Rafajdus Jakub

1. Prehľadajte graf do šírky a do hĺbky. Nakreslite stromy prehľadávania. Začnite vo vrchole 1.

$$S_G = \begin{pmatrix} 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 1 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 1 & 0 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 & 1 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$

2. Nájdite maticu vzdialeností D_G grafu G zadaného cenovou maticou

$$C_G = \begin{pmatrix} 0 & 3 & 1 & 5 & \infty & \infty \\ 3 & 0 & 4 & \infty & \infty & 2 \\ 1 & 4 & 0 & \infty & 7 & \infty \\ 5 & \infty & \infty & 0 & 3 & \infty \\ \infty & \infty & 7 & 3 & 0 & 5 \\ \infty & 2 & \infty & \infty & 5 & 0 \end{pmatrix}$$

3. Nájdite minimálnu a maximálnu kostru grafu

$G = \{V, E, o\}; \ V = \{v_1, v_2, \dots, v_8\}; \ E = \{o[v_1, v_2] = 6, o[v_1, v_3] = 5, o[v_1, v_4] = 1, o[v_2, v_4] = 4,$

$o[v_2, v_5] = 7, o[v_2, v_7] = 2, o[v_3, v_4] = 2, o[v_3, v_6] = 8, o[v_3, v_8] = 1, o[v_4, v_5] = 11, o[v_4, v_6] = 10,$

$o[v_4, v_7] = 9, \ o[v_5, v_8] = 3, o[v_6, v_7] = 3, o[v_7, v_8] = 5\}$

4. Nájdite maximálny tok a minimálny rez v $z - u$ sieti