

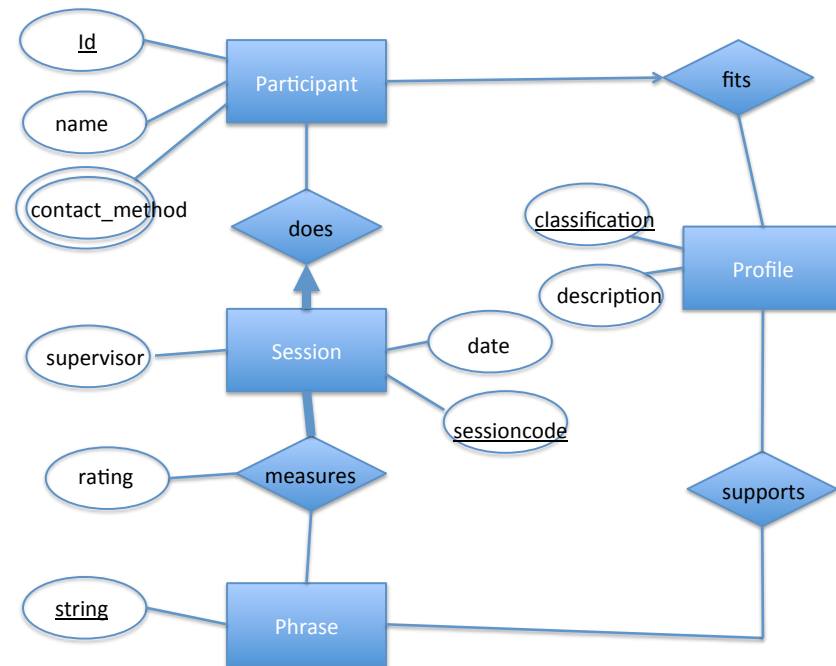
lsys2120 lab2

Sem2 2022

C(a)

- Give another instance that could exist (in addition to a participant whose Id is 76, with name “Jane Carter” and contact methods {“phone 04030356” and “email jane20@gmail.com”}). Does the model allow several participants with the same name?

Another example could be anything with the attributes mentioned, as long as the id is not 76. Two participants with same name is allowed by this model because there is no underlining or other sign for uniqueness on the name attribute.



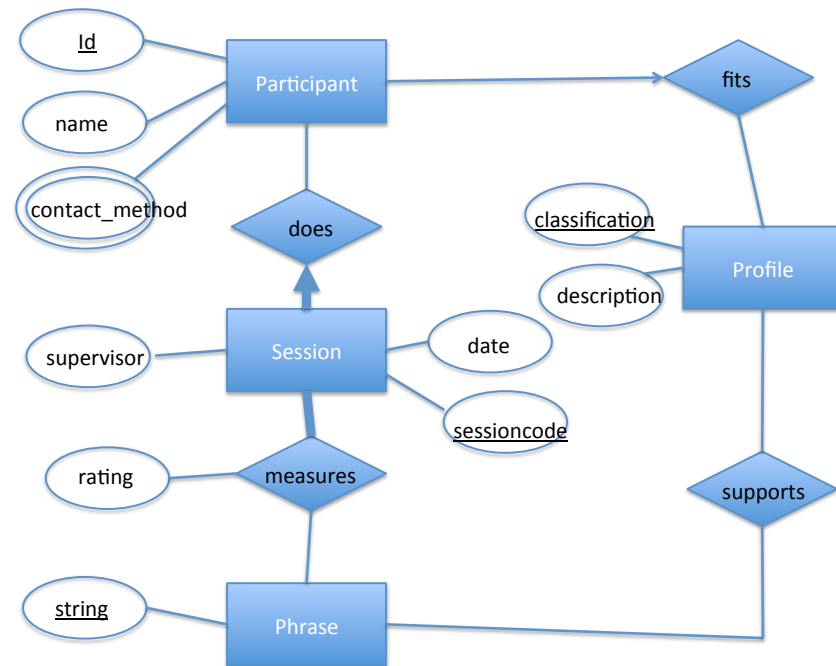
C(b)

Which of the following are true statements?

- (i) every participant does at least one session
- (ii) every participant does at most one session
- (iii) every session is done by at least one participant
- (iv) every session is done by at most one participant

Give some other facts that could be true at the same time as "Participant 57 does a session with code 687." Give some facts that could not be true at the same time as this.

The thick arrow from Session to Does, means that every session is in the relationship (thick), and that a session is in at most one relationship (arrow); that is, each session is done by exactly one participant. That is (iii) and (iv) are valid. However, the line from Participant to Does is thin and not-arrowed, so (i) and (ii) are not necessarily true [though they might hold in particular states of the database] So Participant 57 does session 521 might be true, Participant 20 does session 521 might be true. But we can't have Participant 20 does session 687, nor can the database show that Session 521 is not done by any participant.



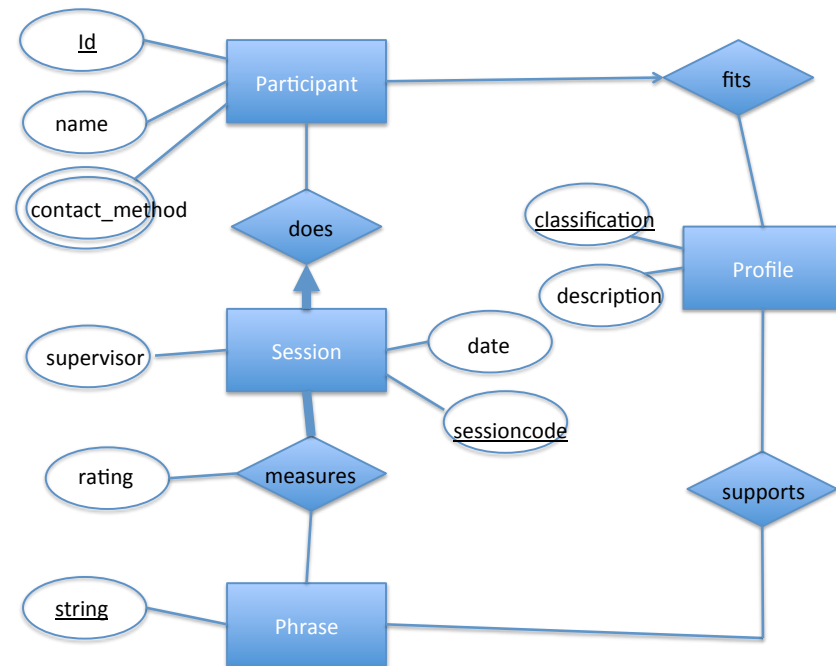
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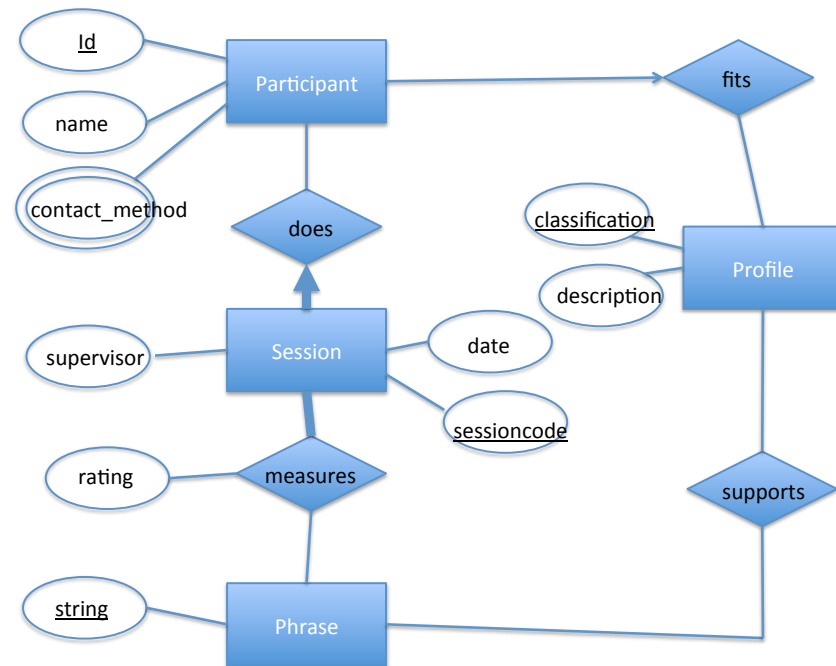


C(c)

Which of the following is a true statement, based on the diagram?

- (i) every session measures at least one phrase
- (ii) every session measures at most one phrase
- (iii) every phrase is measured in at least one session
- (iv) every phrase is measured in at most one session

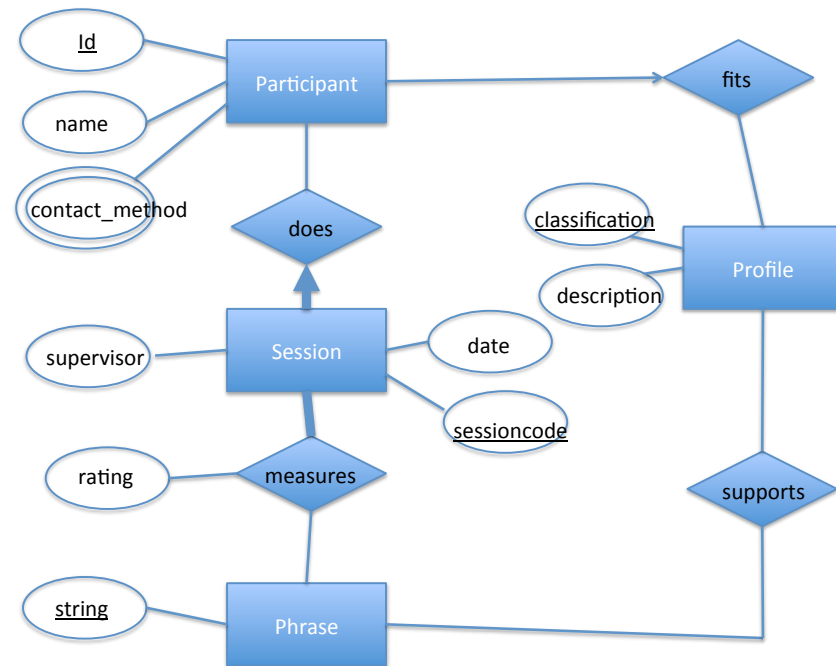
Because the line from Session to measures is thick but not arrowed, (i) is necessarily true, but (ii) is not always true. The line from Phrase to measures is neither thick nor arrowed; so neither (iii) nor (iv) is necessarily true.



C(d)

Suppose that the domain experts tell us, that a phrase can show support for only one profile. How would you change the diagram to indicate this?

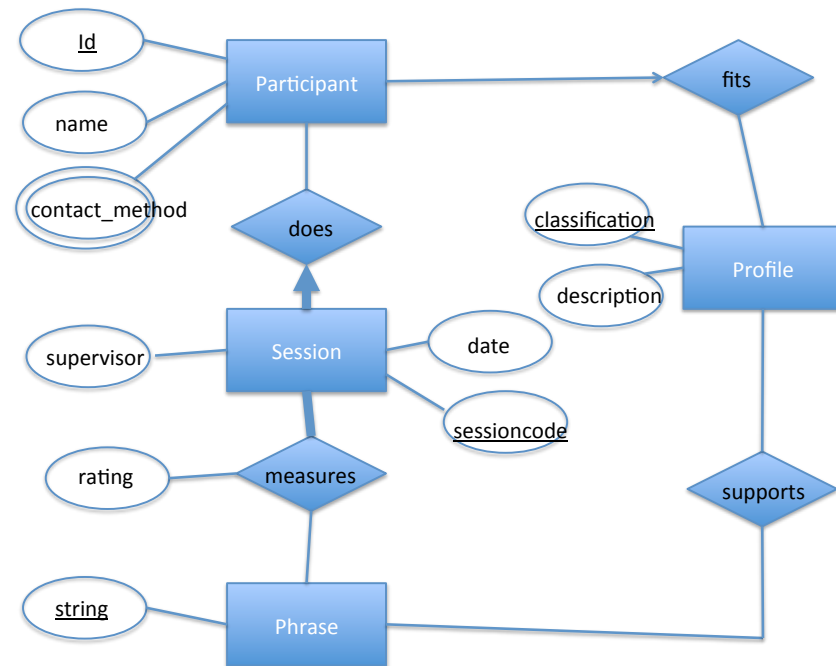
- *Put an arrow on the (thin) line from Phrase to Supports*



C(e)

In the diagram, the attribute “rating” is placed on the relationship “measures”. What would be the difficulty, if rating were instead shown as an attribute of Phrase?

In this alternative diagram, one could not track that each person chooses their own rating for the phrase; there could only be one rating that applied to the phrase (for everyone)



C(f)

Suppose the lab knows that certain personality profiles are suited to particular jobs, and they want to know whether the participants have jobs for which they are suited. How could you adjust the ER diagram, to keep this information too.

Add an Entity type Jobs, and a relationship type “suited_to” between Profile and Jobs. The wording suggests that each Profile might be suited to several jobs (not just one) and so the line from Profile to the diamond should be thin. It isn’t stated whether every Profile has some Job it is suited for (what job might be for a psychopath?), so we should ask the domain experts, and then put an arrow on this line, or not. We would also ask the experts whether there could be jobs that were good for people from a range of Profiles, etc. Depending on the domain expert’s answers, the lines around the suited_to diamond might be marked in various ways.

