```
C:\Users\AMIT\AppData\Local\Programs\Python\Python37\python.exe "C:/Users/AMIT/Documents/Python Sc
() > ('data integration', 'frequent patterns', 'supervised learning', 'neural chips', 'core memory
('project 2',) > ('data integration', 'frequent patterns')
('project 3',) > ('data integration', 'supervised learning', 'core memory')
('project 4',) > ('data integration', 'supervised learning', 'neural chips')
('project 3', 'project 4') > ('data integration', 'supervised learning')
('project 1', 'project 4', 'project 5') > ('supervised learning', 'neural chips')
('project 2', 'project 3', 'project 4') > ('data integration',)
('project 1', 'project 3', 'project 4', 'project 5') > ('supervised learning',)
('project 1', 'project 2', 'project 3', 'project 4', 'project 5') > ()
abstract concept matrix
[1, 1, 0, 0, 0, 0, 1, 0, 0, 0]
[1, 0, 1, 0, 1, 0, 0, 1, 0, 0]
[1, 0, 1, 1, 0, 0, 0, 0, 1, 0]
[1, 0, 1, 0, 0, 0, 0, 1, 1, 0]
[0, 0, 1, 1, 0, 1, 0, 0, 1, 1]
[1, 0, 0, 0, 0, 0, 1, 1, 1, 0]
[0, 0, 1, 0, 0, 1, 0, 1, 1, 1]
() > ('data integration', 'frequent patterns', 'supervised learning', 'neural chips', 'core memory
('student1',) > ('data integration', 'frequent patterns', 'core memory')
('student2',) > ('frequent patterns', 'supervised learning')
('student3',) > ('data integration', 'neural chips', 'core memory')
('student4',) > ('data integration', 'supervised learning')
('student5',) > ('frequent patterns', 'neural chips', 'core memory')
('student1', 'student3') > ('data integration', 'core memory')
('student1', 'student5') > ('frequent patterns', 'core memory')
('student2', 'student4') > ('supervised learning',)
('student3', 'student5') > ('neural chips', 'core memory')
('student1', 'student2', 'student5') > ('frequent patterns',)
('student1', 'student3', 'student4') > ('data integration',)
('student1', 'student3', 'student5') > ('core memory',)
('student1', 'student2', 'student3', 'student4', 'student5') > ()
student concept matrix
[1, 1, 0, 0, 1, 1, 0, 0, 0, 0]
[0, 1, 1, 0, 0, 0, 1, 0, 0, 0]
[1, 0, 0, 1, 1, 0, 0, 1, 0, 0]
[1, 0, 1, 0, 0, 0, 0, 0, 1, 0]
[0, 1, 0, 1, 1, 0, 0, 0, 0, 1]
[1, 0, 0, 0, 1, 1, 0, 1, 0, 0]
[0, 1, 0, 0, 1, 1, 0, 0, 0, 1]
[0, 0, 1, 0, 0, 0, 1, 0, 1, 0]
[0, 0, 0, 1, 1, 0, 0, 1, 0, 1]
[0, 1, 0, 0, 0, 1, 1, 0, 0, 1]
[1, 0, 0, 0, 0, 1, 0, 1, 1, 0]
[0, 0, 0, 0, 1, 1, 0, 1, 0, 1]
--------------------------------------------------------------------------------
aff mat
2.5|2.0|0.0|0.5|-1.5|1.0|-1.0|
1.5|1.0|1.0|1.5|1.5|0.0|2.0|
0.5|2.0|2.0|0.5|0.5|1.0|-1.0|
1.5|3.0|3.0|3.5|1.5|2.0|2.0|
0.5|0.0|0.0|-1.5|0.5|-1.0|-1.0|
1.5|3.0|1.0|1.5|-0.5|2.0|0.0|
1.5|1.0|-1.0|-0.5|-0.5|0.0|0.0|
0.5|2.0|2.0|2.5|2.5|1.0|3.0|
-0.5|1.0|1.0|-0.5|1.5|0.0|0.0|
2.5|0.0|0.0|0.5|0.5|1.0|1.0|
2.5|2.0|2.0|2.5|0.5|3.0|1.0|
0.5|2.0|0.0|0.5|0.5|1.0|1.0|
--------------------------------------------------------------------------------
student preferences
0 [0, 1, 5, 3, 2, 6, 4]
```

```
1 [6, 0, 3, 4, 1, 2, 5]
2 [1, 2, 5, 0, 3, 4, 6]
3 [3, 1, 2, 5, 6, 0, 4]
4 [0, 4, 1, 2, 5, 6, 3]
5 [1, 5, 0, 3, 2, 6, 4]
6 [0, 1, 5, 6, 3, 4, 2]
7 [6, 3, 4, 1, 2, 5, 0]
8 [4, 1, 2, 5, 6, 0, 3]
9 [0, 5, 6, 3, 4, 1, 2]
10 [5, 0, 3, 1, 2, 6, 4]
11 [1, 5, 6, 0, 3, 4, 2]
abstract preferences
0 [0, 9, 10, 1, 3, 5, 6, 2, 4, 7, 11, 8]
1 [3, 5, 0, 2, 7, 10, 11, 1, 6, 8, 4, 9]
2 [3, 2, 7, 10, 1, 5, 8, 0, 4, 9, 11, 6]
3 [3, 7, 10, 1, 5, 0, 2, 9, 11, 6, 8, 4]
4 [7, 1, 3, 8, 2, 4, 9, 10, 11, 5, 6, 0]
5 [10, 3, 5, 0, 2, 7, 9, 11, 1, 6, 8, 4]
6 [7, 1, 3, 9, 10, 11, 5, 6, 8, 0, 2, 4]
sma
--------------------------------------------------------------------------------
task_concept-student_concept pairs
[(0, 0), (3, 3), (5, 10), (6, 7), (0, 9), (1, 5), (4, 8), (6, 1), (0, 6), (1, 2), (0, 4), (1, 11)]
for pair ( 0 , 0 )
stable percentage: 0.6666666666666666
for pair ( 3 , 3 )
stable percentage: 1.0
for pair ( 5 , 10 )
stable percentage: 1.0
for pair ( 6 , 7 )
stable percentage: 1.0
for pair ( 0 , 9 )
stable percentage: 0.5
for pair ( 1 , 5 )
stable percentage: 0.6666666666666666
for pair ( 4 , 8 )
stable percentage: 0.3333333333333333
for pair ( 6 , 1 )
stable percentage: 0.5
for pair ( 0 , 6 )
stable percentage: 0.3333333333333333
for pair ( 1 , 2 )
stable percentage: 0.5
for pair ( 0 , 4 )
stable percentage: 0.25
for pair ( 1 , 11 )
stable percentage: 0.3333333333333333
--------------------------------------------------------------------------------
average stable percentage: 0.5902777777777777
--------------------------------------------------------------------------------
data integration | frequent patterns | project 2 |  > data integration | frequent patterns | core
data integration | supervised learning | project 3 | project 4 |  > data integration | supervised
data integration | project 2 | project 3 | project 4 |  > data integration | student1 | student3 |
supervised learning | project 1 | project 3 | project 4 | project 5 |  > supervised learning | stu
data integration | frequent patterns | project 2 |  > frequent patterns | student1 | student2 | st
data integration | supervised learning | core memory | project 3 |  > data integration | core memo
supervised learning | neural chips | project 1 | project 4 | project 5 |  > neural chips | core me
supervised learning | project 1 | project 3 | project 4 | project 5 |  > frequent patterns | super
data integration | frequent patterns | project 2 |  > frequent patterns | core memory | student1 |
data integration | supervised learning | core memory | project 3 |  > data integration | neural ch
data integration | frequent patterns | project 2 |  > frequent patterns | neural chips | core memo
data integration | supervised learning | core memory | project 3 |  > core memory | student1 | stu
```

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--------------------------------------------------------------------------------
project part ....
project 2 > {'student3', 'student2', 'student1', 'student5', 'student4'}
project 3 > {'student3', 'student2', 'student1', 'student5', 'student4'}
project 4 > {'student3', 'student2', 'student1', 'student5', 'student4'}
project 1 > {'student2', 'student5', 'student3', 'student4'}
project 5 > {'student2', 'student5', 'student3', 'student4'}
--------------------------------------------------------------------------------
student part ....
student1 > {'project 3', 'project 4', 'project 2'}
student4 > {'project 5', 'project 2', 'project 4', 'project 3', 'project 1'}
student3 > {'project 5', 'project 2', 'project 4', 'project 3', 'project 1'}
student2 > {'project 5', 'project 2', 'project 4', 'project 3', 'project 1'}
student5 > {'project 5', 'project 2', 'project 4', 'project 3', 'project 1'}

Process finished with exit code 0
```