Graph Data Model

Example 1
(TouchGraph Sales Excel Sample)

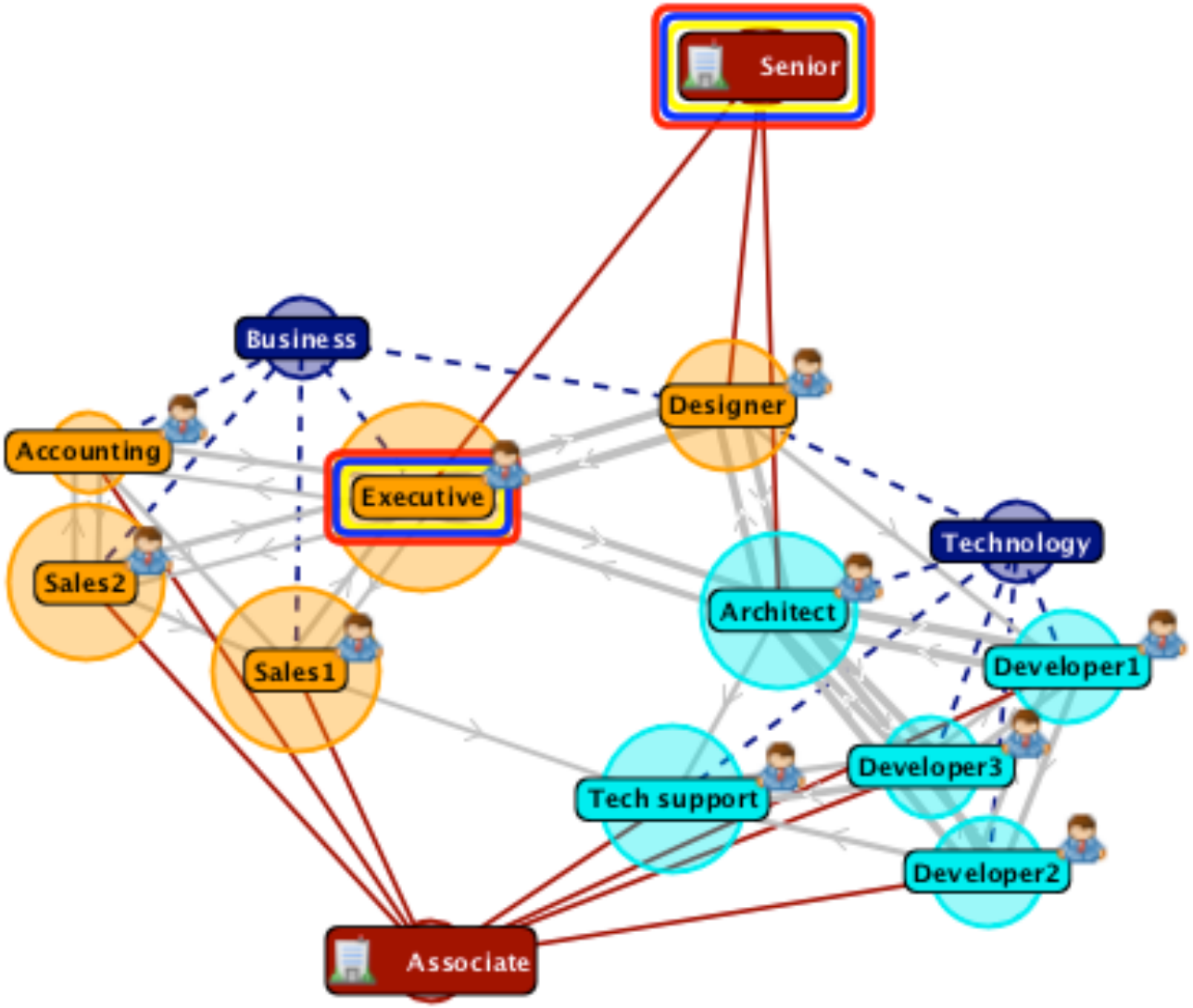
- Contrast the relational and graph based models for the domain
- Reverse engineer to a conceptual model
- Which properties would you associate with nodes and edges?
- List in natural language some traversal queries and compare them with their SQL counterparts

PERSON(Name, Email, Level, Division)

Person ▲	Email	Sent #	Received #	Level	Division
Accounting	accounting@company.c...	200	150	Associate	Business
Architect	architect@company.com	700	750	Senior	Technology
Designer	designer@company.com	500	550	Senior	Business; Technology
Developer1	developer1@company....	350	400	Associate	Technology
Developer2	developer2@company....	350	350	Associate	Technology
Developer3	developer3@company....	300	350	Associate	Technology
Executive	executive@company.com	1000	900	Senior	Business
Sales1	sales1@company.com	800	900	Associate	Business
Sales2	sales2@company.com	700	800	Associate	Business
Tech support	tech support@compan...	600	600	Associate	Technology

EMAILS(Sender^{PERSON}, Recipient^{PERSON}, NbrEmail)

Sender	Recipient	Sent #
Developer1	Developer2	80
Developer1	Developer3	70
Developer2	Developer1	60
Developer3	Developer1	50
Architect	Designer	120
Designer	Architect	120
Executive	Designer	120
Designer	Executive	150
Executive	Architect	100
Architect	Executive	90
Sales1	Tech support	40
Sales2	Tech support	30
Tech support	Sales1	20
Architect	Developer1	150
Developer1	Architect	140
Executive	Sales1	40
Executive	Sales2	40
Sales1	Executive	60
Sales2	Executive	70
Architect	Tech support	50
Tech support	Architect	20
Executive	Accounting	40
Accounting	Executive	70
Developer2	Developer3	60
Developer3	Developer2	30
Designer	Developer1	50
Developer1	Designer	30
Sales1	Accounting	20


Senior
Business
Designer
Accounting
Executive
Technology
Sales2
Architect
Developer1
Sales1
Developer3
Tech support
Developer2
Associate

Proposed Exercise: Twitter

- Represent as a graph the information you find on twitter https://twitter.com

- Contrast the resulting graph with the corresponding relational schema for a subset of twitter information in what follows:

  TWEET(TweetId, User^{USER}, Date, Country, Retweet$_O^{TWEET}$)

  USER(UserId, Psswd, Name, Country, SubscrDate)

  FOLLOWS(Follower^{USER}, Followed^{USER}, SinceWhen)

  LIKES(User^{USER},Tweet^{TWEET})

- Reverse engineer to a conceptual model
- Identify and express in natural language the queries corresponding to typical functionalities of the application. Compare the graph and relational representation wrt such queries
- List in natural language some traversal queries and compare them with their SQL counterparts