**Strong Entities**

**Student**:

* Student\_ID (artificial Key)
* Reason – The only natural key that may be feasible is ‘username’, however it is not clear whether it is unique (or if it can change), and it does not add any additional meaning.

**Parent**:

* Parent\_ID (artificial Key)
* Reason – No natural key exists.
  + - ‘parent email’ may not be unique (parents share email) and could also change.
    - Any combination of ‘parent first name’ + ‘parent last name’ + ‘parent email’ is not guaranteed to be unique.

**Class**:

* Class\_ID (artificial Key)
* Reason – No natural key exists that is suitable.
  + - ‘class story code’ is unique but can change (undesirable).
    - Any combination of ‘class name’ + ‘class grade’ + ‘class points’ is not guaranteed to be unique.

**Teacher**:

* Teacher\_ID (artificial Key)
* Reason – No natural key exists, ‘teacher last name’ may not be unique.

**Weak/Associative Entities**

**Student\_Parent**:

* Student\_ID, Parent\_ID (composite)
* Reason – Associate (Weak) entity bridging m:n of Students belonging to Parents

**Story**:

* Story\_ID (artificial Key)
* Reason – Associate (Weak) entity (Existence-dependent).
  + - No suitable natural key exists.
    - The only possible natural keys are ‘story create time’ and ‘story publish time’, however it is not ideal to use time data types as PKs.

**Story\_Like**:

* Story\_ID, Parent\_ID (composite)
* Reason – Associate (Weak) entity bridging m:n of Stories liked by Parents

**Class\_Teacher**:

* Class\_ID, Teacher\_ID (composite)
* Reason – Associate (Weak) entity bridging m:n of Classes taught by Teachers.

**Comment**:

* Class\_ID, Parent\_ID (composite)
* Reason – Associate (Weak) entity (ID-dependent).
  + - No suitable natural key exists.
    - The only possible natural key is ‘comment datetime’, however it is not ideal to use time data types as PKs.

**Student Enrollment**:

* Student\_ID, Class\_ID (composite)
* Reason – Associate (Weak) entity (ID-dependent).
  + - No suitable natural key exists.

**Skill**:

* Skill\_ID (artificial Key) 🡪 may lead to some negligible duplication.
* Reason – Associate (Weak) entity (Existence-dependent).
  + - No natural key exists that is suitable.
    - ‘skill name’ may not be unique.
    - Any combination of ‘skill name’ + ‘skill negpos’ + ‘skill weight’ is not guaranteed to be unique.
    - A skill is associated with only one class, but what if two different classes want to use an identical skill? Only an artificial key can be used in this scenario.

**Feedback**:

* Feedback\_ID (artificial)
* Reason – Associate (Weak) entity (Existence-dependent).
  + - No suitable natural key exists.
    - The only possible natural key is ‘feedback datetime’, however it is not ideal to use time data types as PKs.

**Student\_Story**:

* Story\_ID
* Reason – Inherits PK as subtype of supertype Story.

**Class\_Story**:

* Story\_ID
* Reason – Inherits PK as subtype of supertype Story.