x: x**2)(x) for x in range(10)]
print(x)
```

```
4
[0, 1, 4, 9, 16, 25, 36, 49, 64, 81]
```

In [7]:

```
# 7.Python modules
import numpy as np
import matplotlib.pyplot as plt

x = np.linspace(0, 100, 100)
y = np.sin(x)
plt.plot(x, y)
```

Out[7]:

```
[<matplotlib.lines.Line2D at 0x146bcf071c8>]
```