1

Coach
- Daily Salary
- Phone
- Gender
- idCoach
- D.O.B
- Name
- Surname

Attended (N, M)

TV Show
- StartTime
- idShow(PK)
- EndTime
- Date
- Location

(N, M)

Coached by (1, N) (1, N)

Attended (N, M)

Contender
- idContender(PK)
- Stage Name
- Type

(1, 1) (1, N) (1, N)

Part of (1, 1)

Participant
- Contender(FK)
- Phone
- D.O.B
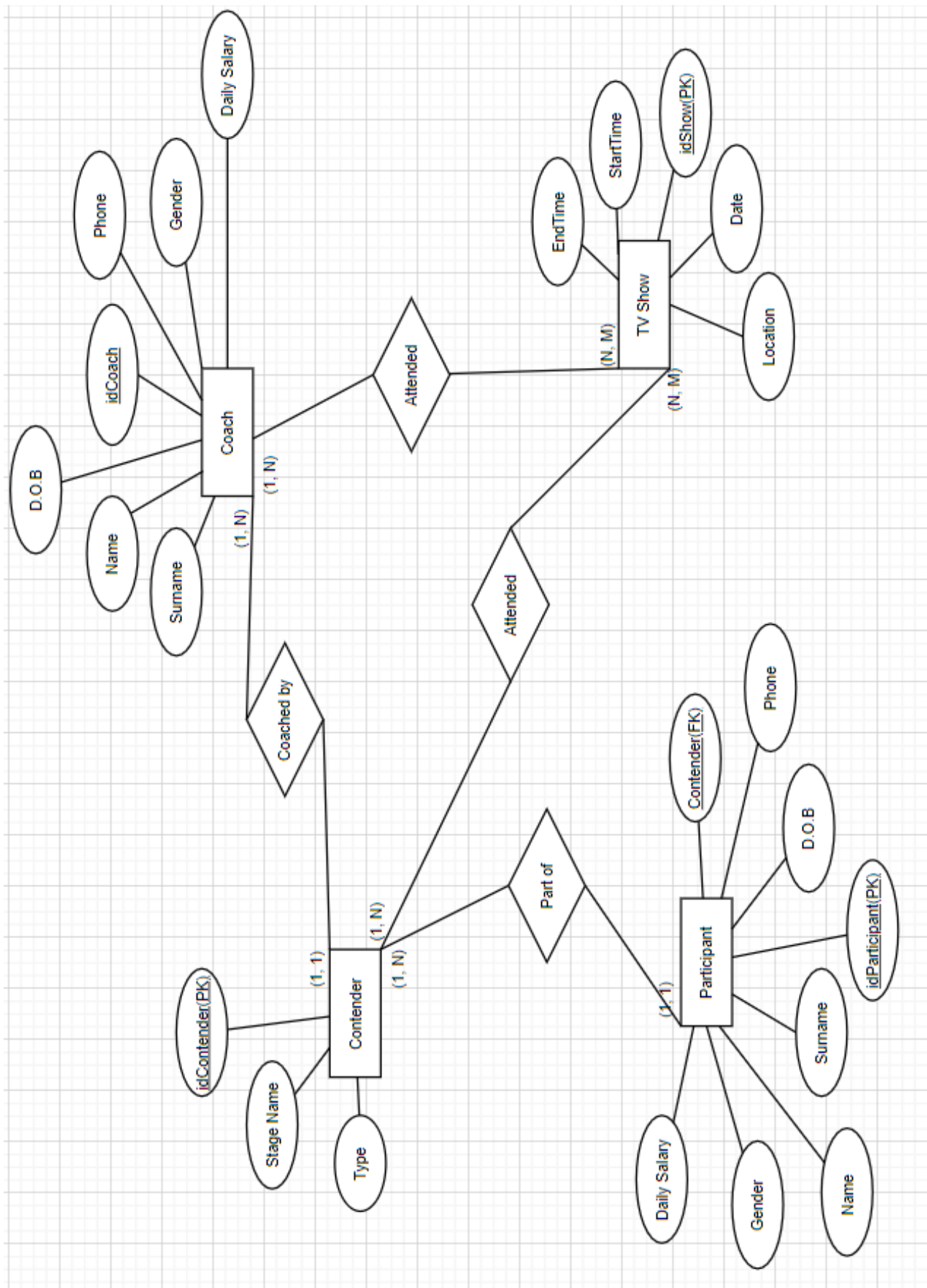- idParticipant(PK)
- Surname
- Daily Salary
- Gender
- Name

1.1 Diagram Choices

- Tuples 'CoachInShow' and 'ContenderInShow' were represented as two binary relationships 'Attended' between Coach and TVShow, and Contender and TVShow respectively.

- 'dailySalary' is an attribute of Coach and Participant. That way, the attribute is stored with the entity it is associated with(earnt by). It can be calculated from the TVShow attended by the Coach and (derived from) Contender.

- The relationship 'Part of' between Contender and Participant is how Contenders store the participant(s) forming the group.

- The relationship 'Coached by' connects Coach and Contender and stores which Coaches coach which Contenders.

1.2 Constraints and Assumptions

- The constraint on Participant in 'Part of' is (1,1), specifying that each Participant must be part of at least and at most one Contender.

- For Contender in 'Part of', it is (1, N) specifying that each contender must have at least one participant, with an unlimited maximum of, N, participants.

- Contender in 'Coached by' has constraint (1,1) since a contender must have one coach at any specific time.

- Coach in 'Coached by' has constraint (1,N) since a coach must be coaching at least one contender during the show, otherwise they are not deemed a coach in the show and should be removed.

- There is no specific maximum number of contenders a coach can coach, implied by the N maximum.

- The constraint on Contender and Coach in 'Attended' is (1,N). This is because a contender/coach must attend at least 1 show to be part of the series, and can go to a maximum of N shows, until the series is over.

- For TVShow, the constraint in both 'Attended' relationships is (N,M). For the TV show to occur, there would have to be many coaches and many contenders in attendance for it to be a competition, thus there is no constraint.

1.3 Identifying primary keys and foreign keys in the relational schema

Coach

name	surname	D.O.B	idCoach(PK)	phone	dailySalary	gender

Contender

stageName	type	idContender(PK)	coach(FK)

Participant

name	surname	D.O.B	idParticipant(PK)	phone	dailySalary	gender	contender(FK)

TVShow

location	date	idShow(PK)	startTime	endTime

CoachInShow

coach(FK)	show(FK)

ContenderInShow

contender(FK)	show(FK)