Master of Technology in Knowledge Engineering

Unit 1

Intelligent Systems & Techniques for Business Analytics

Exercise & Discussion

— Bayesian Nets

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Exercise

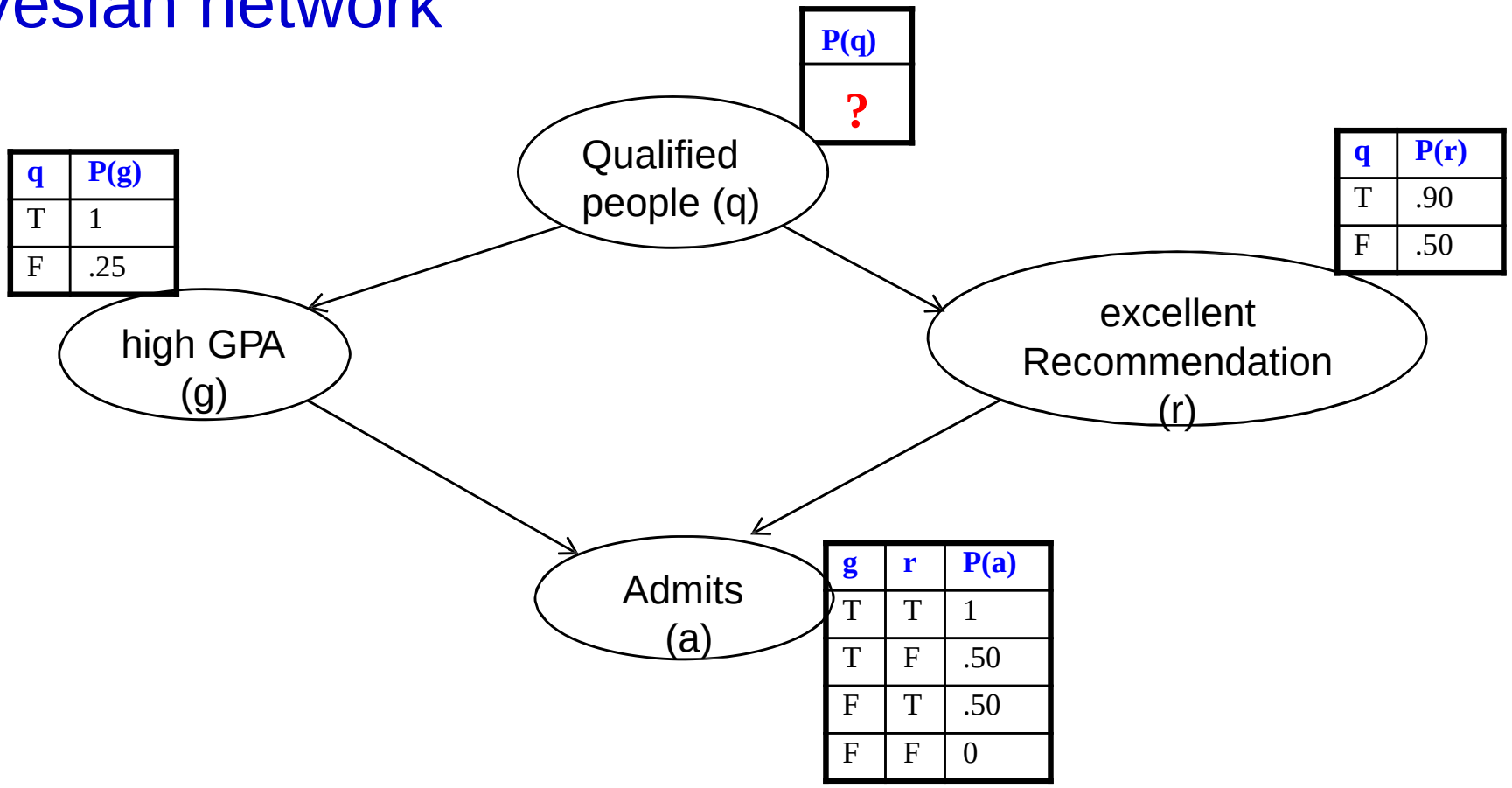
- An admission committee of a college is trying to determine the probability that "an admitted applicant is really qualified". [Roventa & Spircu, *Management of Knowledge Imperfection in Building Intelligent Systems*, 2009]
- Your task (given the background information)
  - » Construct a Bayesian network
  - » For each node, determine the conditional probability table
  - » Determine the probability that an admitted applicant is really qualified
  - » Make your assumption if there is any conditions currently missing in the background information given

Exercise (cont.)

- Background information
  - Qualified people have high GPA, however only about 90% of qualified people are able to obtain excellent recommendations.
  - About a half of non-qualified people also possess excellent recommendations and about a quarter of non-qualified people have high GPA.
  - The admission committee "admits" all applicants who have high GPA and possess excellent recommendation. All applicants who have not a GPA **and** do not possess excellent recommendation are "rejected". The committee "admits" half of the rest applicants.

Exercise: Discussion

- Bayesian network



q	P(g)
T	1
F	.25

q	P(r)
T	.90
F	.50

g	r	P(a)
T	T	1
T	F	.50
F	T	.50
F	F	0