CSE 8A
Fall 2021
Midterm Exam

Total Possible Points: 26.5 (1.5 extra credit points included). There are 6 questions for this exam.

Score needed to achieve 100%: 25 points

This exam is closed book, closed notes. You can use any empty spaces on this paper as scratch and **you should write your answers clearly on the answer sheet**. You should tear off the answer sheet on the last page. All pages in this exam book must be turned in, including all the scratch papers we have provided.

By signing your name below, you are agreeing that you will not discuss any part of this exam with anyone who is not currently taking the exam in this room until after the exam grades have been returned. This includes posting any information about this exam on Edstem or any other social media. Discussing any aspect of this exam with anyone outside of this room constitutes a violation of the academic integrity agreement for CSE 8A.

Signature: _____

Name (please print clearly):_____

PID:_____

Your seat number: _____

DO NOT OPEN THIS EXAM UNTIL YOU ARE INSTRUCTED TO DO SO.

PLEASE STOP WRITING ON THE EXAM ONCE THE TIME IS UP. FAILURE TO DO SO WILL RESULT IN A 0 FOR THIS EXAM.

1 (4 pts). Variables and data types.

What is the type of the following variables and expressions? Write your answer on the answer sheet. Your choices should be int, float, or string. If the expression will cause an error, just write error.

a. `3` b. `3.0` c. `'3'` d. `"3.0"`

e. `3/2` f. `3//2` g. `'3' + '0'` h. `'3' + 3`

2 (2.5 pts). Type casting

What is the result of the following type casting operations? If an expression will cause an error, just answer error. Please note that you have to be precise when writing your answer. For example, 3.0 and 3 are treated differently. Write your answer on the answer sheet.

a. `int(3.0)` b. `int(3)` c. `float('3.0')` d. `int('3')`

e. `int('3.0')`

3 (4 pts). Branching statement

Given the following two blocks of code, please select all the true statements. Select all that apply.

```
#Block 1
if condition A:
    statement A
if condition B:
    statement B
elif condition C:
    statement C
if condition D:
    statement D
else:
    statement E
```

```
#Block 2
if condition A:
    statement A
else:
    statement B
if condition C:
    statement C
elif condition D:
    statement D
else:
    statement E
```

A. For block 1, it is possible statements A and B both execute

B. For block 2, it is possible statements A and B both execute

C. For block 1, it is possible that A, B, and D all execute

D. For block 2, it is possible that A, B, and D all execute

E. For block 1, it is IMPOSSIBLE that A and D both execute

F. For block 2, it is IMPOSSIBLE that A and D both execute

G. For block 1, B and C will never execute at the same time.

4 (5 pts). Method in Python

Write a method named `getFirstLetter`. It takes a string and returns the first letter of the string. If the string has no character it returns None type. Here are some examples

`getFirstLetter('Paul')` --> returns `'P'`
`getFirstLetter(' CSE8A')` --> returns `' '`. (Note that there is a space before CSE8A in the argument. The function returns a space
`getFirstLetter('')` --> returns `None` type (empty string, returns None type)

5 (7 pts). Loops and beyond

a). What is the output of the following code? Write your answer on the provided space on the answer sheet. You are given an exact number of lines to write your result. Note that we don't give partial credit for a blank.

```
for i in range(2, 10, 2):
    if i%2 == 0:
        print(i)
    else:
        print(i+1)
```

b). What is the output of the following code? Write your answer on the provided space on the answer sheet. Assume we will enter 1 2 and 3 when prompted for input. You are given an exact number of lines to write your result. Some of the blanks are already filled as part of the input. Note that we don't give partial credit for a blank.

```
result = True
while result == True:
    val = int(input("value: "))
    if val == 1 or val == 2:
        print(val + 1)
        continue

    print(val + 2)
    if val >= 3 and val <= 5:
        break
```

6 (4 pts). Lists

What will be printed out from the following code. Write your answer on the provided space on the answer sheet. You are given an exact number of lines to write your result. Note that we don't give partial credit for a blank.

```
nums = [1, 2, 3]
for i in nums:
    i += 1
#note the index of the list for print statements.
print(nums[1])
print(nums[-1])

for j in range(len(nums)):
    nums[j] += 1
#note the index of the list for print statements.
print(nums[1])
print(nums[2])
```

Scratch Paper

Scratch Paper

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Name: _____ PID: _____

Problem 1: Variables and data types

a. _____ b. _____ c. _____ d. _____ e. _____ f. _____

g. _____ h. _____

Problem 2: Type casting

a. _____ b. _____ c. _____ d. _____ e. _____

Problem 3: Branching Statement

_____

Problem 4: Methods in Python (write the whole function including the function header)

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Name: _____ PID: _____

Problem 5: Loop and beyond part a)

_____

_____

_____

_____

Problem 5: Loop and beyond part b)

value: 1 .

_____

value: 2 .

_____

value: 3 .

_____

Problem 6: List

_____

_____

_____

_____