FOUNDATION LESSON

WEEK 2 · LESSON 15

Control and repeat loops

break and continue / while loops

CONTROL AND REPEAT LOOPS

MENTAL MODEL

Control and repeat loops

continue skips the remainder of one iteration; break leaves the nearest loop; while repeats while a condition remains true.
A while loop can execute zero times. Identify which statement makes progress toward its termination condition.

SKIP AND STOP

CODE WALKTHROUGH W02-L15-S03

```
01  values = [10, -1, 20, 0, 30]
02  for value in values:
03      if value < 0:
04          continue
05      if value == 0:
06          break
07      print(value)
```

WHAT TO TRACK

Skip and stop

PREDICT THE RESULT

Predict the output.
Explain each operation.
Pause before continuing.

SKIP AND STOP

CODE WALKTHROUGH W02-L15-S04

```
values = [10, -1, 20, 0, 30]
for value in values:
    if value < 0:
        continue
    if value == 0:
        break
    print(value)
```

WHAT TO TRACK

Skip and stop

VALIDATE THE RESULT

```
10
20
```

WHILE TERMINATION

CODE WALKTHROUGH W02-L15-S05

```
01  balance = 1000
02  months = 0
03  while balance > 0:
04      balance -= 250
05      months += 1
06  print(months)
```

WHAT TO TRACK

While termination

PREDICT THE RESULT

Predict the output.
Explain each operation.
Pause before continuing.

WHILE TERMINATION

CODE WALKTHROUGH W02-L15-S06

```
01  balance = 1000
02  months = 0
03  while balance > 0:
04      balance -= 250
05      months += 1
06  print(months)
```

WHAT TO TRACK

While termination

VALIDATE THE RESULT

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INDEPENDENT PREDICTION

LEARNER PRACTICE

Independent prediction

Change one input in control and repeat loops and test a boundary or edge case.

01 Predict the exact output.
02 Change only one input.
03 Run in a fresh Python process.
04 Explain any difference.

PREDICT · MODIFY · RUN

01 Restate the supplied rules.

02 Predict the result.

03 Modify and run the code.

04 Compare actual output.

05 Explain any difference.

CONTROL AND REPEAT LOOPS

Recap and next step

continue skips the remainder of one iteration; break leaves the nearest loop; while repeats while a condition remains true. A while loop can execute zero times. Identify which statement makes progress toward its termination condition.

UNDERSTAND APPLY VALIDATE EXPLAIN