**BUILDINGS (building\_code**, name, address, year\_built)

**ROOMS(room\_code**, *building\_code*, room\_type, capacity, base\_monthly\_rent)

**STUDENTS(**student\_id, family\_name, given\_name, dob, gender, nationality, course, email phone scholarship\_flag CHAR(1) **DEFAULT 'N' NOT NULL** (Y/N)

* scholarship\_name VARCHAR2(120)
* sponsor\_agency VARCHAR2(120)

**Constraints**

* **PK**: student\_id
* **UK**: email
* **CHECK**: gender IN ('M','F','O')
* **CHECK**: scholarship\_flag IN ('Y','N')
* **NN**: family\_name, given\_name, dob, scholarship\_flag

**APPLICATIONS**

**Columns**

* application\_id VARCHAR2(30) **NOT NULL**
* student\_id VARCHAR2(20) **NOT NULL**
* application\_date DATE **NOT NULL**
* intended\_start DATE **NOT NULL**
* intended\_end DATE **NOT NULL**
* status VARCHAR2(12) **NOT NULL** (Pending/Approved/Rejected/Cancelled/Completed)
* pref1\_building VARCHAR2(10)
* pref1\_type VARCHAR2(20)
* pref2\_building VARCHAR2(10)
* pref2\_type VARCHAR2(20)

**Constraints**

* **PK**: application\_id
* **FK**: student\_id → STUDENTS(student\_id)
* **FK**: pref1\_building → BUILDINGS(building\_code)
* **FK**: pref2\_building → BUILDINGS(building\_code)
* **CHECK**: status IN ('Pending','Approved','Rejected','Cancelled','Completed')
* **NN**: student\_id, application\_date, intended\_start, intended\_end, status

**CONTRACTS**

**Columns**

* contract\_no VARCHAR2(30) **NOT NULL**
* application\_id VARCHAR2(30) **NOT NULL**
* room\_code VARCHAR2(20) **NOT NULL**
* deposit\_amount NUMBER(10,2) **NOT NULL**
* issue\_date DATE **NOT NULL**
* status VARCHAR2(12) **NOT NULL** (Active/Cancelled/Completed)
* cancellation\_reason VARCHAR2(200)
* start\_date DATE **NOT NULL**
* end\_date DATE **NOT NULL**

**Constraints**

* **PK**: contract\_no
* **UK**: application\_id *(1–to–1 with APPLICATIONS)*
* **FK**: application\_id → APPLICATIONS(application\_id)
* **FK**: room\_code → ROOMS(room\_code)
* **CHECK**: deposit\_amount ≥ 0
* **CHECK**: status IN ('Active','Cancelled','Completed')
* **CHECK**: end\_date > start\_date
* **NN**: room\_code, deposit\_amount, issue\_date, status, start\_date, end\_date

**PAYMENTS**

**Columns**

* payment\_id VARCHAR2(30) **NOT NULL**
* contract\_no VARCHAR2(30) **NOT NULL**
* payment\_date DATE **NOT NULL**
* amount NUMBER(10,2) **NOT NULL**
* method VARCHAR2(12) **NOT NULL** (Card/Transfer/Cash)
* receipt\_no VARCHAR2(40)

**Constraints**

* **PK**: payment\_id
* **UK**: receipt\_no
* **FK**: contract\_no → CONTRACTS(contract\_no)
* **CHECK**: amount ≥ 0
* **CHECK**: method IN ('Card','Transfer','Cash')
* **NN**: contract\_no, payment\_date, amount, method

**STAFF**

**Columns**

* staff\_id VARCHAR2(20) **NOT NULL**
* full\_name VARCHAR2(120) **NOT NULL**
* role VARCHAR2(20) **NOT NULL** (Manager/HousingOfficer/Maintenance)
* phone VARCHAR2(30)
* email VARCHAR2(120)

**Constraints**

* **PK**: staff\_id
* **UK**: email
* **CHECK**: role IN ('Manager','HousingOfficer','Maintenance')
* **NN**: full\_name, role

**MAINTENANCE\_REQUESTS**

**Columns**

* request\_id VARCHAR2(30) **NOT NULL**
* reported\_by\_type VARCHAR2(10) **NOT NULL** (Student/Staff)
* reported\_by\_id VARCHAR2(20) **NOT NULL**
* reported\_datetime TIMESTAMP **NOT NULL**
* issue\_category VARCHAR2(30) **NOT NULL**
* priority VARCHAR2(10) **NOT NULL** (Low/Medium/High)
* building\_code VARCHAR2(10) **NOT NULL**
* room\_code VARCHAR2(20) *(nullable)*
* affects\_multiple CHAR(1) **DEFAULT 'N' NOT NULL** (Y/N)

**Constraints**

* **PK**: request\_id
* **FK**: building\_code → BUILDINGS(building\_code)
* **FK**: room\_code → ROOMS(room\_code)
* **CHECK**: reported\_by\_type IN ('Student','Staff')
* **CHECK**: priority IN ('Low','Medium','High')
* **CHECK**: affects\_multiple IN ('Y','N')
* **NN**: reported\_by\_type, reported\_by\_id, reported\_datetime, issue\_category, priority, building\_code, affects\_multiple

**MAINTENANCE\_WORK\_ITEMS**

**Columns**

* request\_id VARCHAR2(30) **NOT NULL**
* work\_item\_no NUMBER(6) **NOT NULL**
* description VARCHAR2(200) **NOT NULL**
* assigned\_staff\_id VARCHAR2(20)
* start\_datetime TIMESTAMP
* end\_datetime TIMESTAMP
* materials\_used VARCHAR2(200)
* completion\_flag CHAR(1) **DEFAULT 'N' NOT NULL** (Y/N)

**Constraints**

* **PK**: (request\_id, work\_item\_no)
* **FK**: request\_id → MAINTENANCE\_REQUESTS(request\_id)
* **FK**: assigned\_staff\_id → STAFF(staff\_id)
* **CHECK**: completion\_flag IN ('Y','N')
* **CHECK**: if both times provided then end\_datetime >= start\_datetime
* **NN**: request\_id, work\_item\_no, description, completion\_flag