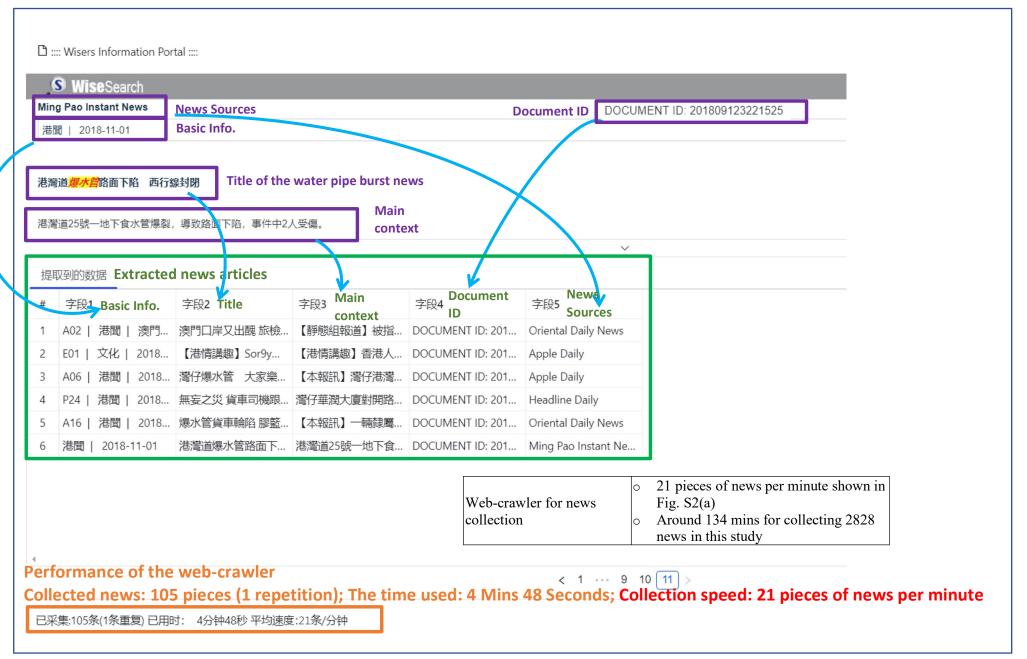
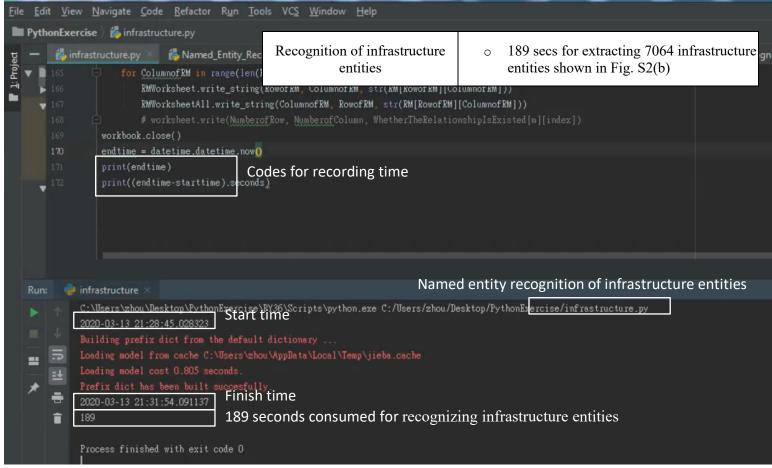
Configurations of the computer

Operation system: Win7

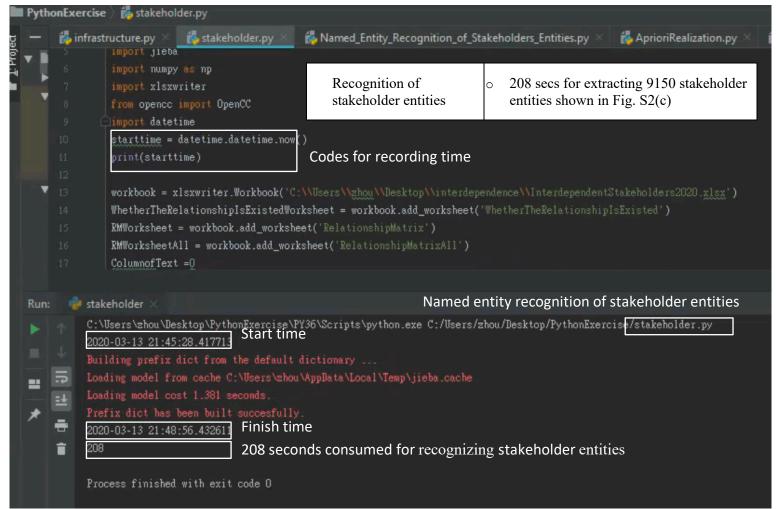
CPU: Intel i7 8th RAM: 12G ROM: 512G



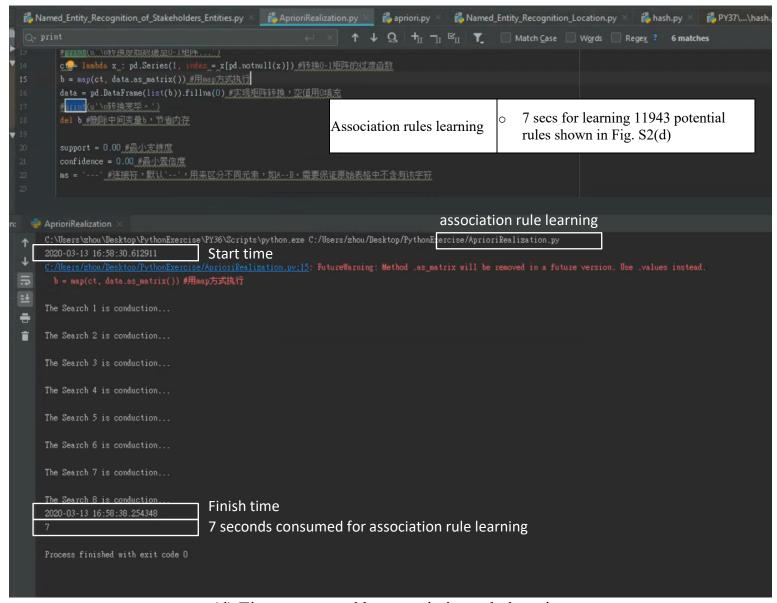
(a) Time consumed by web-crawler for collecting news articles



(b) Time consumed by recognizing infrastructure entities



(c) Time consumed by recognizing infrastructure entities



(d) Time consumed by association rule learning

Fig. S2 Time consumptions of main steps in the text mining approach