

# Database Systems HW1

Team 4: Mustafa Farhan

## Q1. Normalization

### 1NF:

ExtracurricularActivites(Activity, ActivityType, ActivityTimings, ActivityLead, ActivityJoiningDate, ActivityLevel)  
StudentInfo(StudentID, StudentName, DOB, Year, GuardianID, GuardianName, GuardianContact, Activity, ActivityJoinDate)

### Dependencies:

- Full:

{StudentID, Activity} -> {~~ActivityTiming~~, ActivityLead, ActivityJoiningDate, ActivityLevel}

- Partial:

{StudentID} -> {StudentName, DOB, Year}

{Activity} -> {ActivityType}

- Transitive:

{StudentID} -> {GuardianID} -> {GuardianName, GuardianContact}

### 2NF:

ActivityParticipants(StudentID (FK), Activity (FK), ActivityJoiningDate) **And also ActivityLevel**  
ActivityInfo(Activity, ActivityType, ~~ActivityLead, ActivityTimings, ActivityLevel~~)  
StudentInfo(StudentID, StudentName, DOB, Year, GuardianID, GuardianName, GuardianContact, ~~Activity, ActivityJoinDate~~)

Reason: For activity participants, join date will depend on both studentid and activity

### 3NF:

StudentInfo(StudentID, StudentName, DOB, Year, GuardianID (FK))  
ActivityDetails(Activity, ActivityType, ~~ActivityLevel~~)  
ActivityTimings(Activity, ActivityTiming, ActivityLead)  
ActivityParticipation(StudentID (FK), Activity (FK), ActivityJoinDate) **ActivityLevel**  
GuardianInfo(GuardianID, GuardianName, GuardianContact)  
**StudentExtracurricular(StudentID (PK), Activity (PK), ActivityTimings (PK))**

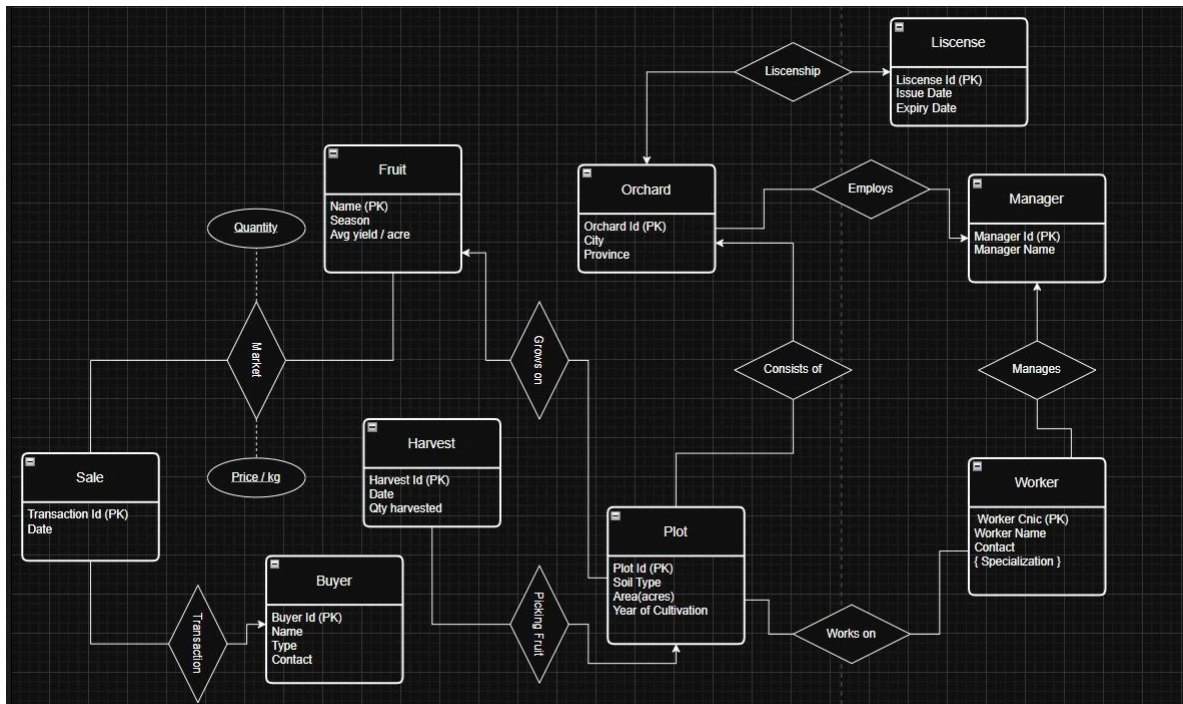
Reason:

StudentInfo -> It'll all depend on StudentID

ActivityParticipation -> Same reason as in 2NF

ActivityDetails -> Activity itself will determine the type and level

## Q2. Orchard ERD:



### Q3. Khaadi ERD:

