1A) This ERD represents data of a swim classes.

It consist of 6 entities namely level, pool, students, staff, classes & enrolment

And few attributes.

Level att. Is primary key in entity levels

Pool is pk in pool entity

staffID is pk in staff entity

Lessonindex in pk in classes entity

SID is pk in students entity.

Enrollment entity doesn't have any primary key making it an weak entity.

But foreign key SID in enrolment entity acts as primary key here.

2A) The relations ,cardinality & degree between these enties are

1: M (Between classes and enrolment entities)

1: M (Between classes and levels entities)

1: M (Between classes and staff entities)

1: M (Between classes and pool entities)

N: M (Between students and class entities)

1: M (Between students and enrolment entities)

Degree of class entity is ternary relationship i.e, 3 degree.

Degree of enrolment and student entity is binary relationship that's degree 2.

3A) In physical data model (ERD)

a. A pool may or may not ever have a class.
b. The levels table must always be associated with at least one class.
c. The staff table may not have ever taught a class.
d. All students must be enrolled in at least one class.
e. The class must have students enrolled in it.
f. The class must have a valid pool.
d. The class may not have an instructor assigned.
e. The class must always be associated with an existing level.

Have been satisfieid. PRESENTED IN pdm erd pdf .

4A) Enrollment entity is a weak entity as it has no primary key.

But consisting of SID from students entity which here is an foreign key also plays role of primary key making enrolment entity a strong entity.(Shown in PDF)

5A) Data redency do exist in this model where student ID , pool details , instructor , name , level & lessons are of same data at multiple places.

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