### Exercise22:

### Given matches:

* A has played B, E
* B has played A, F
* C has played D, F

#### **Step-by-step:**

1. **Graph Representation**:

* Teams are vertices: A, B, C, D, E, F.
* Edges (matches):
  + - A—E, A—B
    - B—F
    - C—D, C—F

1. **Color the edges** (group them into weeks):

* Week 1: A—B, C—D (no overlap in teams).
* Week 2: A—E, C—F (no overlap in teams).
* Week 3: B—F (no overlap).

Thus, **3 weeks** are required to schedule the matches.