(a) while ∃ a city that is available and hasn't made an offer to every doctor
    do choose highest ranked doctor that the city has not made an offer to
        if doctor is free
        then current city and doctor become linked
        else if doctor prefers current city over city it is already matched with, link doctor to current city.
return matching

(b) The runtime complexity is O(mn) because for each city, the availability of every doctor is checked.

(c) while ∃ a doctor that is available and hasn't made an offer to every city
    do choose highest preferred city that the doctor has not made an offer to
        if city is free
        then current city and and doctor become linked
        else if city prefers current doctor over a doctor it is already linked with, link current city and doctor.
return matching

(d) The runtime complexity is O(mn) because for each doctor, the possibility of a match with each city is checked in the worst case.