This exercise sheet will be discussed in the exercise sessions on January 30.

Exercise 1 Mark-and-Sweep

Assumptions for simplicity: 1. Every allocated object has the same structure: First a metadata field of type int for marking an object and counting visited fields (-1 for unmarked objects). Then 2 pointer values (can be null) and a field storing some integer. 2. There is only one root variable. 3. There is only one free-list. 4. Address values start with a.

Execute the Mark-and-Sweep algorithm with pointer reversal on the following state. Draw the state after each loop iteration for the marking phase and the state after the sweeping phase.
Exercise 2 Copying Collection

Execute the Copying Collection algorithm on the following state. The beginning of the from-space is at $a_0$ and the beginning of the to-space at $a_{18}$. The object structure is as above but without the metadata field for marking an object and counting.
More space for Mark-and-Sweep:
More space for Copying Collection: