Validation report

To validate the database implementation, a subset of tables was tested using SQL INSERT operations.

First, valid records were inserted into the tables person, sensitive_person_data, student, program, class, course, enrollment and program_course. All valid inserts succeeded, demonstrating that the schema supports correct data entry and referential.

```
yrkco_db=# INSERT INTO person (first_name, last_name, email)
VALUES ('Anna', 'Svensson', 'anna.svensson@example.com');

INSERT INTO sensitive_person_data (person_id, personal_number)
VALUES (1, '19900101-1234');

INSERT INTO student (person_id)
VALUES (1);

INSERT INTO program (program_name, description)
VALUES ('Data Engineering', 'Learn data pipelines');

INSERT INTO class (start_year, program_id)
VALUES (2025, 1);

INSERT INTO course (course_name, course_code, credits)
VALUES ('SQL Basics', 'SQL101', 10);

INSERT INTO enrollment (student_id, class_id)
VALUES (1, 1);

VALUES (1, 1);ogram_course (program_id, course_id)
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
```

Invalid inserts

Invalid inserts were tested to to ensure constraints were enforced:

A duplicate email address was inserted into the table to test the UNIQUE constraints. A course with negative credits was also inserted to check constraints enforcing positive credits. An enrollment referencing a non-existing student ID was inserted which failed due to the fo reign key constraint on student_id.

```
yrkco_db=# INSERT INTO person (first_name, last_name, email)
VALUES ('Erik', 'Karlsson', 'anna.svensson@example.com');
ERROR:  duplicate key value violates unique constraint "person_email_key"
DETAIL:  Key (email)=(anna.svensson@example.com) already exists.
yrkco_db=# INSERT INTO enrollment (student_id, class_id)
VALUES (999, 1);
ERROR:  insert or update on table "enrollment" violates foreign key constraint "enrollment_student_id_fkey"
DETAIL:  Key (student_id)=(999) is not present in table "student".
yrkco_db=# INSERT INTO course (course_name, course_code, credits)
VALUES ('Bad Course', 'BAD101', -5);
ERROR:  new row for relation "course" violates check constraint "course_credits_check"
DETAIL:  Failing row contains (2, Bad Course, BAD101, -5, null, f).
yrkco_db=#
```