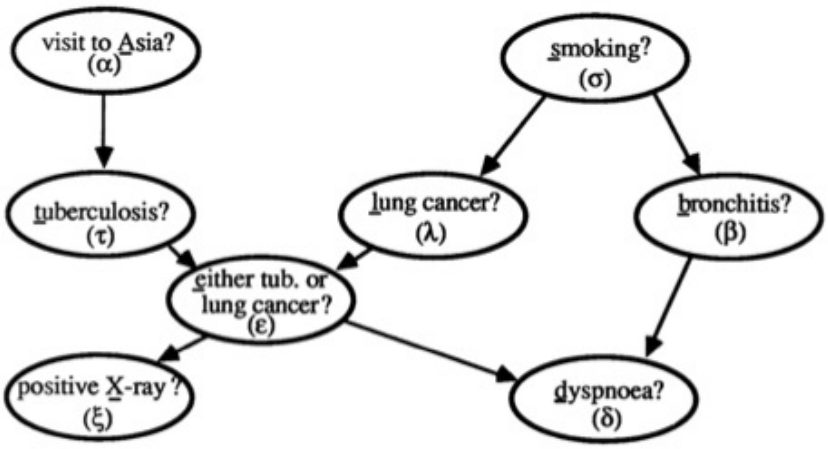
Programming Assignment (for HW 6)

Homework 6 (Programming Assignment B)

Write a program that encodes the Bayesian network given below. Your program should take as input evidence regarding the patients behavior or symptoms, and compute the a-posterior probabilities of the disease variables, i.e., tuberculosis, lung-cancer, or bronchitis. (You can also download this diagram from: here).



α:	$p(a)$	$= .01$	ε:	$p(e \mid l, t)$	$= 1$
				$p(e \mid l, \bar{t})$	$= 1$
τ:	$p(t \mid a)$	$= .05$		$p(e \mid \bar{l}, t)$	$= 1$
	$p(t \mid \bar{a})$	$= .01$		$p(e \mid \bar{l}, \bar{t})$	$= 0$
σ:	$p(s)$	$= .50$	ξ:	$p(x \mid e)$	$= .98$
				$p(x \mid \bar{e})$	$= .05$
λ:	$p(l \mid s)$	$= .10$			
	$p(l \mid \bar{s})$	$= .01$	δ:	$p(d \mid e, b)$	$= .90$
				$p(d \mid e, \bar{b})$	$= .70$
β:	$p(b \mid s)$	$= .60$		$p(d \mid \bar{e}, b)$	$= .80$
	$p(b \mid \bar{s})$	$= .30$		$p(d \mid \bar{e}, \bar{b})$	$= .10$

You will need to run your program to answer the questions posed to you in Homework 6; as before, the exercise will be timed, so that manual computation is not an option!

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