Three Analysis Techniques for Petri nets

1. **Enumeration** – construct reachability graph RG (N, m_0); for bounded nets the RG is finite; for unbounded nets the RG is infinite and it is replaced by a coverability graph that is finite.

2. **Transformation** – transforming $S= (N, m_0)$ into $S'= (N', m'_0)$ that preserves a set of properties (both structural and behavioral).

3. **Structural analysis –** reduction methods that change net system from previous $S_i = (N_i, m_{0i})$ to a 'smaller'one $S_{i+1} = (N_{i+1}, m_{0i+1})$ – study of behavior as dependent on structure of Petri nets:

    a) linear algebra, linear programming

    b) graph-based techniques.