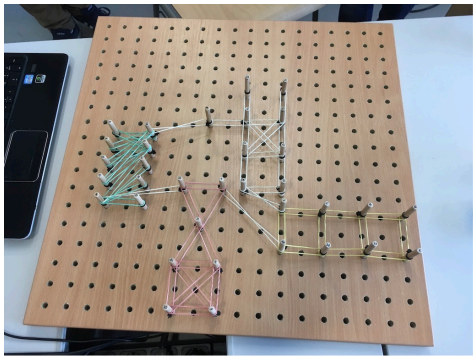
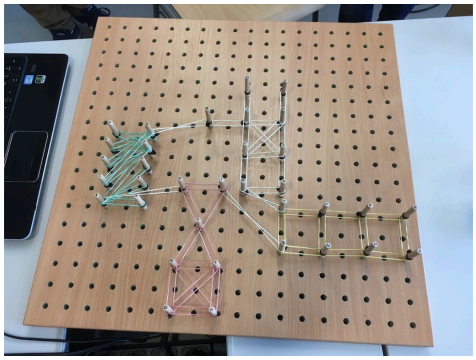
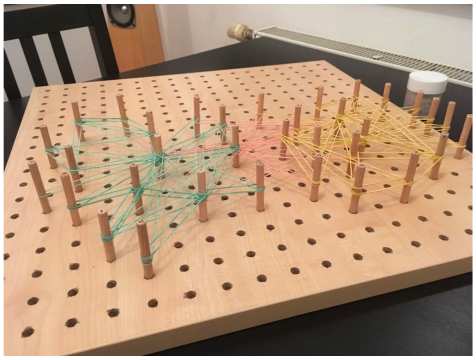
Board with wooden pegs & rubber bands

You are given different **networks in edge list format**. Some of these are well known real networks, while others are synthetic graphs generated with different random models or constructed by hand. Your task is to **reveal the structure of networks** without using a computer or any other electronic device.

You can use a **board with numbered wooden pegs and rubber bands** of different color. These should serve as network nodes and links, respectively. To simulate force-directed layout of a network, rubber bands will take care of the attractive forces between the linked nodes. You should, however, simulate the repulsive forces between the nodes on your own.

I. Simple network with heterogeneous structure

Try to reveal the structure of the following toy network.

1 — 10	1 — 20	1 — 25	2 — 9	2 — 20
2 — 33	3 — 18	3 — 29	4 — 5	4 — 8
4 — 13	4 — 15	4 — 25	6 — 7	6 — 32
6 — 34	7 — 10	7 — 32	7 — 34	8 — 16
8 — 17	8 — 27	8 — 31	9 — 24	9 — 28
10 — 25	10 — 34	11 — 12	11 — 33	12 — 14
12 — 19	12 — 30	14 — 19	14 — 21	14 — 30

16 — 23	17 — 23	18 — 28	19 — 30	19 — 33
20 — 24	22 — 30	23 — 26	23 — 27	23 — 31
24 — 29	26 — 30	28 — 29	32 — 34	

II. Real network and two synthetic graphs

Try to recognize the following well known real network.

1 — 2	1 — 3	1 — 4	1 — 5	1 — 6
1 — 7	1 — 8	1 — 9	1 — 11	1 — 12
1 — 13	1 — 14	1 — 18	1 — 20	1 — 22
1 — 32	2 — 3	2 — 4	2 — 8	2 — 14
2 — 18	2 — 20	2 — 22	2 — 31	3 — 4
3 — 8	3 — 9	3 — 10	3 — 14	3 — 28
3 — 29	3 — 33	4 — 8	4 — 13	4 — 14
5 — 7	5 — 11	6 — 7	6 — 11	6 — 17
7 — 17	9 — 31	9 — 33	9 — 34	10 — 34
14 — 34	15 — 33	15 — 34	16 — 33	16 — 34
19 — 33	19 — 34	20 — 34	21 — 33	21 — 34
23 — 33	23 — 34	24 — 26	24 — 28	24 — 30
24 — 33	24 — 34	25 — 26	25 — 28	25 — 32
26 — 32	27 — 30	27 — 34	28 — 34	29 — 32
29 — 34	30 — 33	30 — 34	31 — 33	31 — 34
32 — 33	32 — 34	33 — 34		

Try to figure out which random models were used to generate the following two graphs.

☐ 1 — 21	☐ 1 — 24	☐ 1 — 7	☐ 1 — 23	☐ 1 — 9
☐ 1 — 10	☐ 1 — 28	☐ 1 — 13	☐ 1 — 29	☐ 1 — 15
☐ 1 — 16	☐ 1 — 2	☐ 1 — 3	☐ 1 — 4	☐ 1 — 5
☐ 1 — 6	☐ 2 — 21	☐ 2 — 25	☐ 2 — 12	☐ 2 — 32
☐ 2 — 31	☐ 2 — 3	☐ 2 — 4	☐ 2 — 5	☐ 2 — 6
☐ 3 — 18	☐ 3 — 20	☐ 3 — 7	☐ 3 — 27	☐ 3 — 12
☐ 3 — 13	☐ 3 — 31	☐ 3 — 4	☐ 3 — 5	☐ 3 — 6
☐ 4 — 33	☐ 4 — 22	☐ 4 — 14	☐ 4 — 5	☐ 4 — 6
☐ 5 — 17	☐ 5 — 22	☐ 5 — 21	☐ 5 — 8	☐ 5 — 10
☐ 5 — 27	☐ 5 — 29	☐ 5 — 6	☐ 6 — 7	☐ 6 — 8
☐ 6 — 9	☐ 6 — 11	☐ 6 — 15	☐ 6 — 16	☐ 6 — 26
☐ 6 — 25	☐ 6 — 28	☐ 6 — 32	☐ 7 — 19	☐ 7 — 8
☐ 7 — 26	☐ 7 — 9	☐ 7 — 14	☐ 7 — 15	☐ 8 — 24
☐ 8 — 27	☐ 8 — 30	☐ 8 — 31	☐ 9 — 18	☐ 9 — 20
☐ 9 — 19	☐ 9 — 10	☐ 9 — 11	☐ 9 — 12	☐ 9 — 30
☐ 9 — 14	☐ 10 — 11	☐ 10 — 13	☐ 12 — 33	☐ 12 — 20
☐ 12 — 19	☐ 13 — 22	☐ 13 — 24	☐ 14 — 18	☐ 15 — 17
☐ 15 — 23	☐ 15 — 29	☐ 15 — 16	☐ 16 — 17	☐ 19 — 26
☐ 19 — 32	☐ 21 — 34	☐ 21 — 25	☐ 21 — 28	☐ 21 — 30
☐ 22 — 33	☐ 22 — 23	☐ 30 — 34	☐ 33 — 34	

☐ 1 — 4	☐ 1 — 8	☐ 1 — 14	☐ 1 — 15	☐ 1 — 16
☐ 1 — 22	☐ 1 — 26	☐ 2 — 11	☐ 2 — 23	☐ 3 — 4
☐ 3 — 11	☐ 3 — 13	☐ 3 — 18	☐ 3 — 17	☐ 4 — 21
☐ 4 — 25	☐ 4 — 28	☐ 4 — 32	☐ 5 — 8	☐ 5 — 9
☐ 5 — 18	☐ 5 — 17	☐ 6 — 14	☐ 6 — 17	☐ 7 — 13
☐ 7 — 29	☐ 8 — 17	☐ 8 — 31	☐ 8 — 34	☐ 9 — 16
☐ 9 — 21	☐ 9 — 25	☐ 9 — 32	☐ 10 — 19	☐ 10 — 25
☐ 10 — 32	☐ 10 — 34	☐ 11 — 16	☐ 11 — 24	☐ 12 — 17
☐ 12 — 21	☐ 12 — 27	☐ 12 — 30	☐ 13 — 26	☐ 13 — 28
☐ 13 — 34	☐ 14 — 17	☐ 14 — 26	☐ 14 — 30	☐ 15 — 18
☐ 15 — 20	☐ 16 — 22	☐ 16 — 32	☐ 17 — 26	☐ 17 — 25
☐ 19 — 24	☐ 20 — 22	☐ 20 — 23	☐ 20 — 27	☐ 20 — 30
☐ 21 — 32	☐ 21 — 34	☐ 22 — 25	☐ 23 — 29	☐ 23 — 34
☐ 24 — 30	☐ 24 — 34	☐ 25 — 29	☐ 28 — 29	☐ 28 — 34
☐ 32 — 33				