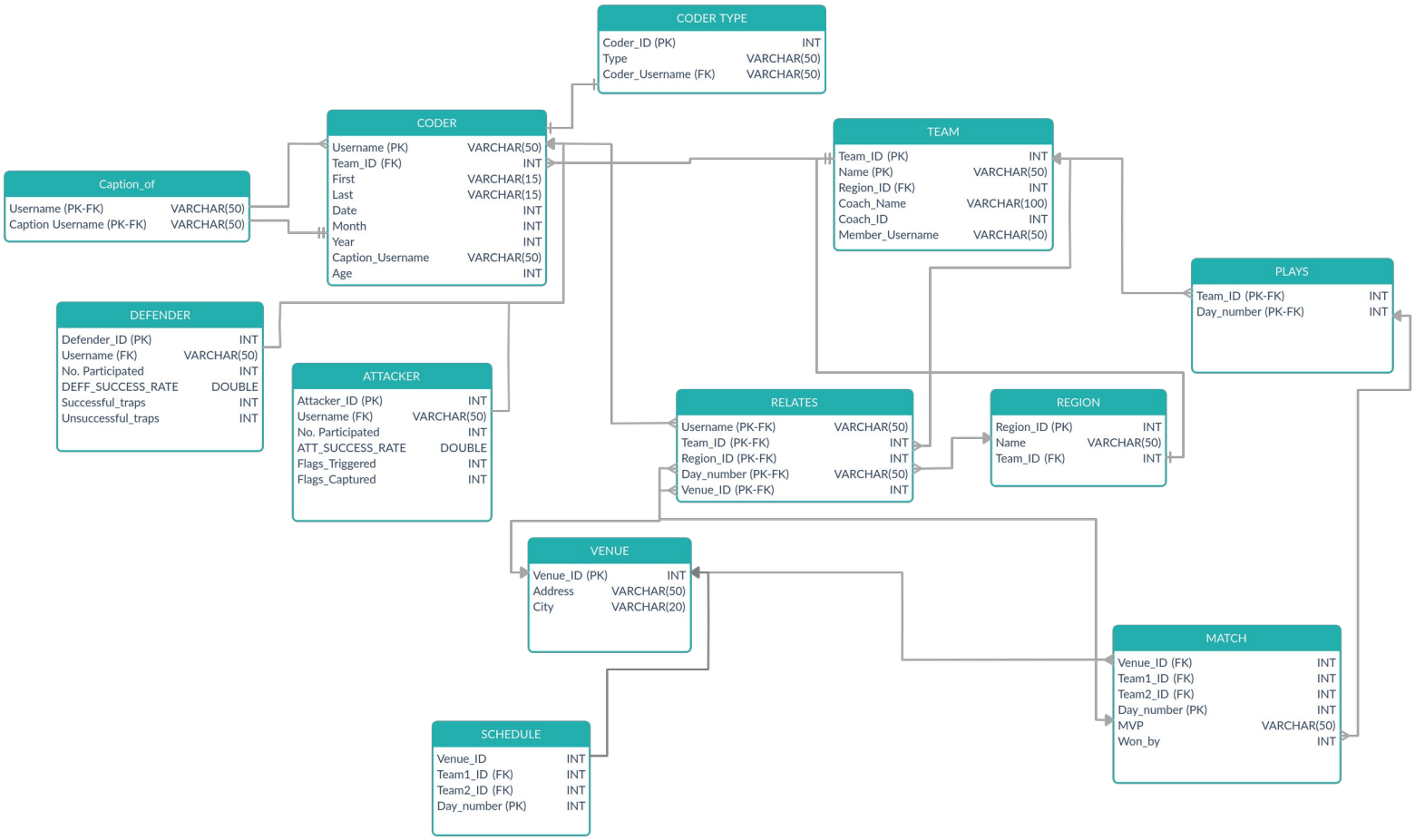
GUNJAN GUPTA – 2019111035
NIKHIL BISHNOI – 2019114021
MUSTAFA SIDDIQUI – 2018101128

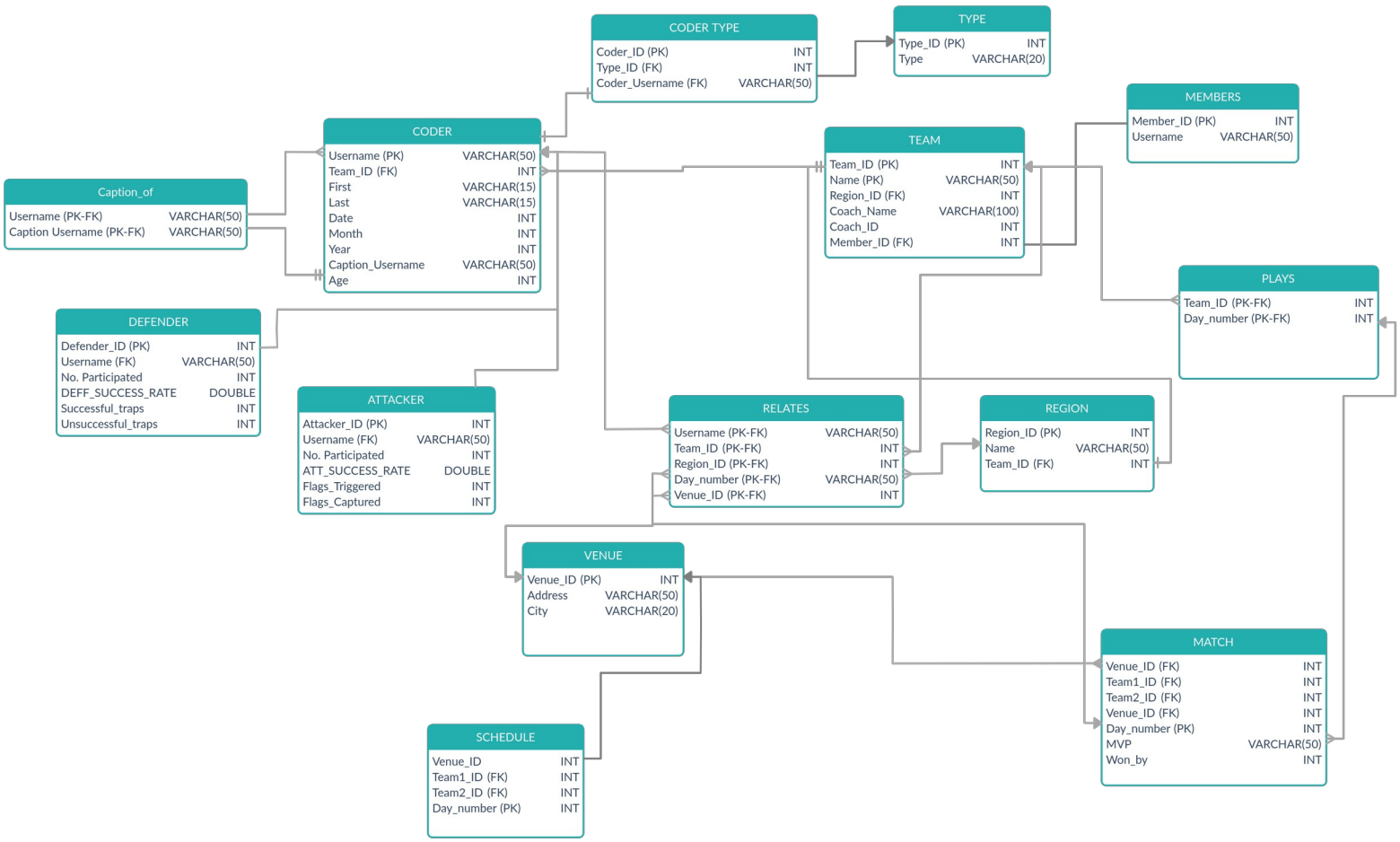
PROJECT PHASE #3

CAPTURE THE FLAG



The Relational Data Model is contsructed making relations of entities and some relationships that need different tables or relations to specify. For weak entities, a foriegn key is included of a strong entity. Relationships that doeesn’t have a specific relation or table are described by foriegn key and primary key.

FIRST NORMAL FORM:

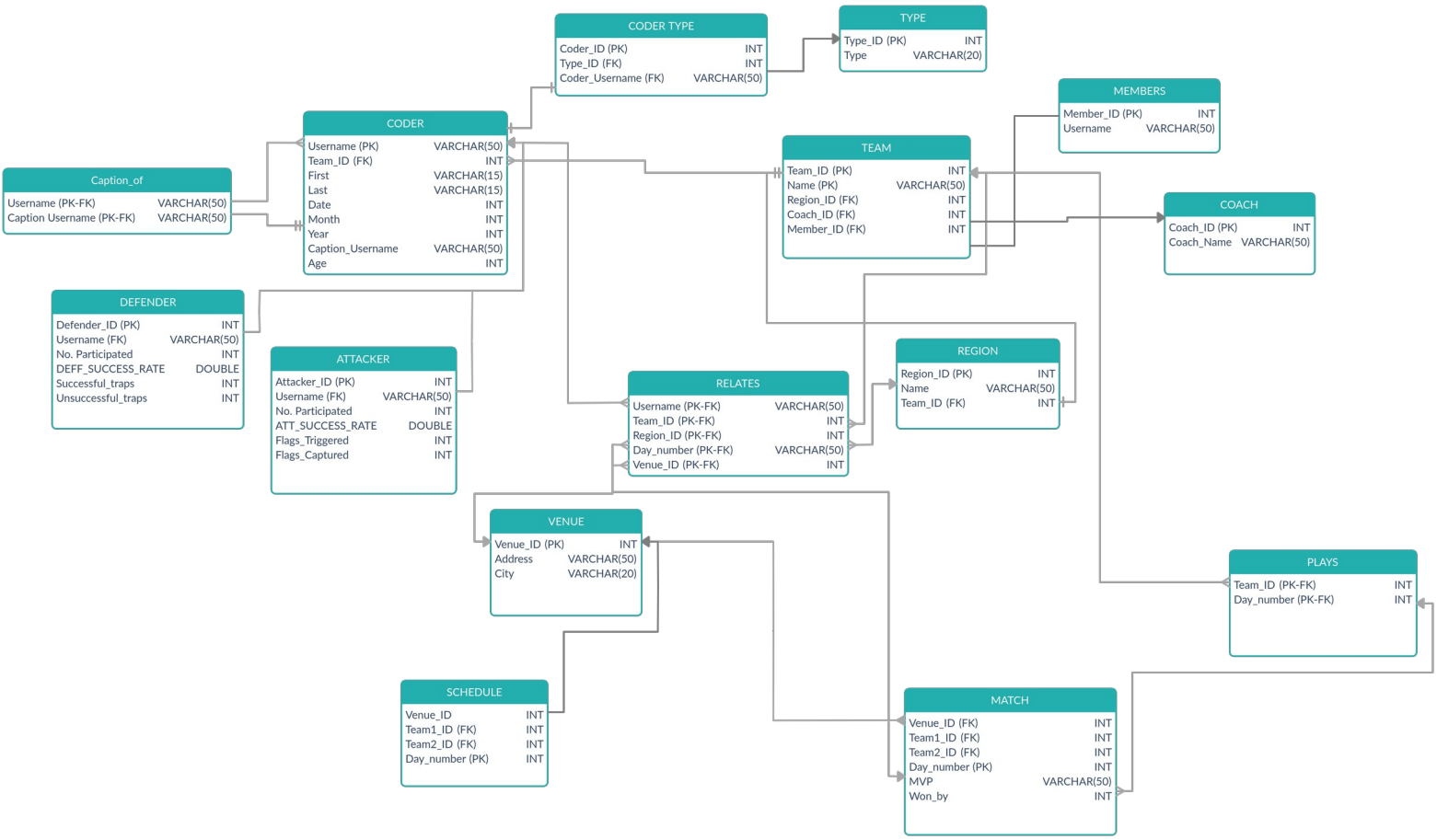


The Relational Data Model consists of some multivalued attributes, which voilates the First Normal Form. So, a new table or relation is made for every multivalued attribute.

TEAM relation contains attribute Member_Username which is multivalued attribute. So, a new table is made name MEMBERS with atrributes Member_ID (PK), Username.

CODER_TYPE relation contains attribute Type which is multivalued attribute. So, a new table is made name TYPE with atrributes Type_ID (PK), Type.

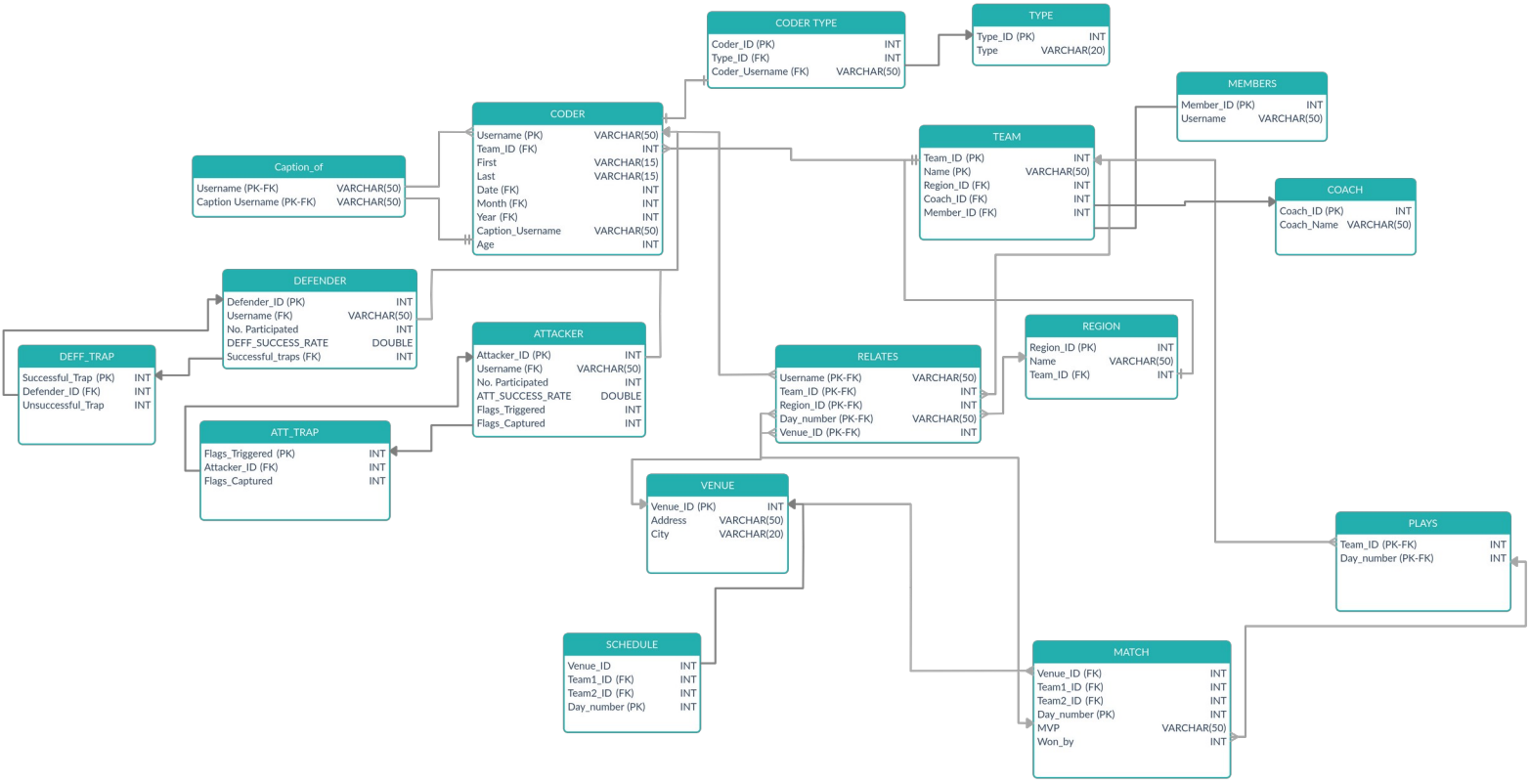
SECOND NORMAL FORM:



The Relational Data Model consists of some non prime attributes that are functionally dependent on relation's corresponding primary key, which voilates the Second Normal Form. So, a new table or relation is made for every non prime attribute.

Coach_Name is the attribute that is dependent on Coder_ID. So, a new table named COACH is created with attributes Caoch_ID, Coach_Name.

THIRD NORMAL FORM:



The Relational Data Model consists of some transitive functional dependency, which voilates the Third Normal Form. So, a new table or relation is made for every functional dependency.

Defender_ID determines the Successful_Trap and Successful_Trap determines Unsuccessful_Trap. So, a new table is made named DEFF_TRAP which consists of attributes Successful_Trap (PK), Unsuccessful_Trap and Defender_ID (FK).

Attacker_ID determines the Flags_Triggered and Flags_Triggered determines Flags_Captured. So, a new table is made named ATT_TRAP which consists of attributes Flags_Triggered (PK), Flags_Captured and Attacker_ID (FK).