University Relational Model

**University: The data for university table will come from many sources such as from different sections that come under university itself Including Events, Dining, Housing, Students, Courses, and Classes. These different departments are bound to generate the weekly reports that can be used gather relevant information about university activities.**

**For University table data will primarily come from core enterprise system.**

| **University** | | | | |
| --- | --- | --- | --- | --- |
| **U\_ID** | **UNAME** | **UADDRESS** | **UZIPCODE** | **URANKING** |
| 1 | Illinois Institute of technology | 3241 S Wabash Ave | 60616 | 108 |
| 2 | Cal Tech | 21ST Street Drive | 10120 | 50 |
| 3 | Purdue | Kilbourne Ave | 34980 | 20 |
| 4 | Harvard | Cambridge, Massachusetts | 34016 | 1 |

**University = {U\_ID(PK)}**

| **Class** | | | | |
| --- | --- | --- | --- | --- |
| **Class\_ID** | **ClassName** | **CostPerCerdit** | **NumberOfCredits** | **Description** |
| A234 | OOP | $1,615.00 | 3 | Programming |
| A342 | HCI | $1,516.00 | 3 | Design |
| A456 | Psychology | $1,614.00 | 3 | Cognitive Ethics |
| A678 | DBMS | $1,624.00 | 3 | Database |

**Class= {Class\_ID(PK)}**

**Class table consist of the required information related to classes. Where as the Course\_ID can be considered as a Natural Key. It is showing the exact logical relevance to the business world concept CourseID, Faculty\_ID and Class\_ID are the surrogate keys.**

| **Course** | | |
| --- | --- | --- |
| **Course\_ID** | **Faculty\_ID** | **Class\_ID** |
| ITMD123 | 2334 | 1616 |
| ITMD124 | 2333 | 1618 |
| ITMD125 | 2335 | 1617 |
| ITMD126 | 2338 | 1619 |

**Course ={Course\_ID(PK), Faculty\_ID(FK), Class\_ID(FK)}**

**Consider the course where Course\_ID is the Primary key and other two are foreign keys.**

**For Courses data will come from Enterprise Core system and People Systems. As it is connected to two different tables Faculty and Class.**

**For all the following tables the primary key is denoted by Symbol PK and foreign key by FK.**

| **Dining** | | | |
| --- | --- | --- | --- |
| **Dining\_ID** | **MealPlan** | **Cost** | **Benefits** |
| A314 | Block-50 | $899.00 | FreeBonusPoints |
| A316 | Flex-150 | $1,200.00 | BonusPointsandmealexchnage |
| A317 | HawjUnlimited | $2,500.00 | AllInOneDining |
| A318 | FLEX-250 | $3,990.00 | AllAccess |

**Dining = {Dining\_ID(PK)}**

| **Event** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Event\_ID** | **EventName** | **Venue** | **Descrption** | **Numberofseats** | **CostPerTicket** |
| E7531 | Lasvarbos | OnCampus | Musical | 100 | $5.00 |
| E5672 | TechFair | Burlington | Career | 50 | $10.00 |
| E7812 | StockExchange | OnCampus | Fianance | 20 | $22.00 |
| E8190 | FamilyGathering | OnCampus | Lesuire | 200 | $0.00 |

**Event = {Event\_ID(PK)}**

| **Faculty** | | | | |
| --- | --- | --- | --- | --- |
| **Faculty\_ID** | **FNAME** | **LNAME** | **Expertise** | **Salary** |
| 2334 | James | Papademas | OOP | $5,000.00 |
| 2333 | Luke | Smith | SQL | $25,000.00 |
| 2335 | Adarsh | Arora | BI | $10,000.00 |
| 2338 | Brian | Vanderjack | ProjectManagement | $8,000.00 |

**Faculty = {Faculty\_ID(PK)}**

| **Housing** | | | |
| --- | --- | --- | --- |
| **Housing\_ID** | **Room\_Type** | **Duration** | **Cost** |
| T1236 | stud | FALL-SUMMER | 1615 |
| T1237 | 1BHK | FALL-FALL | 2500 |
| T1238 | 3BHK | FALL-FALL | 4500 |
| T1239 | stud | FALL-FALL | 1615 |

**Housing = {Housing\_ID(PK)}**

| **Operations** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **O\_ID** | **U\_ID** | **Dining\_ID** | **Event\_ID** | **Class\_ID** | **Housing\_ID** |
| 3211 | 1 | A314 | E7531 | A234 | T1236 |
| 3212 | 2 | A316 | E5672 | A342 | T1237 |
| 3213 | 3 | A317 | E7812 | A456 | T1238 |
| 3214 | 4 | A318 | E8190 | A678 | T1239 |

**Operations ={O\_ID(PK),U\_ID(FK),Dining\_ID(FK),Event\_ID(FK),Class\_ID(FK),Housing\_ID(FK)}**

| **Student** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Studnet\_ID** | **FNAME** | **LNAME** | **Address** | **Course\_ID** | **Event\_ID** |
| 24 | Brian | Smith | 3241S Wabash Ave | ITMD123 | E5672 |
| 25 | Corey | Palmer | 33rd webers street | ITMD124 | E8190 |
| 26 | Jack | Romenov | 32nd State Street | ITMD126 | E7531 |
| 17 | Grace | Milos | 51st State Street | ITMD124 | E5672 |

**Students = {Student\_ID(PK),Course\_ID(FK),Event\_ID(FK)}**

**In the Students table, Student\_ID can be considered as a Natural key as it is relevant to the business logic where in real world application University Students has Student ID to define individual identity.**

**Data Relationship Model**

**Following Relational Model is including relationship between all the entites that comes under University Structure.**

**Diagram

Description automatically generated**