

python programming

THE PERFECT WAY TO CODE YOUR FUTURE

Control structures
(loops, conditionals)

In Python, control structures are used to **control the flow of execution of a program**. The three main control structures in Python are:

1. If-else statements: If-else statements are used to test conditions and execute different blocks of code based on the result of the test. The basic syntax for an if-else statement is:

```
if condition:
    # code to be executed if condition is True
else:
    # code to be executed if condition is False
```


example



```
x = 10

if x > 5:
    print("x is greater than 5")
else:
    print("x is less than or equal to 5")
```

2.For loops: For loops are used to iterate over a sequence of elements, such as a list, tuple, or string, and execute a block of code for each element in the sequence. The basic syntax for a for loop is:

```
for variable in sequence:  
    # code to be executed for each element in the sequence
```

example

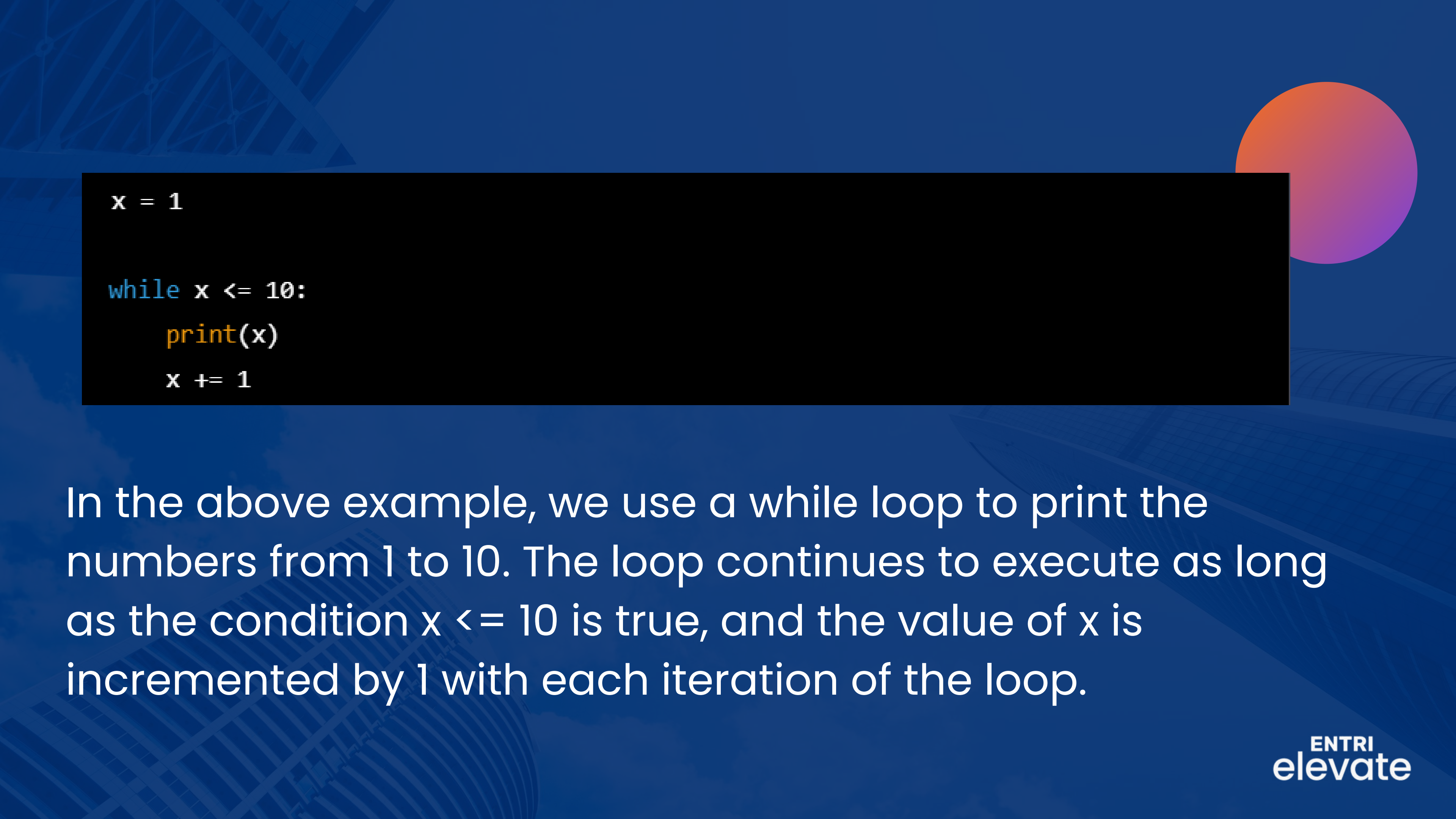
```
fruits = ["apple", "banana", "cherry"]  
  
for fruit in fruits:  
    print(fruit)
```


3. While loops: While loops are used to repeatedly execute a block of code as long as a certain condition is true. The basic syntax for a while loop is:

```
while condition:  
    # code to be executed as long as condition is true
```

example

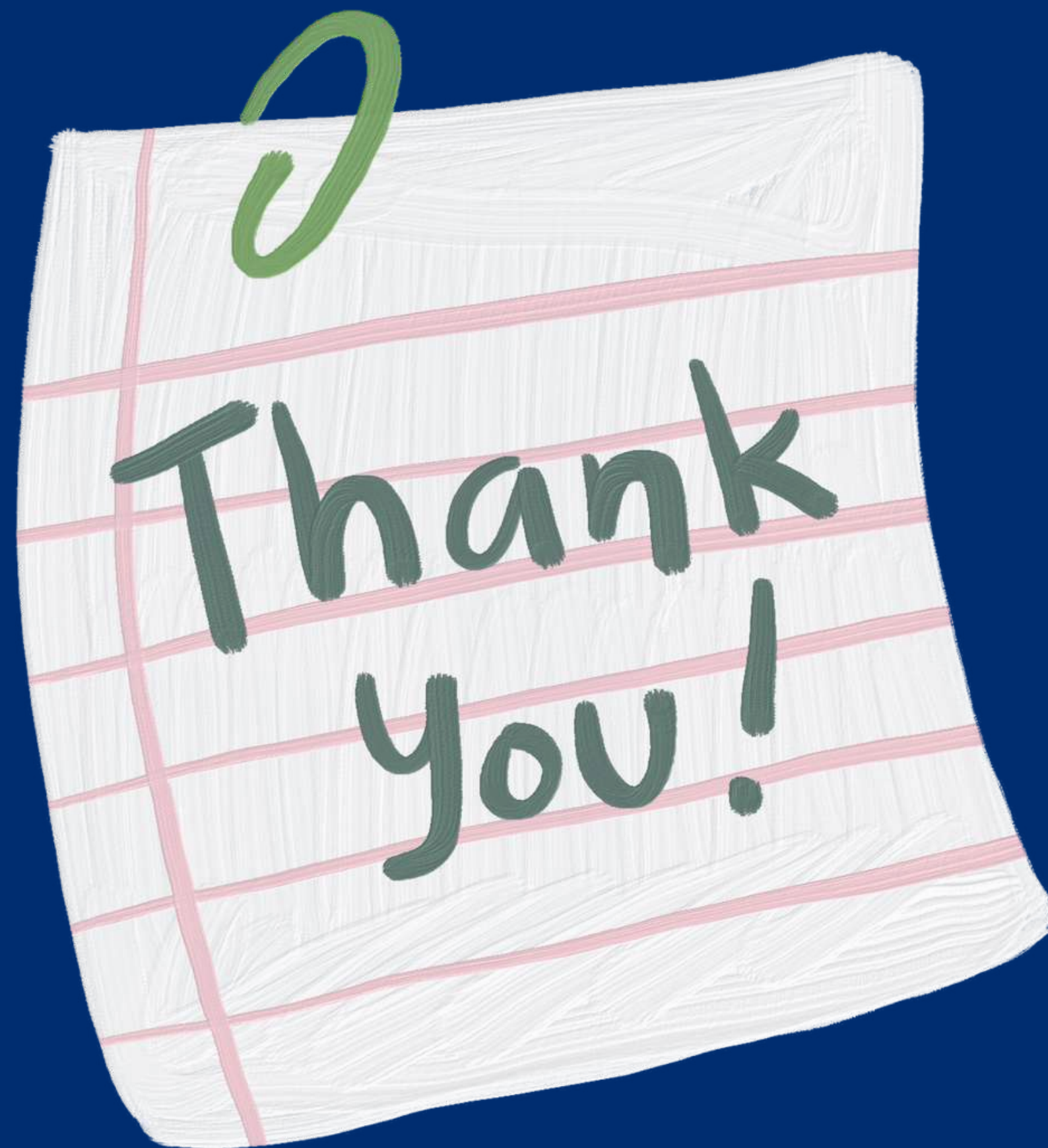
```
x = 1  
  
while x <= 10:  
    print(x)  
    x += 1
```



```
x = 1

while x <= 10:
    print(x)
    x += 1
```

In the above example, we use a while loop to print the numbers from 1 to 10. The loop continues to execute as long as the condition $x \leq 10$ is true, and the value of x is incremented by 1 with each iteration of the loop.



Thank
you!