

Foundations in Business Programming

Fall 2025 Midterm

Instructor: Nathaniel Hobbs
foundations@hobbsresearch.com

Student name: _____

Student ID: _____

Student email address: _____

- Read these instructions carefully.
- Do *not* turn this page until you are instructed to do so.
- Fill in your personal info as indicated above.
- You have the whole class (1 hr 20 min).
- This exam is worth **100 points**.

Point Summary

Section	Points per Question	Total Points
Multiple Choice (8 questions)	2	16
True/False (8 questions)	2	16
Code Tracing (4 questions)	8	32
Open Ended (3 questions)	12	36
Total		100

1 Multiple Choice Questions

Each question in this section is worth **2 points**.

1.1 What is the value of `len((1,2,3,4))`?

1. 3
2. 4
3. 5
4. Error

1.2 What is printed by the following code?

```
print(3 * "ab")
```

1. ababab
2. abab
3. ab3
4. Error

1.3 Which of the following creates a list?

1. (1,2,3)
2. [1,2,3]
3. {1,2,3}
4. <1,2,3>

1.4 Which operator tests equality in Python?

1. =
2. ==
3. :=
4. !=

1.5 What does `break` do inside a loop?

1. Stops the whole program
2. Exits the loop immediately
3. Skips to the next iteration
4. Restarts the loop

1.6 What values does `range(3)` generate?

1. 1, 2, 3
2. 0, 1, 2
3. 0, 1, 2, 3
4. 3, 2, 1

1.7 What does `enumerate(L)` produce in a for loop?

1. The values of L only
2. The indices of L only
3. Pairs of the form (`index`, `value`)
4. Pairs of the form (`value`, `index`)

1.8 What is printed by the following code?

```
print(type((1,2)))
```

1. `tuple`
2. `list`
3. `<class 'tuple'>`
4. Error

2 True/False Questions

Each question in this section is worth **2 points**.

- 2.1 Python lists are mutable. (True/False)
- 2.2 Dictionaries map keys to values. (True/False)
- 2.3 `range(1,5)` contains the value 5. (True/False)
- 2.4 A function can call another function. (True/False)
- 2.5 `continue` exits the loop completely. (True/False)
- 2.6 Tuples are ordered. (True/False)
- 2.7 A list index must be an integer. (True/False)
- 2.8 `len` works on both lists and strings. (True/False)

3 Code Tracing

Each question in this section is worth **8 points**.

3.1 What is printed by this code?

```
x = 1
while x < 4:
    print(x)
    x += 1
```

3.2 What is printed by this code?

```
L = [1, 3, 5]

for i in range(len(L)):
    print(L[i])
```

3.3 What is printed by this code?

```
def g(x):
    return x * 3

print(g(2) + g(1))
```

3.4 What is printed by this code?

```
nums = [4, 5, 6, 7]

s = 0
for n in nums:
    if n % 2 == 0:
        s += n

print(s)
```

4 Open Ended Questions

Each question in this section is worth **12 points**.

4.1 Write a function called `countGreater` that takes as input a list of numbers `L` and a number `k`, and returns how many values in `L` are greater than `k`.

4.2 Write a function called `sumList` that takes as input a list of numbers and returns the sum of all numbers in the list.

4.3 Write a function called `reverseList` that takes as input a list `L` and returns a new list containing the same elements in reverse order.