

# CS101 Practice Midterm 1

- Be sure to enter your NetID and the code below on your Scantron.
- Do not turn this page until instructed to.
- There are 25 questions worth 1 point each.
- Each question has only **one** correct answer.
- You must not communicate with other students during this test.
- No books, notes, or electronic devices allowed.
- This is a 45 minute exam.
- There are several different versions of this exam.

## 1. Fill in your information:

Full Name: \_\_\_\_\_

UIN (Student Number): \_\_\_\_\_

NetID: \_\_\_\_\_

## 2. Fill in the following answers on the Scantron form:

**Zone 1**

1/1. (1 point) Which of the following represents a single valid string?

- A. `'What's your business here?' he demanded, grimly. 'Who are you?'`
  - B. `"I'll keep him out five minutes," he exclaimed. "You won't object?"`
  - C. `"I'll not hold my tongue!" I said. "Let the door remain shut, and be quiet!"`
  - D. ★
- `"What has Heathcliff done to you?" I asked. "In what has he wronged you?"`
- E. None of the other answers form a single valid string.

**Solution.**

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2/1. (1 point) Evaluating which of the following expressions will produce a value of type list?

A. `len([3333])`

B. ★

`["1", "2", "3"] + ["4"]`

C. `list("ABC").append("D")`

D. `str(["A", "B"]).lower()`

**Solution.**

---

3/1. (1 point) Consider the following program:

```
x=["tick","tock"]  
x[0]=x.sort()  
x=x[-2]
```

What is the **type** of x after the program is run?

- A. ★ None
- B. Tuple
- C. List
- D. String
- E. None of the other answers are correct.

**Solution.**

---

4/1. (1 point) Consider the following program:

```
x=["tick","tock"]  
x[0]=x.reverse()  
x=x[-2]
```

What is the **type** of x after the program is run?

- A. ★ None
- B. Tuple
- C. List
- D. String
- E. None of the other answers are correct.

**Solution.**

---

5/1. (1 point) Consider the following program:

```
x=["tick","tock"]  
x[-1]=list(x[0])  
x=x[1],x[0]
```

What is the **type** of x after the program is run?

- A. None
- B. ★ Tuple
- C. List
- D. String
- E. None of the other answers are correct.

**Solution.**

---

6/1. (1 point) Consider the following program:

```
x=["tick","tock"]  
x[0]=len(list(x[-1]))  
x=x[-2]
```

What is the **type** of x after the program is run?

- A. None
- B. ★ Integer
- C. List
- D. String
- E. None of the other answers are correct.

**Solution.**

---



7/1. (1 point) Consider the following program:

```
x=["tick","tock"]  
x[0]=(len(list(x[-1])),x[1])  
x=x[1]
```

What is the **type** of x after the program is run?

- A. None
- B. Integer
- C. List
- D. ★ String
- E. None of the other answers are correct.

**Solution.**

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8/1. (1 point) Consider the following program:

```
a=list("REDUCIO")
a.sort()
a[0],a[1]=a[-2],a[-1]
x=""
for e in a:
    x=x+e
```

What is the **value** of x after this program is executed?

- A. ★
- "RUEIORU"
- B. "IODUCIO"
- C. "UREIORU"
- D. "OIDUCIO"
- E. None of the other answers are correct.

**Solution.**

---

9/1. (1 point) Consider the following program:

```
a=list("ACCIO")
a.reverse()
a[1],a[2]=a[2],a[3]
x=""
for e in a:
    x=x+e
```

What is the **value** of x after this program is executed?

- A. ★
- "OCCCA"
- B. "ACCCO"
- C. "OIICC"
- D. "AIICC"
- E. None of the other answers are correct.

**Solution.**

---

10/1. (1 point) Consider the following program:

```
s="CHARIZARD"  
x=""  
for i in range(0,len(s)):  
    if (i>3) and (i<6):  
        x+=s[i:i+2]
```

What is the **value** of x after this program is executed?

- A. ★
- B. "IZZA"
- C. "RI"
- D. "RIIZ"
- E. None of the other answers are correct.

**Solution.**

---

11/1. (1 point) Consider the following program:

```
def fun(a,b):  
    if a>b and a!=4:  
        return b==5  
    else:  
        return a==3  
a=5  
b=4  
print fun(a,b)
```

What is printed out by this program?

- A. False
- B. ★ 4
- C. 5
- D. True
- E. None of the other answers. This code is not valid.

**Solution.**

---

12/1. (1 point) Consider the following incomplete function.

```
def pal(s):  
    a=list(s)  
    if ???:  
        return True  
    else:  
        return False
```

The function is intended to return True if and only if the input string *s* is a palindrome. A palindrome is a string that reads the same forward and backward, like “ABBA” or “RACECAR”. What should replace the three question marks to complete the function?

A. `a + a == a * 2`

B. ★

`a.reverse()==a`

C. `(len(a) % 2) == 0`

D. None of the other answers are correct.

**Solution.**

---

13/1. (1 point) Consider the following program:

```
s="SQUIRTLE"  
x=""  
for i in range(0,len(s)):  
    if (i>4) and (i<7):  
        x+=s[i:i+2]
```

What is the **value** of x after this program is executed?

- A. ★
- "TLLE"
- B. "RTTL"
- C. "RTTLE"
- D. "RT"
- E. None of the other answers are correct.

**Solution.**

---

14/1. (1 point) Consider the following program:

```
s="MEWTWO"  
x=""  
for i in range(0,len(s)):  
    if (i>1) and (i<3):  
        x+=s[i:i+3]
```

What is the **value** of x after this program is executed?

A. ★

"WTW"

B. "EWT"

C. "WTWO"

D. "EWTW"

E. None of the other answers are correct.

**Solution.**

---



15/1. (1 point) Consider the following program.

```
def fun(a,b):  
    return a-b  
x=0  
for i in range(1,4):  
    x=x+fun(i,x)
```

After it is run, what is the final **value** of x?

- A. ★
- 3
- B. 4
- C. 5
- D. None of the other answers are correct.

**Solution.**

---

16/1. (1 point) Consider the following program.

```
def fun(a,b):  
    return a-b  
x=0  
for i in range(2,5):  
    x=x+fun(i,x)  
    print x
```

After it is run, what is the final **value** of x?

- A. 3
- B. ★
- 4
- C. 5
- D. None of the other answers are correct.

**Solution.**

---

17/1. (1 point) Consider the following program.

```
def fun(a,b):  
    return a-b  
x=0  
for i in range(-1,3):  
    x=x+fun(i,x)  
    print x
```

After it is run, what is the final **value** of x?

- A. ★
- 2
- B. 3
- C. 4
- D. None of the other answers are correct.

**Solution.**

---

18/1. (1 point) Evaluate the following expression:

```
len("ABCD"[1:3])
```

What value is produced?

- A. 1
- B. 3
- C. ★ 2
- D. 4

**Solution.**

---

19/1. (1 point) Consider the following program.

```
x=0
i=1
while(i*i)<=36:
    if ((i*i)%2)==0:
        x+=1
    i=i+1
```

After it is run, what is the final **value** of x?

- A. ★
- 3
- B. 4
- C. 5
- D. None of the other answers are correct.

**Solution.**

---

20/1. (1 point) Consider the following program.

```
x=0
i=1
while(i*i)<=49:
    if (i%2)==1:
        x+=1
    i=i+1
```

After it is run, what is the final **value** of x?

- A. 3
- B. ★
- 4
- C. 5
- D. None of the other answers are correct.

**Solution.**

---

21/1. (1 point) Evaluate the following expression:

```
"ABC".join(["A","B","C"])
```

What value is produced?

A. "ABCABCABC"

B. ★

"AABCBAABCC"

C. "AAABBBCCC"

D. None of the other answers are correct.

**Solution.**

---

22/1. (1 point) Evaluate the following expression:

```
"+" .join("ABABABA".split("A"))
```

What value is produced?

A. "ABABABA"

B. ★

"B+B+B"

C. "B+B+B"

D. None of the other answers are correct.

**Solution.**

---



23/1. (1 point) Consider the following program:

```
def fun(a,b):  
    for i in range(a,b):  
        if (i%3)==0:  
            return i  
    return a==b
```

```
a=4  
b=6  
print fun(a,b)
```

What is printed out by this program?

- A. ★ False
- B. 6
- C. 3
- D. True
- E. None of the other answers. This code is not valid.

**Solution.**

---

24/1. (1 point) Consider the following program:

```
s="GABE&TYCHO"  
x=s[3:6]
```

What is the **value** of x after this program is executed?

- A. ★
- "E&T"
- B. "E&"
- C. "BE&"
- D. "BE"
- E. None of the other answers are correct.

**Solution.**

---

25/1. (1 point) Consider the following program:

```
s="A,E,I,O,U".split(",")  
s=s[0:3]  
s=s.sort()
```

What is the **value** of s after this program is executed?

- A. ['A', 'E', 'I']
- B. ['A', 'E', 'I', 'O']
- C. "AEI"
- D. "AEIO"
- E. ★ None of the other answers are correct.

**Solution.**

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