TÜRKİYE CUMHURİYETİ

YILDIZ TEKNİK ÜNİVERSİTESİ

BİLGİSAYAR MÜHENDİSLİĞİ BÖLÜMÜ

VERİ YAPILARI VE ALGORİTMALARI ÜÇÜNCÜ ÖDEV RAPORU

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Ders/Grup: BLM2512 Veri Yapıları ve Algoritmaları/ 1.Grup

Ders Yürütücüsü

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VİDEO LİNKİ:

https://drive.google.com/file/d/1CqznmMRONUBQi8toX7R2HcSzzn49BPb8/view?usp=sharing

ÖRNEK 1:

N = 6 E = 12

Input:

```
Enter the number of courses and prerequisite courses respectively:
6
12
If courses are dependent enter 1 else enter 0
Is Course1 prerequisite for Course0 ?
0
Is Course2 prerequisite for Course0 ?
0
Is Course3 prerequisite for Course0 ?
0
Is Course4 prerequisite for Course0 ?
0
Is Course5 prerequisite for Course0 ?
0
Is Course0 prerequisite for Course1 ?
1
Is Course2 prerequisite for Course1 ?
0
Is Course3 prerequisite for Course1 ?
0
Is Course4 prerequisite for Course1 ?
0
Is Course5 prerequisite for Course1 ?
1
Is Course0 prerequisite for Course2 ?
1
Is Course1 prerequisite for Course2 ?
0
Is Course3 prerequisite for Course2 ?
0
Is Course4 prerequisite for Course2 ?
0
Is Course5 prerequisite for Course2 ?
1
Is Course0 prerequisite for Course3 ?
1
Is Course1 prerequisite for Course3 ?
1
Is Course2 prerequisite for Course3 ?
1
Is Course4 prerequisite for Course3 ?
1
Is Course5 prerequisite for Course3 ?
0
Is Course0 prerequisite for Course4 ?
0
Is Course1 prerequisite for Course4 ?
1
Is Course2 prerequisite for Course4 ?
1
Is Course3 prerequisite for Course4 ?
```

```
Adjacency Matrix:
  0    0    0    0    0    0
  1    0    0    0    0    1
  1    0    0    0    0    1
  1    1    1    0    1    0
  0    1    1    0    0    1
  1    0    0    0    0    0

Adjacency List:
Course 0: NULL
Course 1: 5 -> 0 -> NULL
Course 2: 5 -> 0 -> NULL
Course 3: 4 -> 2 -> 1 -> 0 -> NULL
Course 4: 5 -> 2 -> 1 -> NULL
Course 5: 0 -> NULL
Indegrees:
Node    Indegree
0       0
1       2
2       2
3       4
4       3
```

Sonuç:

```
 Semester: 1 -> Course0
 Semester: 2 -> Course5
 Semester: 3 -> Course1   Course2
 Semester: 4 -> Course4
 Semester: 5 -> Course3
```

ÖRNEK 2:

N = 5 E = 6

Input:

```
Enter the number of courses and prerequisite courses respectively:
5
6
If courses are dependent enter 1 else enter 0
Is Course1 prerequisite for Course0 ?
0
Is Course2 prerequisite for Course0 ?
0
Is Course3 prerequisite for Course0 ?
0
Is Course4 prerequisite for Course0 ?
0
Is Course0 prerequisite for Course1 ?
0
Is Course2 prerequisite for Course1 ?
1
Is Course3 prerequisite for Course1 ?
1
Is Course4 prerequisite for Course1 ?
0
Is Course0 prerequisite for Course2 ?
0
Is Course1 prerequisite for Course2 ?
0
Is Course3 prerequisite for Course2 ?
1
Is Course4 prerequisite for Course2 ?
1
Is Course0 prerequisite for Course3 ?
1
Is Course1 prerequisite for Course3 ?
0
Is Course2 prerequisite for Course3 ?
0
Is Course4 prerequisite for Course3 ?
1
```

```
Adjacency Matrix:
  0    0    0    0    0
  0    0    1    1    0
  0    0    0    1    1
  1    0    0    0    1
  0    0    0    0    0

Adjacency List:
Course 0: NULL
Course 1: 3 -> 2 -> NULL
Course 2: 4 -> 3 -> NULL
Course 3: 4 -> 0 -> NULL
Course 4: NULL
Indegrees:
Node    Indegree
0       0
1       2
2       2
3       2
4       0
```

Sonuç:

```
Semester: 1 -> Course0   Course4
Semester: 2 -> Course3
Semester: 3 -> Course2
Semester: 4 -> Course1
```

ÖRNEK 3: (Çözümsüz Örnek)

N = 6 E = 12

Input:

```
Enter the number of courses and prerequisite courses respectively:
6
12
If courses are dependent enter 1 else enter 0
Is Course1 prerequisite for Course0 ?
0
Is Course2 prerequisite for Course0 ?
0
Is Course3 prerequisite for Course0 ?
1
Is Course4 prerequisite for Course0 ?
0
Is Course5 prerequisite for Course0 ?
0
Is Course0 prerequisite for Course1 ?
1
Is Course2 prerequisite for Course1 ?
1
Is Course3 prerequisite for Course1 ?
0
Is Course4 prerequisite for Course1 ?
0
Is Course5 prerequisite for Course1 ?
0
Is Course0 prerequisite for Course2 ?
1
Is Course1 prerequisite for Course2 ?
1
Is Course3 prerequisite for Course2 ?
1
Is Course4 prerequisite for Course2 ?
1
Is Course5 prerequisite for Course2 ?
0
Is Course0 prerequisite for Course3 ?
0
Is Course1 prerequisite for Course3 ?
1
Is Course2 prerequisite for Course3 ?
1
Is Course4 prerequisite for Course3 ?
0
Is Course5 prerequisite for Course3 ?
1
Is Course0 prerequisite for Course4 ?
0
Is Course1 prerequisite for Course4 ?
0
```

```
Adjacency Matrix:
  0    0    0    1    0    0
  1    0    1    0    0    0
  1    1    0    1    1    0
  0    1    1    0    0    1
  0    0    1    0    0    1
  0    0    0    0    0    0

Adjacency List:
Course 0: 3 -> NULL
Course 1: 2 -> 0 -> NULL
Course 2: 4 -> 3 -> 1 -> 0 -> NULL
Course 3: 5 -> 2 -> 1 -> NULL
Course 4: 5 -> 2 -> NULL
Course 5: NULL
Indegrees:
Node    Indegree
0       1
1       2
2       4
3       3
4       2
5       0
```

Sonuç:

```
This course list hasn't got any course without preconditions to start in some point
```

ÖRNEK 4: (Hiçbir ön şart olmayan örnek)

```
Continue: 1 / Exit 0
1
Enter the number of courses and prerequisite courses respectively:
3
0
If courses are dependent enter 1 else enter 0

Adjacency Matrix:
  0    0    0
  0    0    0
  0    0    0

Adjacency List:
Course 0: NULL
Course 1: NULL
Course 2: NULL
Indegrees:
Node    Indegree
0       0
1       0
2       0

 Semester: 1 -> Course0   Course1       Course2
```