

Pre-lecture video

- **Decomposing** composers
- <http://www.youtube.com/watch?v=IkRXTT-15WM>

Data Storage and Formats, Fall 2008

**Lecture 7, part 1:
Problematic database designs**

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Today's lecture, first part

- Back to basics: Database design!
- We will look at database designs that may be problematic, in one sense or another.
- Aims:
 - Learn some design anti-patterns, and
 - motivate looking at a **theory** covering certain aspects of "good design" (second part).

Example 1

actorInfo

movie	year	length	actor	character
E.T.	1980	97	S. Little	Elliott
Rambo	1988	102	S. Stallone	John Rambo
Rambo	1988	102	B. Nielsen	June
...

Example 2

Movies

movie	year	length
E.T.	1980	97
Rambo	1988	102
Rambo	1988	102
...	...	

Actors

actor	character
S. Little	Elliott
S. Stallone	John Rambo
B. Nielsen	June
...	...

Example 3

starredTogether

movie	actor1	role1	actor2	role2
Rambo	S. Stallone	J. Rambo	B. Nielsen	June
...

Example 4

ClientId	OfficeId	AccountNumber
1	FRB	1111111111
2	FRB	2222222222
1	NRB	3333333333
2	NRB	3333333333
3	NRB	4444444444
1	AMA	5555555555
...

Rules:

- A client has at most one account in each office.
- Several clients may share an account.
- An accountnumber belongs to a unique office.

Example 5

Table	Column
actorInfo	movie
actorInfo	actor
ratings	score
...	...

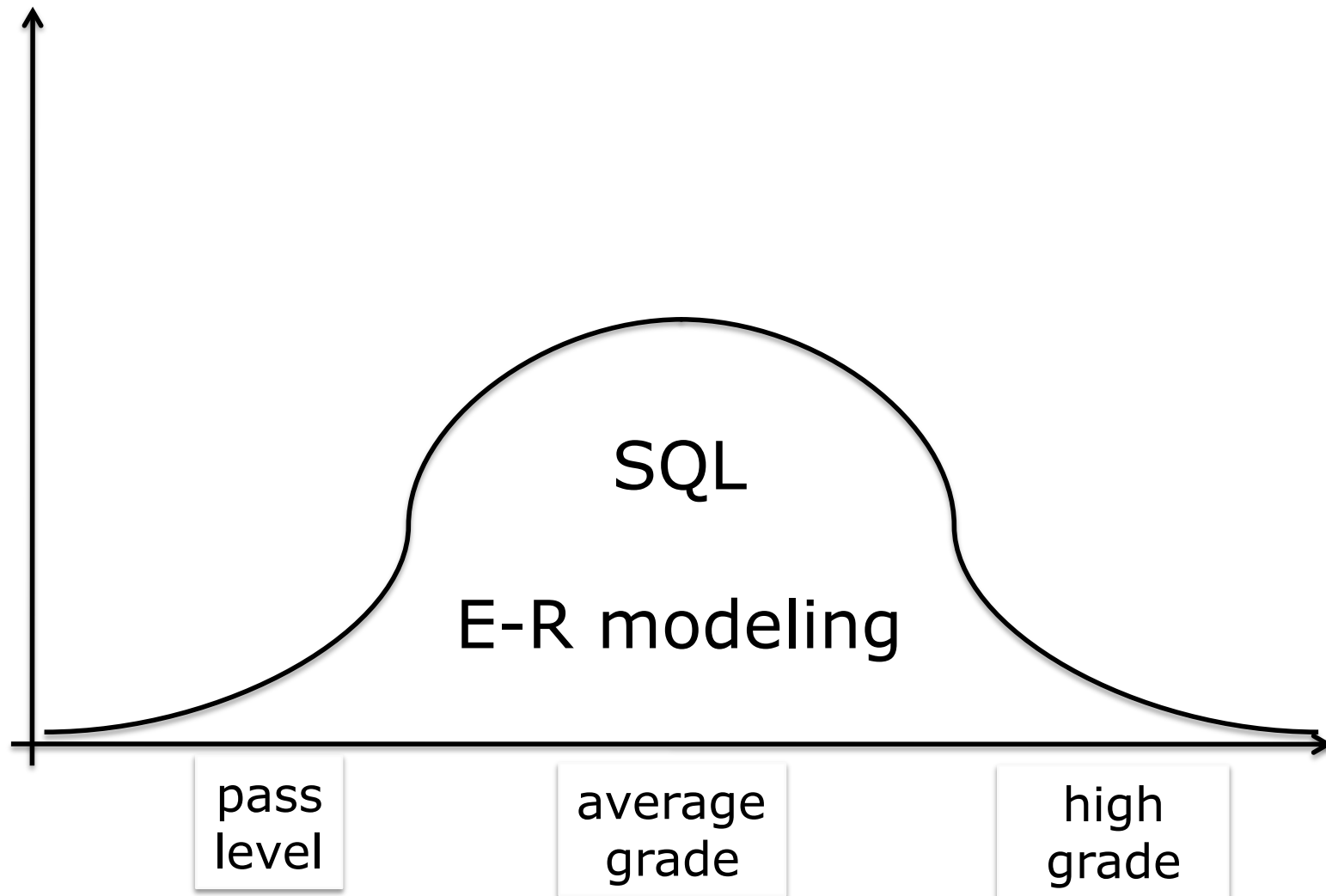
Table	RowID
actorInfo	1
ratings	2
ratings	3
...	...

RowID	Column	Value
1	movie	Rambo
1	actor	S. Stallone
2	movie	The Matrix
2	score	8.7
3	movie	Rambo
3	score	6.8
...

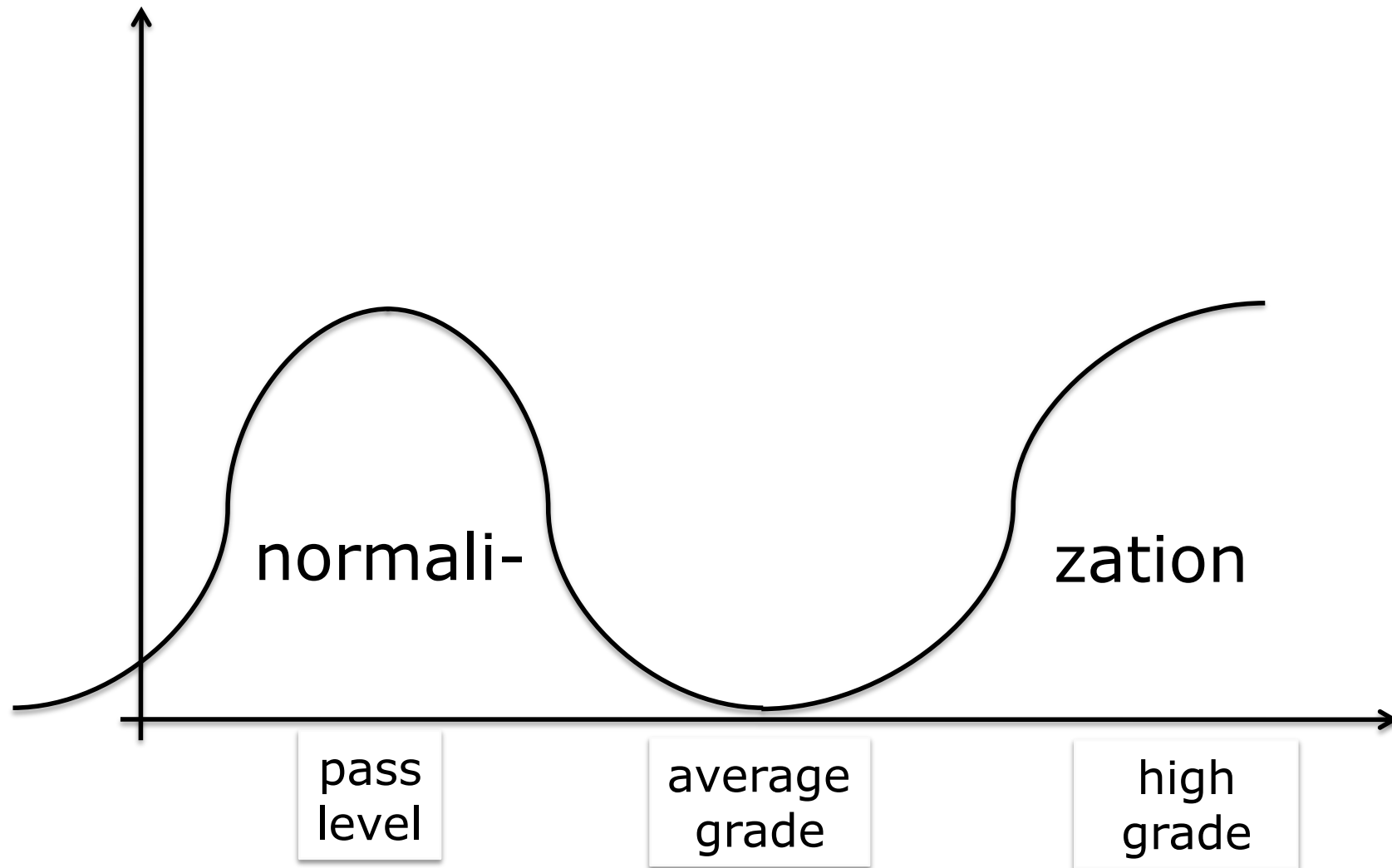
Next: Normalization

- A technique for eliminating certain types of problematic design.
- Later in the course we will introduce the reverse process **denormalization!**

Typical skill distribution



Typical skill distribution



Your goal for this course

- a) To learn as much as possible?
- b) To get the highest possible grade?
- c) To do as little as possible?
- d) To have fun?

- a) is fine, (and $a \Rightarrow b$)
- b) is fine, $b \Rightarrow a$ (careful exam design)
- c) is fine - no significant shortcuts, but effort correlated with grade.
- d) is fine, corellates with a) and b)