

// FOR – the basic loop

```
for letter in "Bull":
    print(letter)

# B
# u
# l
# l
```

Runs once per item. Colon + 4 spaces — mandatory.

// RANGE()

```
for i in range(5):          # 0 1 2 3 4
for i in range(1, 6):      # 1 2 3 4 5
for i in range(0, 10, 2):  # 0 2 4 6 8
for i in range(5, 0, -1):  # 5 4 3 2 1
```

Stop never included. Default start 0, step 1.

// LOOP COUNTER

```
count = 0                # define before

for letter in "Bull":
    count += 1           # update inside

print(count)            # use after – 4

# works with += -= *=
```

Define before. Update inside. Use after.

// RANGE() WITH LEN()

```
word = "Bull"

for i in range(len(word)):
    print(f"Index {i}: {word[i]}")

# Index 0: B
# Index 1: u
# Index 2: l
# Index 3: l
```

Position and character — at the same time.

// ENUMERATE()

```
for index, letter in enumerate("Bull"):
    print(f"{index}: {letter}")

# 0: B 1: u 2: l 3: l

# start from 1
for index, letter in enumerate("Bull", start=1):
    print(f"{index}: {letter}")

# 1: B 2: u 3: l 4: l
```

Position and value — no manual counter needed.

// ZIP()

```
for a, b in zip("Bull", "Horn"):
    print(f"{a} – {b}")

# B – H
# u – o
# l – r
# l – n

# stops at the shortest sequence
```

Two sequences, one loop. Items matched by position.

// COMMON MISTAKES

```
! Every for line ends with :
! Indentation is syntax – always 4 spaces
! Loop variable is a copy – not the original
! Define counters before the loop – never inside
! range(5) starts at 0 – not 1
! Stop is never included – range(1,6) gives 1-5
```