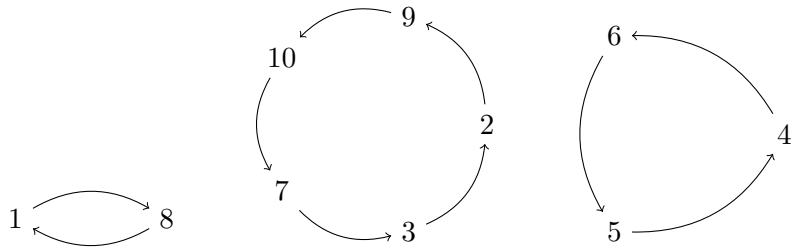
QUIZ 2

COMP9021 PRINCIPLES OF PROGRAMMING

Illustration for $[8, 9, 2, 6, 4, 5, 3, 1, 10, 7]$

1	2	3	4	5	6	7	8	9	10
8	9	2	6	4	5	3	1	10	7




```
$  python3
...
>>> from quiz_2 import *
>>> values = generate_permutation(0, 10)
>>> values
[8, 9, 2, 6, 4, 5, 3, 1, 10, 7]
>>> maps_to(values, 8)
1
>>> maps_to(values, 9)
2
>>> maps_to(values, 2)
3
>>> maps_to(values, 10)
9
>>> maps_to(values, 7)
10
>>> length_of_cycle_containing(values, 1)
2
>>> length_of_cycle_containing(values, 2)
5
>>> length_of_cycle_containing(values, 3)
5
>>> length_of_cycle_containing(values, 4)
3
>>> length_of_cycle_containing(values, 6)
3
```

Date: Trimester 1, 2020.

```
>>> length_of_cycle_containing(values, 8)
2
>>> length_of_cycle_containing(values, 10)
5
>>> analyse(values)
[0, 2, 5, 5, 3, 3, 3, 5, 2, 5, 5]
>>> values = generate_permutation(1, 15)
>>> values
[15, 11, 1, 14, 7, 6, 4, 9, 8, 12, 5, 2, 13, 10, 3]
>>> maps_to(values, 12)
10
>>> length_of_cycle_containing(values, 1)
3
>>> length_of_cycle_containing(values, 2)
8
>>> analyse(values)
[0, 3, 8, 3, 8, 8, 1, 8, 2, 2, 8, 8, 8, 1, 8, 3]
>>> values = generate_permutation(2, 1000)
>>> cycle_lengths = analyse(values)
>>> len(cycle_lengths)
1001
>>> cycle_lengths[500]
219
```