

Sample Midterm, CIS 600 Social Media & Data Mining

Remark: This is a sample exam and not an advance copy of the midterm you will take on the 6th. You should study all slides and notebooks and all *assigned* reading materials. Think of problems related to the problems in this sample, and solve those as well.

Problem 0 Which one of the following statements regarding the **json** package is incorrect? Circle the letter of your answer.

- (a) In order to use this package, you must import it first.
- (b) Its “indent” keyword argument lets you pretty-print its output with that indent level.
- (c) You use `json.dump(obj,fp)` to serialize an object (`obj`) as a JSON formatted stream to a file (`fp`).
- (d) You use `json.dumps(obj)` to serialize an object (`obj`) to a JSON formatted string.
- (e) JSON is only used for storing dictionaries and maps, and hence is not widely used in social media mining.

Problem 1 Assuming the function **foo** is already defined, write **one line** or **two lines** of python, using a for loop, equivalent to the following code segment:

```
foo("John")
foo("Paul")
foo("George")
foo("Ringo")
```

Problem 2 Suppose you are writing a loop in python. If a certain condition is met, you want to cease executing the current iteration of the loop and proceed to the next iteration of the loop. Which is the appropriate python statement to use in this situation? Circle your answer.

- (a) break
- (b) continue
- (c) assert
- (d) yield

Problem 3 What is printed by the following python code?

```
next_results = '?max_id=313519052523986943&q=Oscars&include_entities=1'  
  
print( dict([kv.split("=") for kv in next_results[1:].split("&")]) )
```

Problem 4 How would you cast the int variable "a" that is equal to 2 into the string "2"? Circle your answer.

- (a) int(a)
- (b) castToString(a)
- (c) str(a)
- (d) string(a)
- (e) toString(a)

Problem 5 Which one of the following statements regarding Web 2.0 is incorrect? Circle the letter of your answer.

- (a) Social media builds on the ideological and technological foundations of Web 2.0.
- (b) Web 2.0 differs both ideologically and technologically from Web 1.0.
- (c) The technological differences between Web 2.0 and Web 1.0 are more important than their ideological differences.
- (d) One of the technological differences is that Web 2.0 uses AJAX, allowing the update of web content without interfering with the display behavior of the whole page.
- (e) The main ideological difference between Web 2.0 and Web 1.0 is that in Web 2.0 the Web is considered a participation platform.

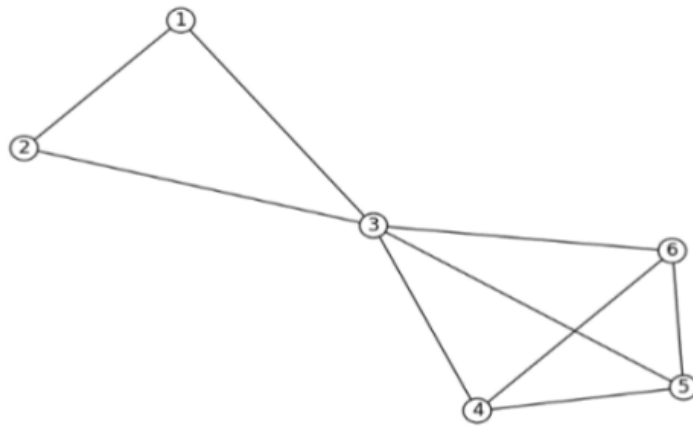


Figure 1: (Refer to this figure for the next two problems.)

Problem 6 Write down the *adjacency matrix* and the *Laplacian matrix* for the graph depicted in Figure 1.

Problem 7 Compute the *clustering coefficient* of node 3 of the graph depicted in Figure 1.