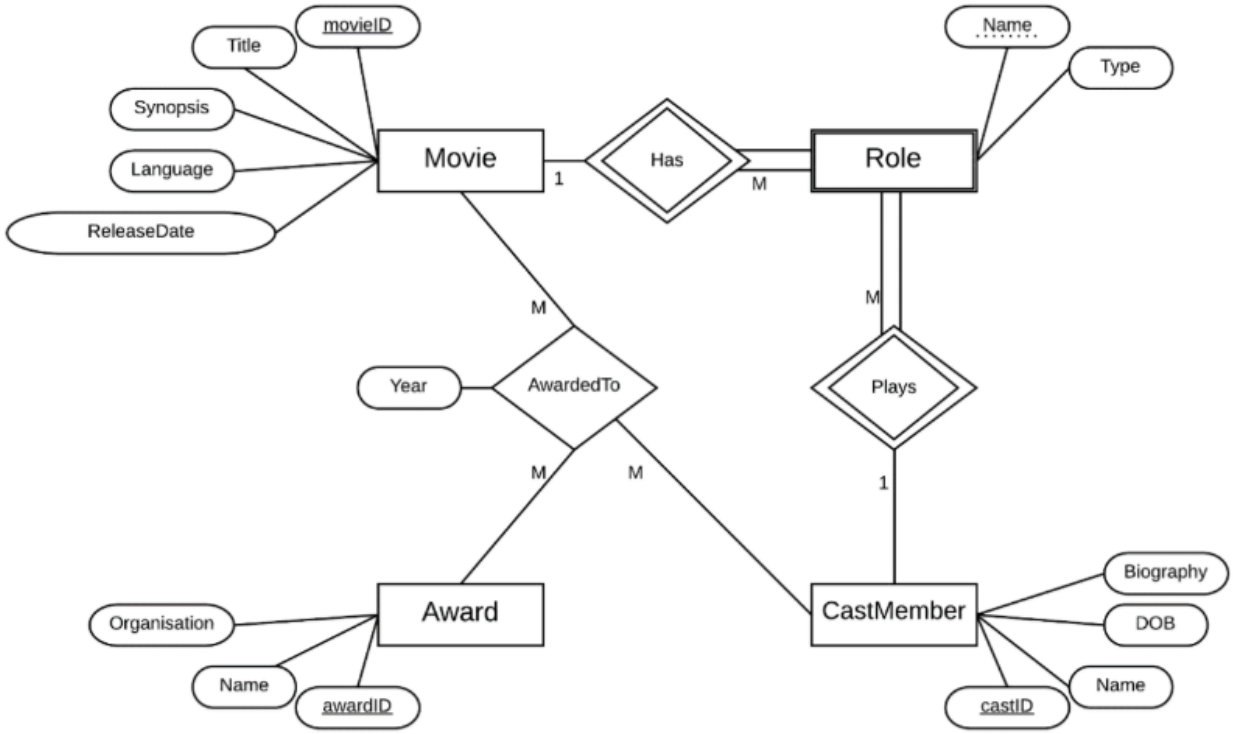
Consider the ER diagram below, and determine whether each of the following claims is true or false; briefly justify your answer for both options.

The Role.Name attribute holds information on the role name. eg. Harry Potter, Lead Director, Albus Dumbledore

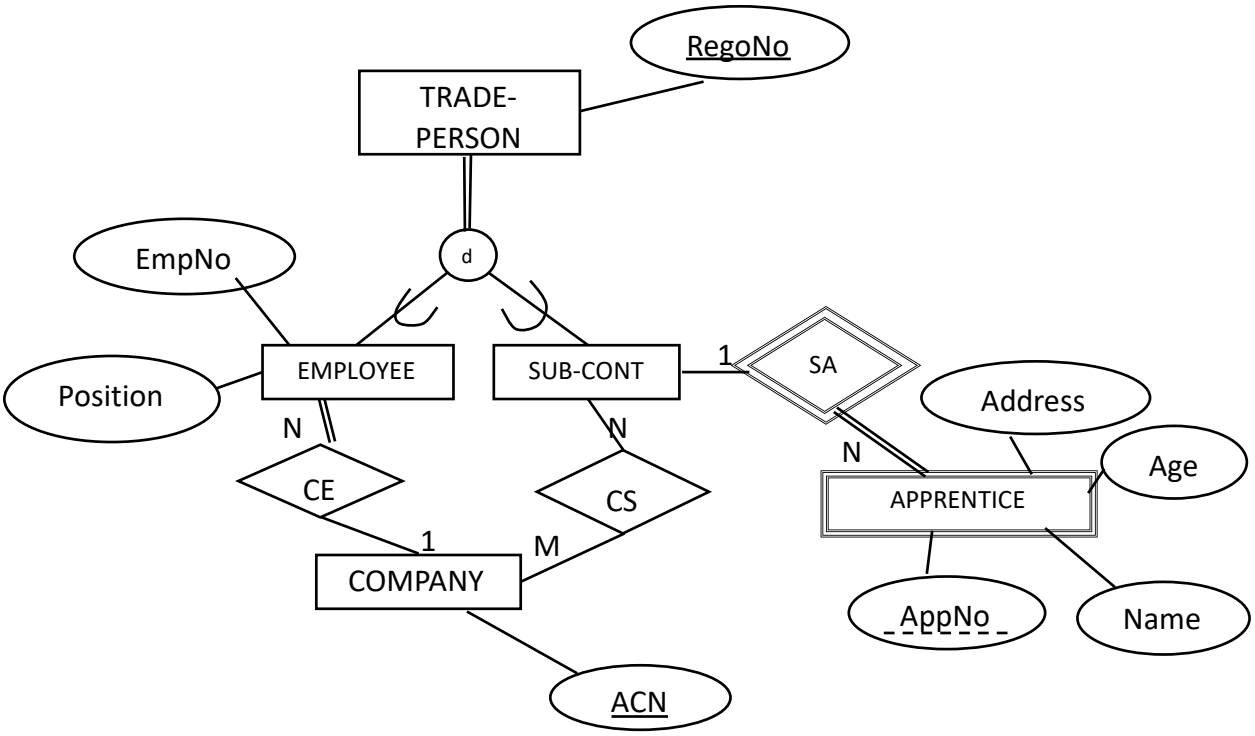
The Role.Type attribute holds on information on the type of the role. Eg. The role of Harry Potter is an actor, the role of Lead Director is a director.



Claims	T/F?	Brief Justification
Each Movie can receive multiple awards.		
The key of the Role relation will consist of 2 attributes		
A CastMember can be an actor in 3 Movies.		
Each Movie can have only one director.		
An Award cannot be given to the same Movie more than once		
Awards can only be given to Movies in the year they are released		
A CastMember may be an actor, director and producer for the same Movie		

Transform the ER diagram into a relational schema using the methods discussed in class.

Remember to include your foreign keys in the form:
table1.attribute 1 references table2.attribute1



Reverse engineer this relational schema to an ER diagram

A[a, b, c]
B[a, b, d]
C[a, b, e, f]
D[g, h]
E[i, j]
F[i, k, l]
G[a, b, e, g, i, m]

B.(a, b) references A.(a, b)
C.(a, b) references A.(a, b)
F.i references E.i
G.(a, b, e) references C.(a, b, e)
G.g references D.G
G.i references F.i

Answer the following questions on closures and candidate keys.
Compute $\{A\}^+$ given the following functional dependencies

A → BC B → D AC → EF	$\{A\}^+$ =
A→BCG CD→E B→F FG→E	$\{A\}^+$ =

Find all the candidate keys of the following relations

R[A, B, C, D, E] A → B, C B → C, E C → D, A	Candidate keys
R[A, B, C, D, E, F] A, B → E, F C → B E → D, C	Candidate keys