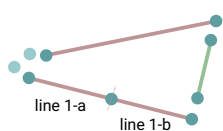
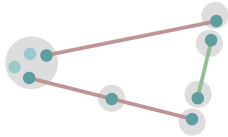


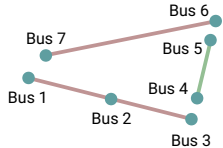
**a. Line endings are added to set of buses**



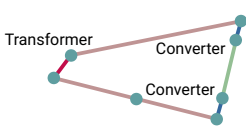
**b. Lines overpassing nodes are split into segments**



**c. IDs are assigned to buses within tolerance of 500 m**



**d. Buses are aggregated by voltage and AC/DC type**



**e. Transformers (red) and converters (blue) are added**