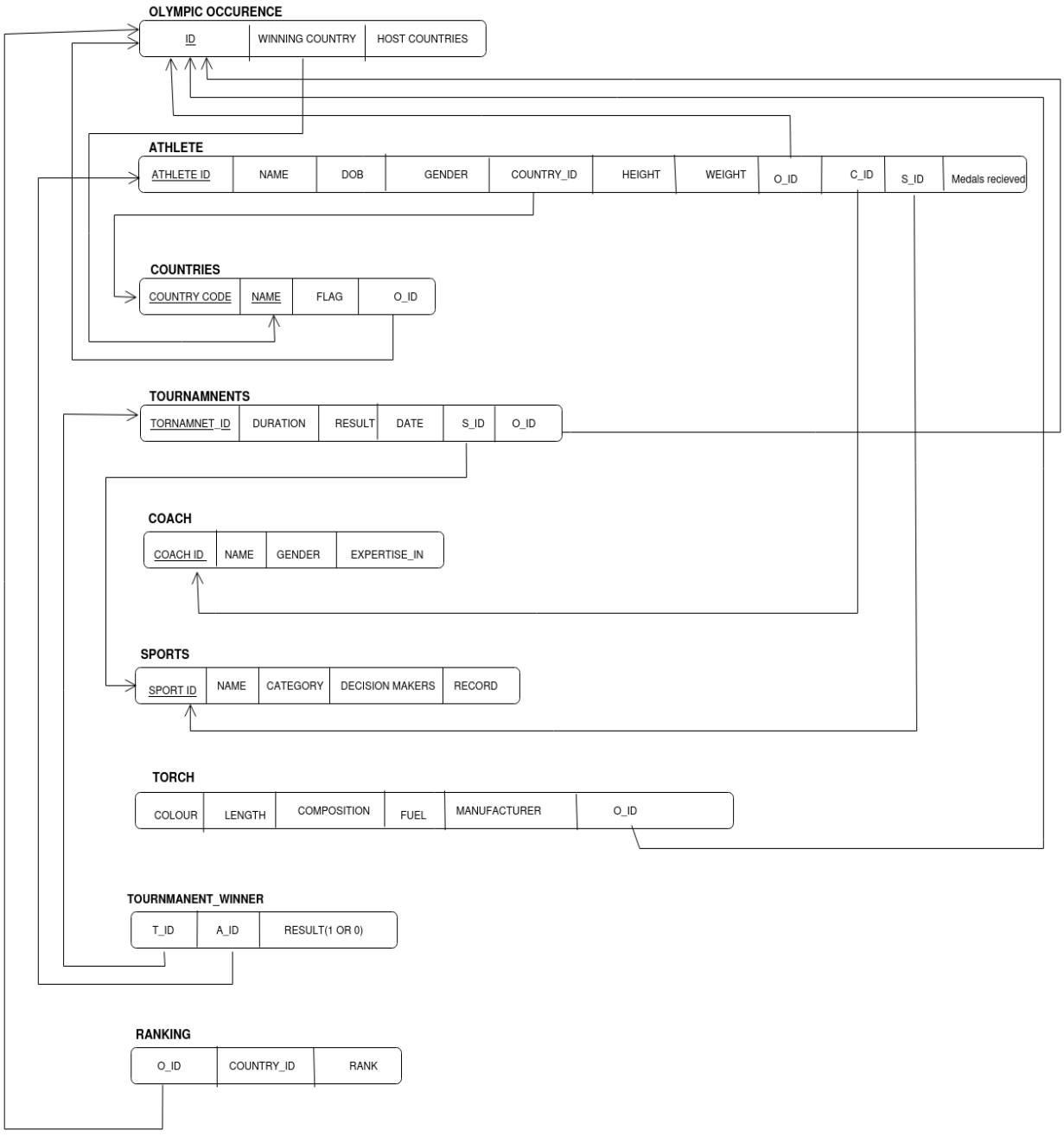
# Project Phase 3

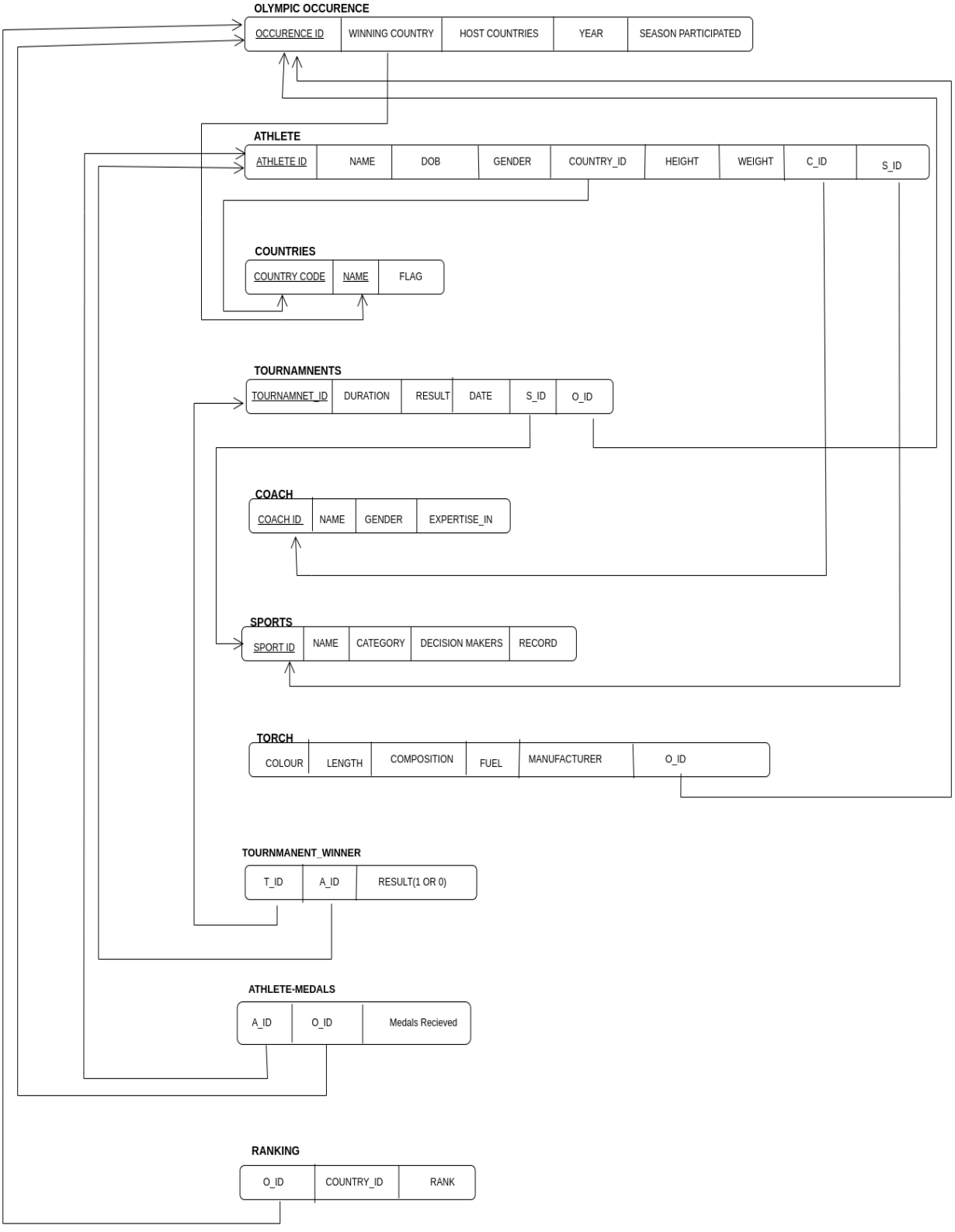
## Mapping ER to Relational Model:



For each strong entity type a relation is created that includes all its attributes and also some other attributes(foreign key) have been kept for establishing binary relationships.
Identifying relationships with weak entities through the foreign key referencing.
Tournament_winner relation table for information of athletes participating in a tournament(athlete_face_off).
The attributes of s_d and o_id in tournament relation for the matches relationships.
We have created a separate table for RANKING relation to include the attribute of the relation(RANK) in our relational database.

## CONVERTING TO FIRST NORMAL FORM:

In order to achieve First Normal Form (1NF),a new relation was added in order to remove the composite and multivalued attributes and hence only simple attributes were present everywhere. The composite attribute  occurrence_id in occurrence relation was further divided as year and season.
This restructuring ensures that each attribute in our database contains atomic values, eliminating any instances of multivalued attributes and adhering to the principles of 1NF.


OLYMPIC OCCURENCE
OCCURENCE ID
WINNING COUNTRY
HOST COUNTRIES
YEAR
SEASON PARTICIPATED
ATHLETE
ATHLETE ID
NAME
DOB
GENDER
COUNTRY_ID
HEIGHT
WEIGHT
C_ID
S_ID
COUNTRIES
COUNTRY CODE
NAME
FLAG
TOURNAMNENTS
TOURNAMNET_ID
DURATION
RESULT
DATE
S_ID
O_ID
COACH
COACH ID
NAME
GENDER
EXPERTISE_IN
SPORTS
SPORT ID
NAME
CATEGORY
DECISION MAKERS
RECORD
TORCH
COLOUR
LENGTH
COMPOSITION
FUEL
MANUFACTURER
O_ID
TOURNMANENT_WINNER
T_ID
A_ID
RESULT(1 OR 0)
ATHLETE-MEDALS
A_ID
O_ID
Medals Recieved
RANKING
O_ID
COUNTRY_ID
RANK

**CONVERTING TO SECOND NORMAL FORM AND THIRD NORMAL FORM:**

In the 1NF all attributes are fully dependent on the primary key. Therefore, no additional changes are needed for the move to Second Normal Form (2NF).
The relational schema satisfies the conditions of 2NF as there aren't any partial dependencies .
There are no transitive dependencies present, meaning that every non-prime attribute is directly dependent on the primary key.
So, the second and third normal forms are the same as the first normal form.