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Faculty of Mathematics and Computer Science

Department: Computer Science

Module:Graph Theory/DCSO

TUTORIALS - SERIES NO. 05

Exercise 01

Given X = {1, 2, …, 12}; E = {E1, E2, E3, E4, E5}
With: E1 = {1, 3}; E2 = {2}; E3 = {2, 3, 5, 7}; E4 = {1, 4, 6, 7, 8, 9}; E5 = {8, 9, 10, 11, 12}
Propose a representation of the hypergraph H(X, E)

Exercise 02

Let the incidence matrix represent a hypergraph H(X, E)

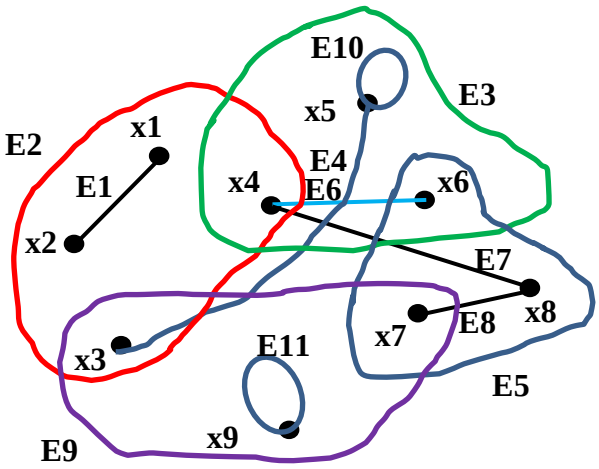
1. Define X and E
2. Represent H graphically

	E1	E2	E3	E4	E5
a	0	1	0	1	1
b	1	1	0	1	0
c	0	0	1	0	0
d	1	0	1	1	0
e	0	1	1	1	1

Exercise 03

Let the hypergraph H(X, E) be represented by the figure below

1. Define the X and E components of H
2. Give the dual graph H* associated with H



Exercise 4

In the hypergraph H(X, E) of exercise 03, give the following parameters:

1. The order and size of H
2. The rank and anti-rank of H

Good luck