

CECS 451
Assignment 7
Total: 20 Points

General Instruction

- Submit uncompressed file(s) in the Dropbox folder via BeachBoard (Not email).
 - For the answers for exercises, use pdf format. Other formats are not acceptable.
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1. (10 points) Test a Bayesian network tool on your workstation.
 - i. Find `bayes.jar` and run it on your workstation.
 - ii. Create nodes and edges to represent Figure 1.
 - iii. Set the CPT (conditional probability table) to represent Figure 2.
 - iv. Save the result as `Assn7.xml` and submit it.
2. Write answers the following questions. (pdf file submission)
 - (a) (2 points) $\vec{P}(\text{Visit to Asia} \mid \text{dyspnoea})$
 - (b) (2 points) $\vec{P}(\text{Tuberculosis} \mid \text{positive X-ray}, \neg \text{dyspnoea})$
 - (c) (2 points) $P(\text{bronchitis} \mid \neg \text{lung cancer})$
 - (d) (2 points) $P(\neg \text{lung cancer} \mid \text{tuberculosis}, \neg \text{dyspnoea})$
 - (e) (2 points) $\vec{P}(\text{Smoking} \mid \neg \text{positive X-ray}, \text{bronchitis}, \neg \text{visit to asia})$

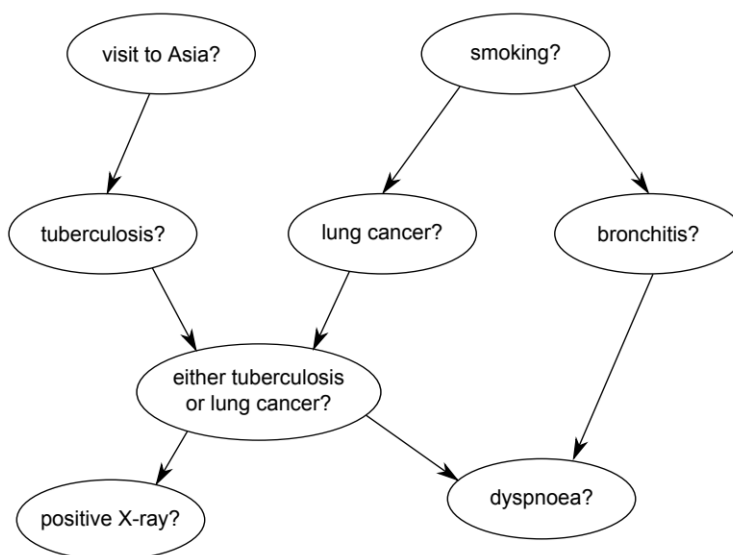


Figure 1: A network for tuberculosis and lung cancer.

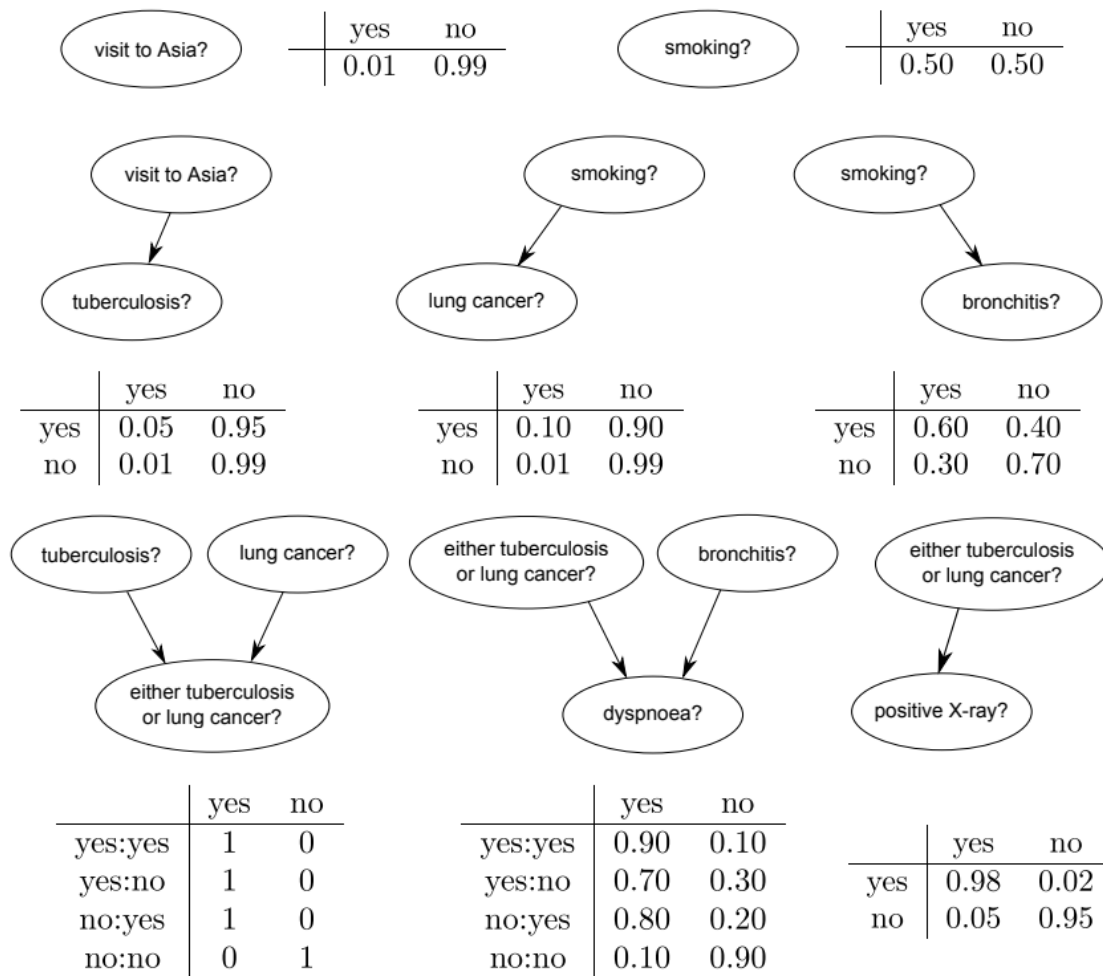


Figure 2: A CPT for tuberculosis and lung cancer.