OBS 1. Men always go down their list.
OBS 2. Women go up. They trade up.

All terminates after one proposal.
All men never propose twice to the same woman.

Correctness: Perfect matching is output.
Proof by contradiction.
- Suppose n men/women.
- A man, Y, is not matched.
  - \( \Rightarrow \) All women rejected Y.
  - All women must be matched.

Termination:

Because women only trade up,
not woman has match
but only n-1 men have matches.
Contradiction.

Correctness: Stable.
Proof by contradiction.
- Suppose man.
  - Then is unstable pair A, Z.

Case 1: Z men proposed to A.
  - Z goes down the list.

Case 2: Z is rejected by A.
  - A trades up.
  - She is with a better man.