Entity Relationship Diagram (ERD) — Student Payment Management System (Updated)

## users

|  |  |  |
| --- | --- | --- |
| Field | Type | Notes |
| user\_id | INT (PK) | Auto-increment |
| email | VARCHAR | Unique |
| password | VARCHAR | Hashed |
| role | ENUM('admin','cashier','student') | User type |
| security\_question | VARCHAR |  |
| security\_answer | VARCHAR | Hashed |

## students

|  |  |  |
| --- | --- | --- |
| Field | Type | Notes |
| student\_id | VARCHAR (PK) | Custom formatted |
| user\_id | INT (FK) | Link → users |
| full\_name | VARCHAR |  |
| program\_id | INT (FK) | Link → programs |
| section | VARCHAR |  |
| year\_level | INT | 1‑4 |

## programs

|  |  |  |
| --- | --- | --- |
| Field | Type | Notes |
| program\_id | INT (PK) |  |
| program\_name | VARCHAR | e.g., BSIT |
| code | VARCHAR | Optional |
| year\_levels | INT | Max year level |

## tuition\_matrix

|  |  |  |
| --- | --- | --- |
| Field | Type | Notes |
| tuition\_id | INT (PK) |  |
| program\_id | INT (FK) |  |
| year\_level | INT |  |
| amount | DECIMAL |  |

## books\_library

|  |  |  |
| --- | --- | --- |
| Field | Type | Notes |
| book\_id | INT (PK) |  |
| title | VARCHAR |  |
| price | DECIMAL |  |

## uniforms\_library

|  |  |  |
| --- | --- | --- |
| Field | Type | Notes |
| uniform\_id | INT (PK) |  |
| name | VARCHAR |  |
| size | ENUM('XS','S','M','L','XL') |  |
| price | DECIMAL |  |
| program\_id | INT (FK, nullable) | If program‑specific |

## other\_fees\_library

|  |  |  |
| --- | --- | --- |
| Field | Type | Notes |
| fee\_id | INT (PK) |  |
| name | VARCHAR |  |
| amount | DECIMAL |  |
| program\_id | INT (FK, nullable) |  |
| year\_level | INT (nullable) |  |

## student\_fees

|  |  |  |
| --- | --- | --- |
| Field | Type | Notes |
| student\_fee\_id | INT (PK) |  |
| student\_id | VARCHAR (FK) |  |
| category | ENUM('tuition','book','uniform','other') |  |
| ref\_id | INT | Pointer to library / tuition row |
| original\_amount | DECIMAL |  |
| remaining\_balance | DECIMAL |  |
| status | ENUM('unpaid','partial','paid') |  |

## transactions

|  |  |  |
| --- | --- | --- |
| Field | Type | Notes |
| transaction\_id | INT (PK) |  |
| student\_fee\_id | INT (FK) |  |
| student\_id | VARCHAR (FK) |  |
| cashier\_id | INT (FK users) |  |
| amount\_paid | DECIMAL |  |
| payment\_date | DATETIME |  |
| remarks | TEXT | Optional |

## audit\_log

|  |  |  |
| --- | --- | --- |
| Field | Type | Notes |
| log\_id | INT (PK) |  |
| user\_id | INT (FK users) | Actor |
| action | VARCHAR | e.g., CREATE\_FEE, RESET\_PASSWORD |
| details | TEXT | Optional JSON / description |
| log\_time | DATETIME | Timestamp |

## Relationship Summary

• users 1 ↔ 1 students  
• programs 1 ↔ N students / tuition\_matrix / uniforms\_library / other\_fees\_library  
• students 1 ↔ N student\_fees  
• student\_fees 1 ↔ N transactions  
• users (cashier) 1 ↔ N transactions  
• users 1 ↔ N audit\_log