**Fram work for normalization**

**Fitst Normalization :** Attirutes must be atomic ( a column should have only one value). No repeating entities.

**Second Normalazation :**  All prime attributes should be fully functional dependent an any composite key

**Third Normalization :**  non prime attribute shouldn’t determined by nan prime attribute, no relationship between nan prime attributes:

**Person table;**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Person\_id(PK) | FirstName | LastName | Adress | E\_mail |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
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|  |  |  |  |  |
|  |  |  |  |  |

1st Normalaization :

2nd Normalaization :

3rd Normalaization :

**Student table**

|  |  |
| --- | --- |
| Person\_id(PK) | Student\_id(FK) |
|  |  |
|  |  |
|  |  |
|  |  |

1st Normalaization:

2nd Normalaization:

3rd Normalaization:

**Employee table**

|  |  |  |  |
| --- | --- | --- | --- |
| Employee\_id(PK) | type | Person\_id(FK) | Course\_id(FK) |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1st Normalaization:

2nd Normalaization:

3rd Normalaization:

**Internal Employee table**

|  |  |
| --- | --- |
| Employee\_id(PK) | type |
|  |  |
|  |  |

1st Normalaization:

2nd t Normalaization:

3rd Normalaization:

**External employee**

|  |  |
| --- | --- |
| Employee\_id(pk) | type |
|  |  |
|  |  |

1st Normalaization

2nd Normalaization

3rd Normalaization

**Course table**

|  |  |
| --- | --- |
| Course\_id(PK) | Registration\_num(FK) |
|  |  |
|  |  |
|  |  |
|  |  |

1st Normalaization:

2nd Normalaization

3rd Normalaization

**Registration table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Registration\_num(PK) | Time | Year(FK) | Semester(FK) | Student\_id(KF) |
|  |  |  |  |  |
|  |  |  |  |  |

1st Normalaization

2nd Normalaization

3rd Normalaization

**Division table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Course \_id(FK ) | St.time(FK) | Date (FK) | Name | descrition |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

1st Normalaizatio

2nd Normalaization

3rd Normalaization

**Grade table**

|  |  |  |
| --- | --- | --- |
| Semester(FK) | Year(FK) | grade |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1st Normalaization

2nd Normalaization

3rd Normalaization

**Lesson table:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Course\_id(FK) | Date(FK) | St.time(FK) | Duration | capacity |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

1st Normalaization

2nd Normalaization

3rd Normalaization

**Building table**

|  |  |  |  |
| --- | --- | --- | --- |
| Building\_name(PK) | Course\_id(FK) | Date(FK) | St.time(FK) |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1st Normalaization

2nd Normalaization

3rd Normalaization

**Location:**

|  |  |  |
| --- | --- | --- |
| Room\_number(PK) | Building\_name(fk) | range |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1st Normalaization

2nd Normalaization

3rd Normalaization