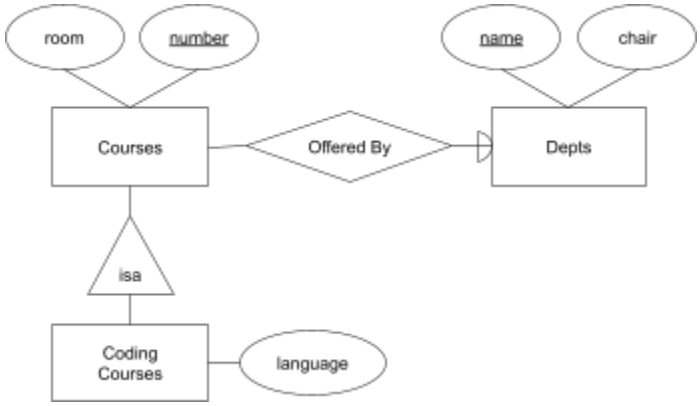
Given R(A, B, C, D, E, F), and functional dependencies: B → A; E → B; D → C; A → C

a) Decompose R into BCNF. In each step, explain which functional dependency you used to decompose and explain why further decomposition is needed. Your answer should consist of a list of table names and attributes. Make sure you indicate the keys for each relation.

b) Convert the E/R diagram below to relations in BCNF form. Assume no values are `NULL`, and the arrow between `OfferedBy` and `Depts` is a round one. Include all keys and foreign keys. Use the following notation and explicitly state foreign key relationships. For instance:

```
R(a, b)
S(c, d) -- c is a foreign key to R
```



Brendan is trying to advertise his newest research paper, 'SequelLight: A Novel Database Management System'. He plans to go to travel to multiple conferences and tell the database world about his revolutionary findings.

(a) (6 points) Brendan hires you to build a database to keep track of the conferences he'll be going to. In a moment of clarity, you decide to do the database design first to prevent future issues. Create an E/R diagram with the following rules to represent these descriptions and constraints:

- Each conference has a name, location, and date.
- The names of conferences are unique.
- Conferences have multiple attendees, who may also attend other conferences.
- Attendees have a name and age.
- The names of attendees are unique.
- Attendees can either be from industry or from academia. Attendees from industry are associated with a company and attendees from academia are associated with a university.