

## Marking Scheme for Assignment 1

### 1. (40 Marks) Compute SCS for two input strings

- (1) Correct input and program names: 5 marks (no partial marks)
- (2) Correctness of the program: 35 marks. No negative marks
  - (2.1) Test the program on three datasets.
  - (2.2) Deduct 10 marks for failure in either case.
  - (2.3) Deduct 10 marks if a library function is used.

---Dataset 1----

A

ABBADDSASSSS

--- Dataset 2----

ABBADDSASSSS

B

--- Dataset 3----

Atgcgagtgtgaagttcggcggtacatcagtggaacatgcagaacgttttctcggtgttgcgatattctggaaagcaatgccaggcaggggc  
aggtggccaccgtcctctctgccccgccaaaatcaccaaccacctggtggcgatgattgaaaaaccattagcggccaggatgctttacccaa  
tatcagcgatgccgaacgtattttgcgaacttttgacgggactcgcgcgcccagcggggtcccgtggcgcaattgaaaactttcgtcga  
tcaggaatttgccaaataaaacatgtcctgcatggcattagttgttggggcagtgcccggatag

ctgataaaaaataccggaaatcctcaagcaccaggtacgctcattggtgccagccgtgatgaagacgaattaccggtcaagggcatttccaatc  
tgaataacatggcaatgttcagcggttctggtccggggatgaaagggatggtcgcatggcggcgcgctcttgcagcgatgtcacgcgccgt  
atctcgtggtgctgattacgcaatcatcttccgaatacagcatcagtttctcggtccacaaagcgactgtgtgcgagctgaacgggcaatgcag  
gaagagttctacctggaactgaaagaaggcttactggagccgctggcagtgacggaacggctggccgagcagacaaaacaa

### 2. (30 marks)

- (1) Correct input and output file names and input format: 3 marks (no partial marks)
- (2) Correctness of the program: 27 marks. Test the program with the following four cases.  
Deduct 5 marks for failure in each case.
- (3) Deduct 10 marks for using a library function for sorting.

Case 1. One edge graph.

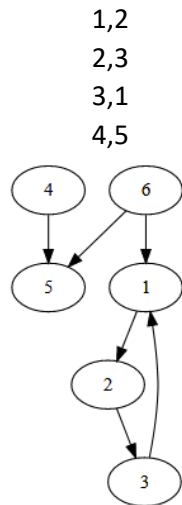
ABC, Kitchen

Answer: [ABC, Kitchen]

Case 2. A graph with cycles:

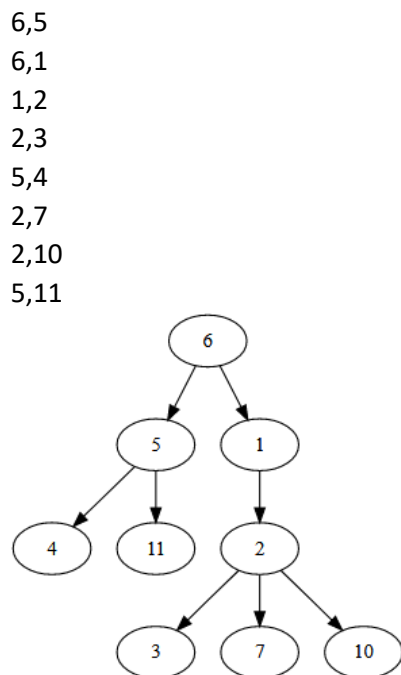
6,5

6,1



Answer: "graph has at least one cycle"

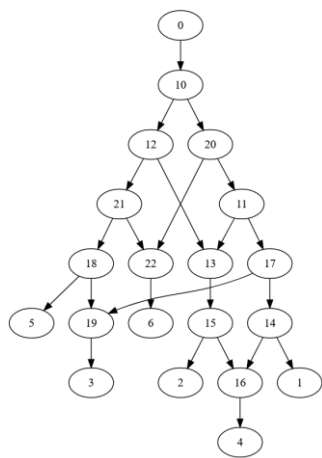
Case 3. A tree.



Case 4: A multiple-node acyclic directed networks

0 10  
10 20  
10 12  
11 17  
12 21  
11 13

12 13  
 13 15  
 14 1  
 15 2  
 14 16  
 15 16  
 16 4  
 17 14  
 18 5  
 17 19  
 18 19  
 19 3  
 20 11  
 21 18  
 20 22  
 21 22  
 22 6



Q3. (30 marks) Correctness of the program: 30 marks

Test the program with the following cases:

Case1 (10 marks): A is large and file B contains only one word.

Case 2 (10marks): Test a file in which a word is spelled in different cases, such as “My” and “MY” and “my”

Case 3 (10 marks): Test the correctness for handling punctuations “,” and “.”

Test data 1:

--- file A ---

with the with the name of the first vertex name of the with the name of the first vertex first vertex

--- file B ---

vertex vertex vertex

Test data 2

--file A--

in the code of the Phylogenetic network you would like to visualize, as a list of arcs, one arc on each with the name of the first vertex Line, with the name with the Name of the first vertex of the first vertex period. period. period. period. period. period. period. period. period. period. period.

--file B--

in the code of the phylogenetic Like to visualize, as a list of arcs, one arc on each line, with the name of the first vertex period. period. period. Period. peRiod. period.

Test data 3

--file A--

in the code of the phylogenetic network you would like to visualize, as a list of arcs, one arc on each line, with the name of the first vertex period. period. period. period. period. period. period. period. period. period. period.

--file B--

in the code of the phylogenetic like to visualize, as a list of arcs, one arc on each line, with the name of the first vertex period. period. period. period. period. period.

