

# CMPT 120-D400 Mini Midterm, Fall 2024

This is a **20 minute closed book exam**: notes, books, computers, calculators, electronic devices, etc. are **not** permitted.

## Semester Names

a) (6 marks) Write a function called `semester_name(code)` that returns the semester name for that code number. If an invalid code is given, then return `'invalid'`. The semester codes are summarized in this table:

Codes	Semester
1, 2, 3	Fall
4, 6, 7, 8	Spring
5, 9	Summer

### Examples

```
>>> semester_name(2)
'Fall'
>>> semester_name(3)
'Fall'
>>> semester_name(7)
'Spring'
>>> semester_name(5)
'Spring'
>>> semester_name(11)
'invalid'
```

b) (7 marks) The text file `semesters.txt` contains one or more integer code numbers, one number per line. An example is in the box on the right. Write a program that reads this file and prints a count of how many of the codes are valid semesters. For example, for `semesters.txt` your program should print:

4 valid semesters

Of course, your program should work with any numbers in `semesters.txt`, not just the ones shown. You can re-use `semester_code` from above if you like

semesters.txt

```
9
4
4
-3
2
15
```

## Multiple Choice

For each of the following questions, fill in **the one best answer** on the answer sheet. Every correct answer is worth 1 mark. Incorrect answers, unanswered questions, questions with more than one answer, or questions with illegible answers, are worth 0.

- 1) Python:
- i) is a popular in data science and machine learning
  - ii) has a reputation for making extremely fast-running programs
- A. i) and ii) are both true  
B. i) and ii) are both false  
C. i) is false and ii) is true  
D. i) is true and ii) is false
- 2) A Python variable name can:
- i) start with a digit
  - ii) contain a period character
- A. i) and ii) are both true  
B. i) and ii) are both false  
C. i) is false and ii) is true  
D. i) is true and ii) is false
- 3) What is the *last* number this prints?
- ```
i = 100
while i > 0:
    print(i)
    i -= 1
```
- A. 1  
B. 0  
C. -1  
D. -2  
E. some other number
- 4) What is the *last* number this prints?
- ```
i = 100
while i > 0:
    i -= 1
    print(i)
```
- A. 1  
B. 0  
C. -1  
D. -2
- 5) How many \*s does this print?
- ```
j = 10
while j >= 2:
    print('*')
    j -= 2
```
- A. 3  
B. 4  
C. 5  
D. 6
- 6) There is an `int` that can replace `???` to make this an infinite loop.
- ```
i = ???
while i > 0:
    print(i)
    i -= 1
```
- A. true  
B. false
- 7) i) Any for-loop that uses `range` can be re-written as an equivalent while-loop.  
ii) Any while-loop can be re-written as an equivalent for-loop that uses `range`.
- A. i) and ii) are both true  
B. i) and ii) are both false  
C. i) is false and ii) is true  
D. i) is true and ii) is false
- 8) What does this print?
- ```
a = 1
b = 2
a = b
b = a
print(a, b)
```
- A. 1 2  
B. 2 1  
C. 2 2  
D. 4 4
- 9) What does this print?
- ```
print = 'print' # line 1
print(print)    # line 2
```
- A. <built-in function print>  
B. print  
C. nothing, line 1 causes an error  
D. nothing, line 2 causes an error