FOUNDATION LESSON

WEEK 2 · LESSON 5

Missing versus zero

Truthiness, None and empty values / Week 2 integrated practice: eligibility and transaction rules

MISSING VERSUS ZERO

MENTAL MODEL

Missing versus zero

None is a distinct missing-value marker; zero, empty text and False have different meanings despite all being falsey.
Use is None for missing data. A zero numeric balance may be supplied and valid even though bool(0) is False.

EMPTY AND MISSING

CODE WALKTHROUGH W02-L05-S03

```
01  value = ""
02  if value:
03      print("provided")
04  else:
05      print("empty")
06  missing = None
07  print(missing is None)
```

WHAT TO TRACK

Empty and missing

PREDICT THE RESULT

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

EMPTY AND MISSING

CODE WALKTHROUGH W02-L05-S04

```
01  value = ""
02  if value:
03      print("provided")
04  else:
05      print("empty")
06  missing = None
07  print(missing is None)
```

WHAT TO TRACK

Empty and missing

VALIDATE THE RESULT

```
empty
True
```

RULE PRECEDENCE

CODE WALKTHROUGH W02-L05-S05

```
01  amount = 3200
02  region = "GR"
03  if amount is None:
04      result = "missing amount"
05  elif amount <= 0:
06      result = "invalid"
07  elif region == "XX" or region == "YY":
08      result = "manual review"
09  elif amount >= 3000:
10      result = "enhanced check"
11  else:
12      result = "standard"
13  print(result)
```

WHAT TO TRACK

Rule precedence

PREDICT THE RESULT

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

RULE PRECEDENCE

CODE WALKTHROUGH W02-L05-S06

```
amount = 3200
region = "GR"
if amount is None:
    result = "missing amount"
elif amount <= 0:
    result = "invalid"
elif region == "XX" or region == "YY":
    result = "manual review"
elif amount >= 3000:
    result = "enhanced check"
else:
    result = "standard"
print(result)
```

WHAT TO TRACK

Rule precedence

VALIDATE THE RESULT

enhanced check

ZERO IS SUPPLIED

CODE WALKTHROUGH W02-L05-S07

```
01  balance = 0
02  print(bool(balance))
03  print(balance is not None)
```

WHAT TO TRACK

Zero is supplied

PREDICT THE RESULT

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

ZERO IS SUPPLIED

CODE WALKTHROUGH W02-L05-S08

```
01  balance = 0
02  print(bool(balance))
03  print(balance is not None)
```

WHAT TO TRACK

Zero is supplied

VALIDATE THE RESULT

```
False
True
```

INDEPENDENT PREDICTION

LEARNER PRACTICE

Independent prediction

Change one input in missing versus zero 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.

MISSING VERSUS ZERO

Recap and next step

None is a distinct missing-value marker; zero, empty text and False have different meanings despite all being falsey. Use is None for missing data. A zero numeric balance may be supplied and valid even though bool(0) is False.

UNDERSTAND APPLY VALIDATE EXPLAIN