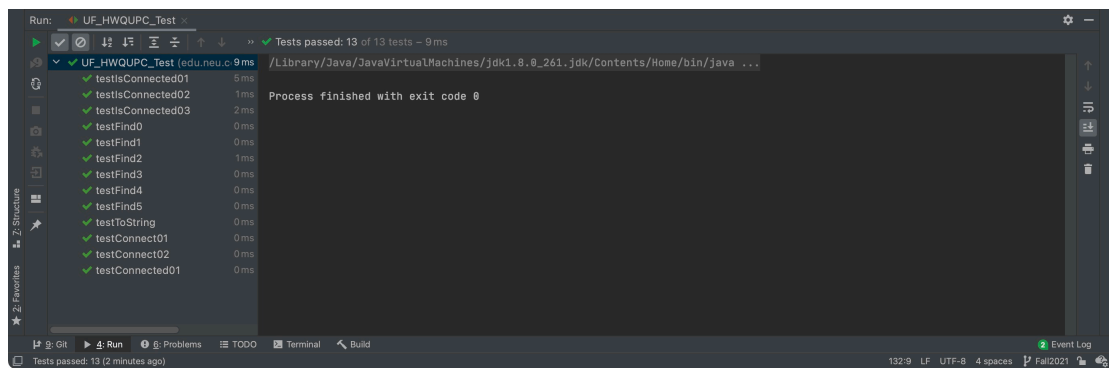


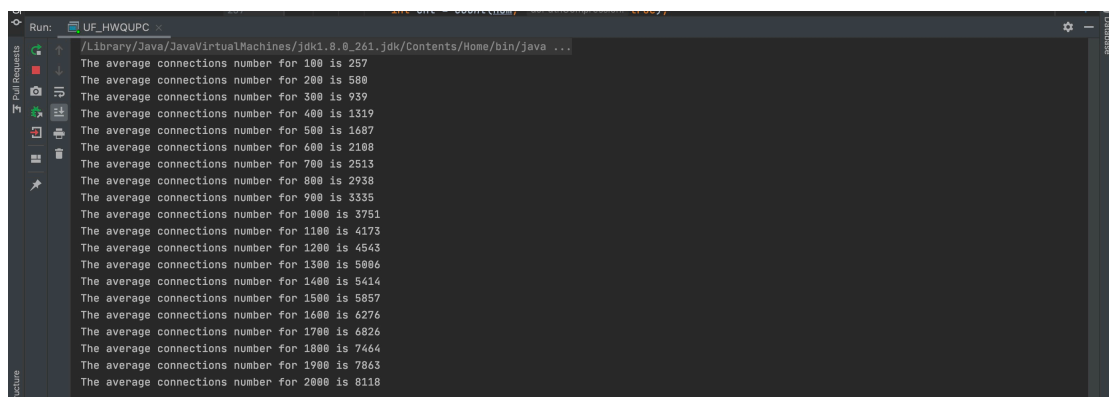
Part 1: unit test result:



Part 2: the code is showed in java file.

Part 3: trying to print average connections number for n sites, for each n number, calculate 200 times to get the average. And the result is closed to:

$$f(n) = 4n - 200$$



So, the complexity is closed to $O(n - 1)$, because of the connection times without duplication is $n-1$. However, with random get pairs, the times get a coefficient.