Blahút Filip

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

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

2. Nájdite maticu vzdialeností $D_G$ grafu $G$ zadaného cenovou maticou

$$C_G = \begin{pmatrix} 0 & 9 & \infty & \infty & \infty & 4 \\ \infty & 0 & 11 & 7 & 2 & \infty \\ 5 & 8 & 0 & \infty & \infty & 6 \\ \infty & \infty & 6 & 0 & 4 & \infty \\ 7 & \infty & 7 & \infty & 0 & 3 \\ \infty & 2 & \infty & 10 & 9 & 0 \end{pmatrix}$$

3. Nájdite minimálnu a maximálnu kostru grafu

$G = \{V, E, o\};\ V = \{v_1, v_2, \dots, v_8\};\ E = \{o[v_1, v_2] = 2, o[v_1, v_7] = 5, o[v_1, v_8] = 10, o[v_2, v_3] = 10,$
$o[v_2, v_7] = 6, o[v_3, v_4] = 5, o[v_3, v_8] = 4, o[v_4, v_5] = 8, o[v_4, v_8] = 3, o[v_5, v_6] = 3, o[v_5, v_8] = 7,$
$o[v_6, v_7] = 11, o[v_6, v_8] = 9, o[v_7, v_8] = 12\}$

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