

# Redes Bipartitas y Sistemas de Recomendación

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# Overview

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## Definition (Directed graph)

A directed graph  $G \equiv (\mathcal{N}, \mathcal{L})$  consists of two sets,  $\mathcal{N} \neq \emptyset$  and  $\mathcal{L}$ . The elements of  $\mathcal{N} \equiv \{n_1, n_2, \dots, n_N\}$  are the nodes of the graph  $G$ . The elements of  $\mathcal{L} \equiv \{l_1, l_2, \dots, l_K\}$  are distinct ordered pairs of distinct elements of  $\mathcal{N}$ , and are called directed links, or arcs