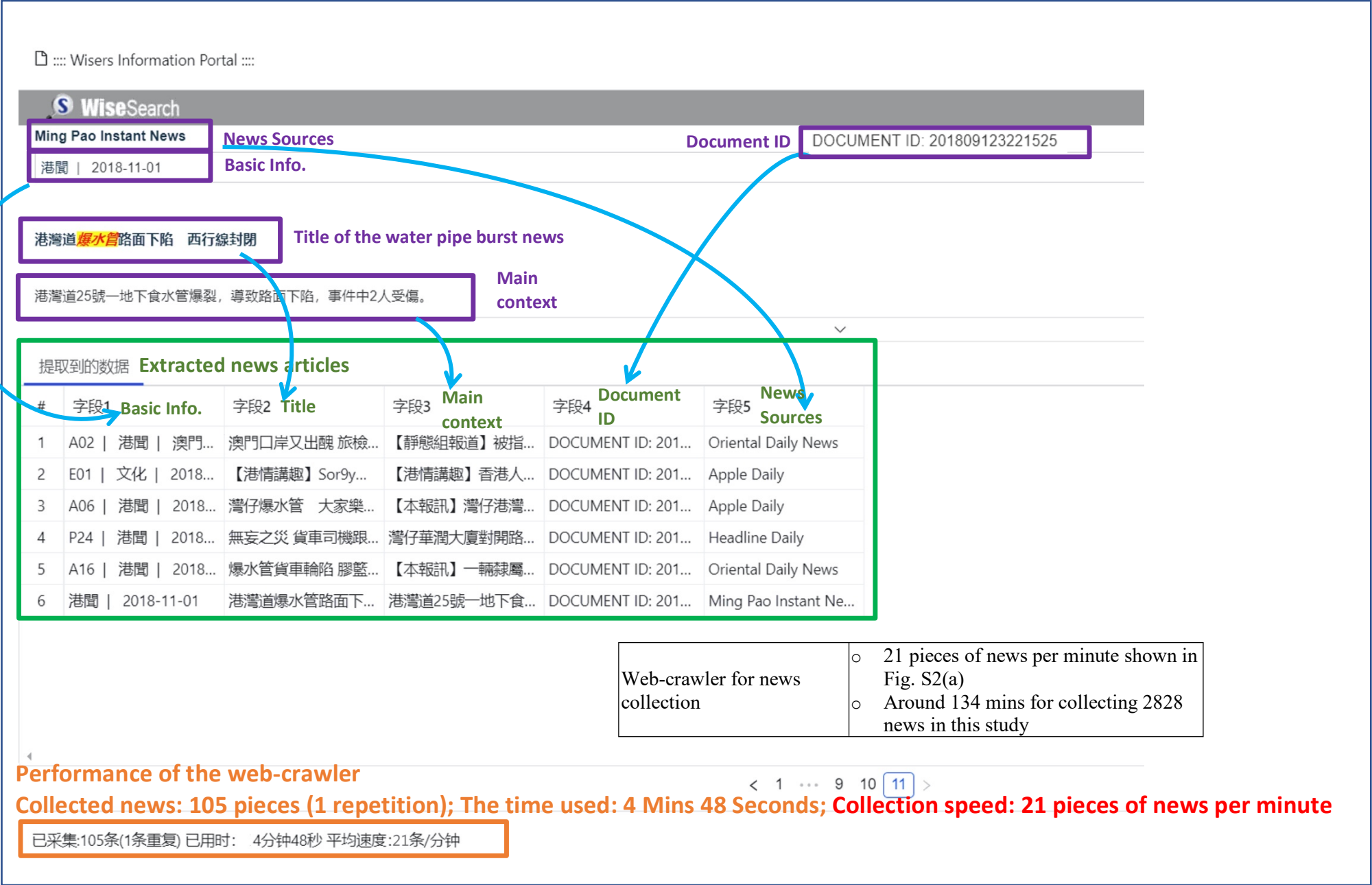
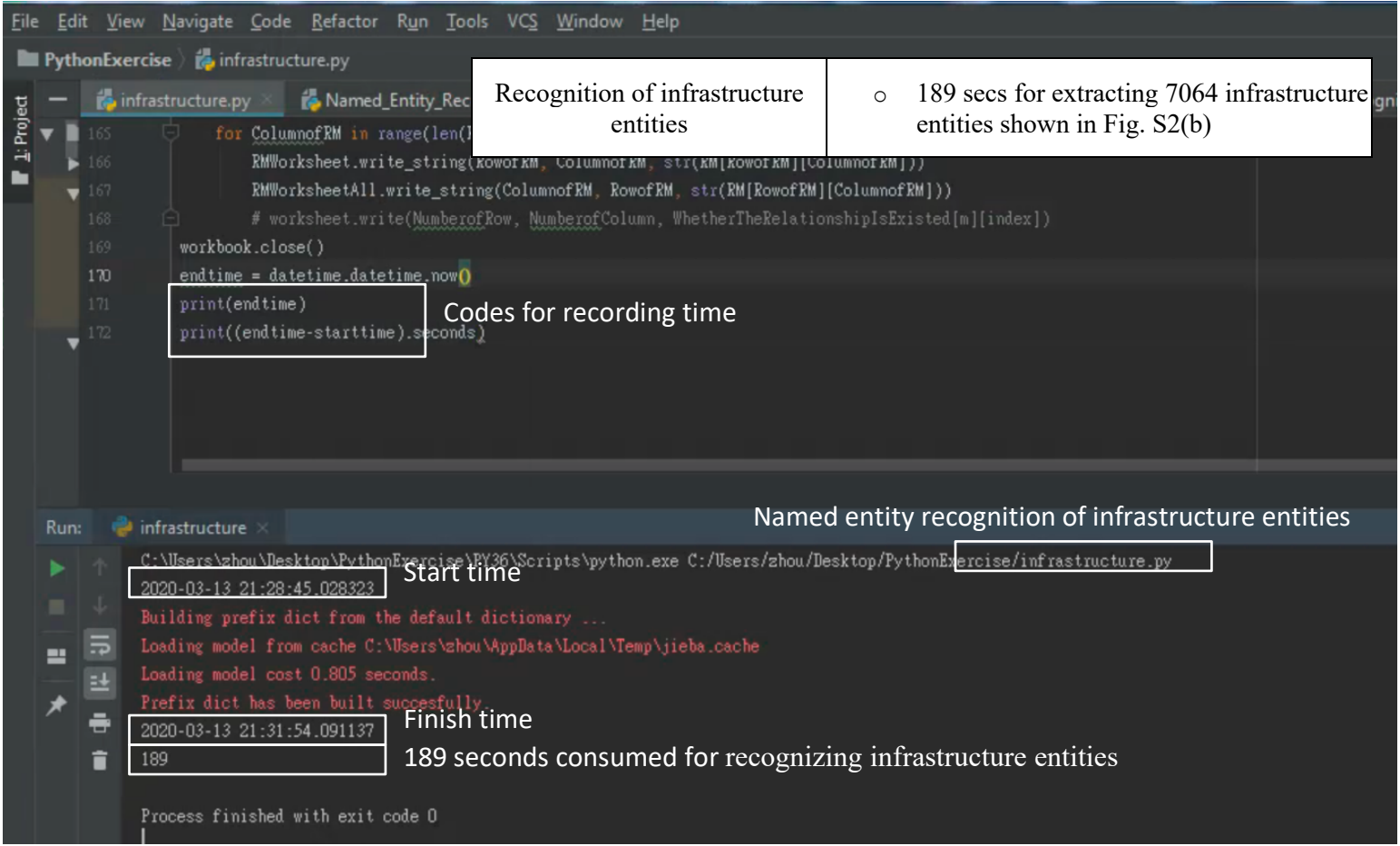


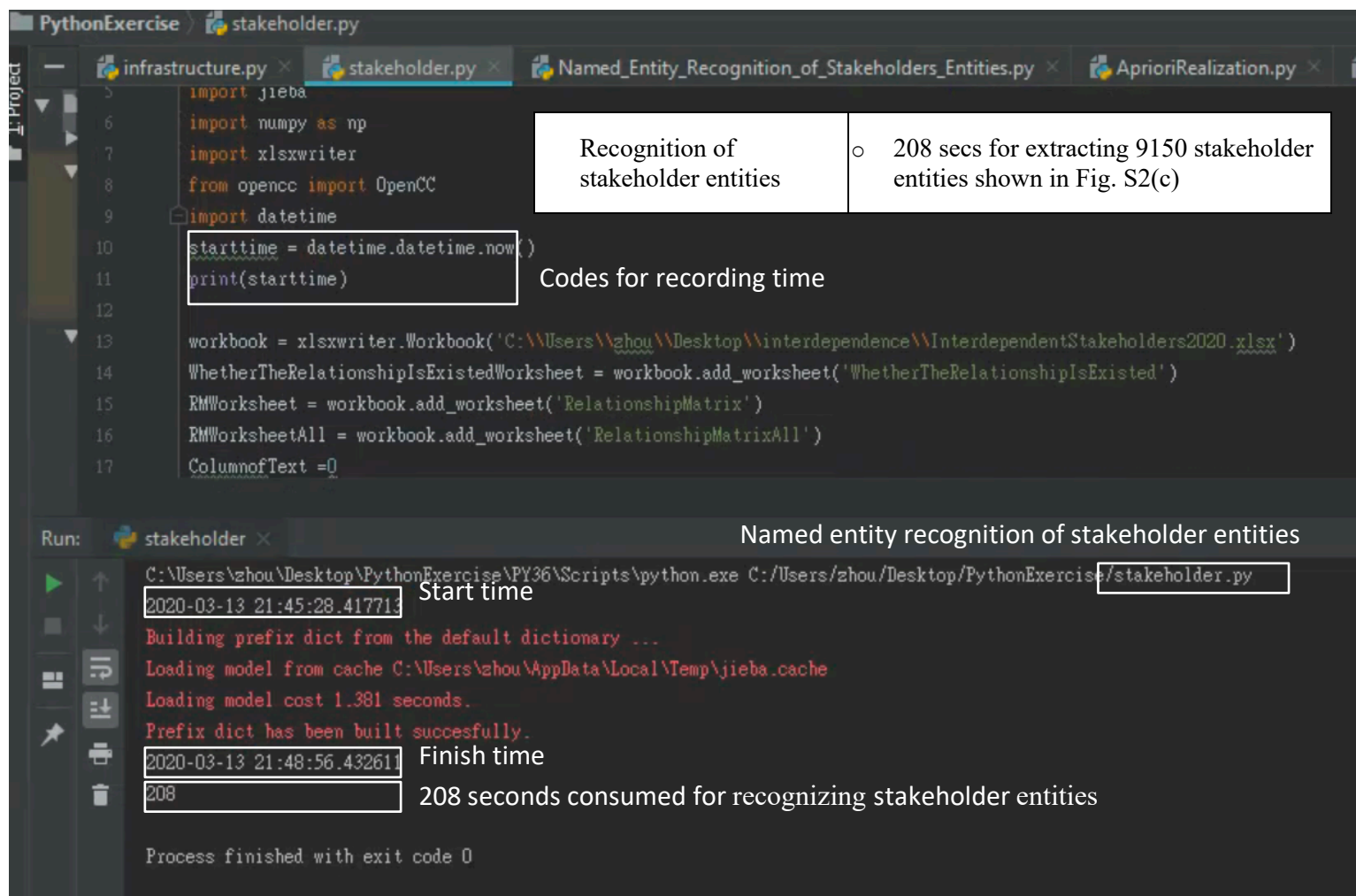
Configurations of the computer
Operation system: Win7
CPU: Intel i7 8th
RAM: 12G
ROM: 512G



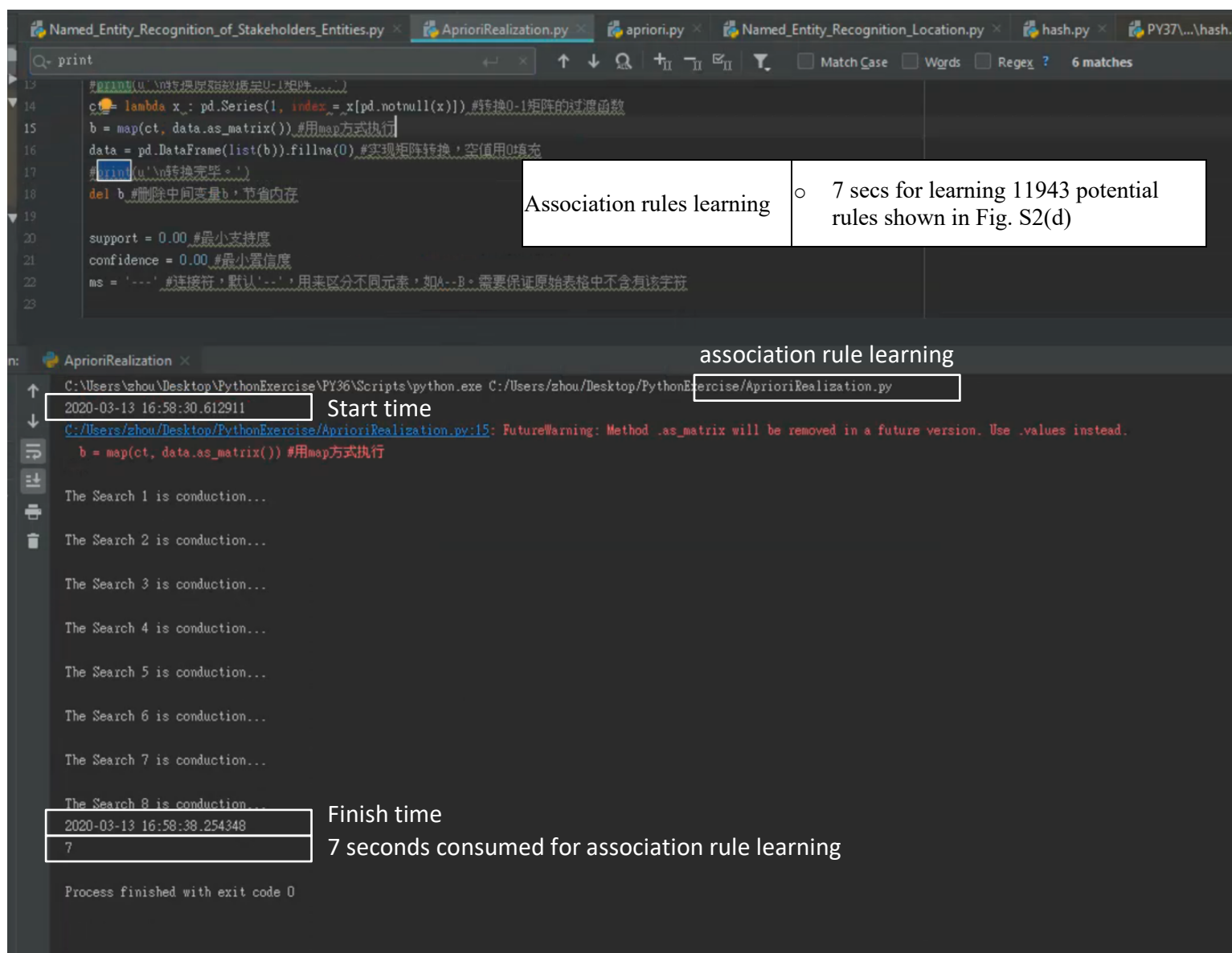
(a) Time consumed by web-crawler for collecting news articles



(b) Time consumed by recognizing infrastructure entities



(c) Time consumed by recognizing infrastructure entities



(d) Time consumed by association rule learning

Figure S4-1 Time consumptions of main steps in the text mining approach