**1. Users**

* user\_id NUMBER PRIMARY KEY
* first\_name VARCHAR2(50)
* last\_name VARCHAR2(50)
* email VARCHAR2(100) UNIQUE
* password VARCHAR2(100)
* role VARCHAR2(20) CHECK (role IN ('Student', 'Course Instructor'))
* university\_id NUMBER REFERENCES Universities(university\_id)
* department\_id NUMBER REFERENCES Departments(department\_id)
* program VARCHAR2(50)
* semester NUMBER(2)
* profile\_complete CHAR(1) CHECK (profile\_complete IN ('Y', 'N'))
* date\_joined DATE
* age NUMBER(3)
* address VARCHAR2(150)

**2. Universities**

* university\_id NUMBER PRIMARY KEY
* university\_name VARCHAR2(100)
* campus\_location VARCHAR2(100)

**3. Departments**

* department\_id NUMBER PRIMARY KEY
* department\_name VARCHAR2(100)

**4. Documents**

* document\_id NUMBER PRIMARY KEY
* title VARCHAR2(100)
* description CLOB
* uploaded\_by NUMBER REFERENCES Users(user\_id)
* is\_free CHAR(1) CHECK (is\_free IN ('Y', 'N'))
* price NUMBER(10, 2)
* upload\_date DATE
* file\_path VARCHAR2(255)
* file\_encryption\_key VARCHAR2(100)

**5. Document\_Info**

* info\_id NUMBER PRIMARY KEY
* document\_id NUMBER REFERENCES Documents(document\_id)
* course\_id NUMBER REFERENCES Courses(course\_id)
* additional\_tags VARCHAR2(255)
* upload\_date DATE

**6. Courses**

* course\_id NUMBER PRIMARY KEY
* course\_name VARCHAR2(100)
* course\_code VARCHAR2(20)
* department\_id NUMBER REFERENCES Departments(department\_id)
* instructor\_name VARCHAR2(100)
* semester NUMBER(2)
* academic\_year VARCHAR2(9) -- e.g., "2024-2025"

**7. Document\_Tags**

* document\_tag\_id NUMBER PRIMARY KEY
* document\_id NUMBER REFERENCES Documents(document\_id)
* tag VARCHAR2(50)

**8. File\_Access\_Keys**

* access\_key\_id NUMBER PRIMARY KEY
* document\_id NUMBER REFERENCES Documents(document\_id)
* encryption\_key VARCHAR2(100)
* is\_used CHAR(1) CHECK (is\_used IN ('Y', 'N'))
* created\_date DATE
* used\_date DATE

**9. Document\_Stats**

* stat\_id NUMBER PRIMARY KEY
* document\_id NUMBER REFERENCES Documents(document\_id)
* views NUMBER
* purchases NUMBER

**10. Transactions**

* transaction\_id NUMBER PRIMARY KEY
* user\_id NUMBER REFERENCES Users(user\_id)
* document\_id NUMBER REFERENCES Documents(document\_id)
* transaction\_date DATE
* amount NUMBER(10, 2)
* transaction\_type VARCHAR2(20) CHECK (transaction\_type IN ('Deposit', 'Withdraw', 'Purchase', 'Loan'))
* balance\_after\_transaction NUMBER(15, 2)

**11. Wallet**

* wallet\_id NUMBER PRIMARY KEY
* user\_id NUMBER REFERENCES Users(user\_id)
* balance NUMBER(15, 2)

**12. Loans**

* loan\_id NUMBER PRIMARY KEY
* user\_id NUMBER REFERENCES Users(user\_id)
* amount NUMBER(10, 2)
* status VARCHAR2(20) CHECK (status IN ('Pending', 'Approved', 'Rejected'))
* request\_date DATE
* approval\_date DATE
* repayment\_date DATE

**13. Profile**

* profile\_id NUMBER PRIMARY KEY
* user\_id NUMBER REFERENCES Users(user\_id)
* bio CLOB
* picture\_path VARCHAR2(255)
* contact\_number VARCHAR2(20)

**14. Discussions**

* discussion\_id NUMBER PRIMARY KEY
* title VARCHAR2(100)
* description CLOB
* created\_by NUMBER REFERENCES Users(user\_id)
* created\_date DATE
* tag VARCHAR2(50)

**15. Discussion\_Comments**

* comment\_id NUMBER PRIMARY KEY
* discussion\_id NUMBER REFERENCES Discussions(discussion\_id)
* user\_id NUMBER REFERENCES Users(user\_id)
* comment\_text CLOB
* comment\_date DATE

**16. Notifications**

* notification\_id NUMBER PRIMARY KEY
* user\_id NUMBER REFERENCES Users(user\_id)
* document\_id NUMBER REFERENCES Documents(document\_id)
* message VARCHAR2(255)
* is\_read CHAR(1) CHECK (is\_read IN ('Y', 'N'))
* created\_date DATE

**17. User\_Actions\_Log**

* log\_id NUMBER PRIMARY KEY
* user\_id NUMBER REFERENCES Users(user\_id)
* action\_type VARCHAR2(20) CHECK (action\_type IN ('Login', 'Upload', 'Download'))
* action\_timestamp DATE