

Software Test Report

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# Overview

This document is the Software Test Report of the testing phase of the MedicalPractice Database software development project.

The purpose of the tests was to validate that the database schema created in Task 1 correctly implements all requirements from the data model, including primary keys, foreign keys, alternate keys, and check constraints. Testing ensures that valid data is accepted, and invalid data is rejected, demonstrating the robustness of the schema.

# Testing phases

## Planning

Plan the testing by completing the table below.

Table 1 – Test plan

|  |  |  |  |
| --- | --- | --- | --- |
| Test ID | Test name | Summary | Expected result |
| T1 | Valid Patient Insert | Insert a patient record with all required fields and valid gender value | Row inserted successfully |
| T2 | Invalid Gender Constraint | Insert a patient record with Gender = 'unknown' | Insert fails with CK\_Patient\_Gender violation |
| T3 | Unique Practitioner MRN | Insert two practitioners with the same MedicalRegistrationNumber | Second insert fails with UQ\_Practitioner\_MRN violation |
| T4 | Valid Weekdays, Availability and Appointment Insert | Insert Weekdays, Availability and Insert Appointment with existing patient and practitioner | Row inserted successfully |
| T5 | Invalid Appointment FK | Insert appointment with non‑existent patient ID | Insert fails with FK\_Appointment\_Patient violation |
| T6 | Verify Tables and Keys | Query sys.tables and sys.objects | All required tables and constraints are listed |

## Method

* **When:** Tests were run on 16 November 2025.
* **Who:** Conducted by Amir Sharabiani.
* **Platform:** Microsoft SQL Server Management Studio 22 (SSMS) connected to SQL Server LocalDB.
* **Version:** SQL Server 22.0 (2025 release) (LocalDB).
* **Approach:** Executed Task 2 script after creating schema in Task 1. Captured both successful and failed inserts to validate constraints.

## Results

Complete the table below with the test results. Include the Test ID (as listed in the Test planning), the actual results from the testing, screenshots of the testing and any relevant comments or information (where required), and the outcome of the test (did it pass or fail?).

\*Note: Screenshots provided in Table2\_TestResults\_ScreenShots.docx file due to not fitting properly in the below table. The file is attached in each row of the table below and also been provided in the .\Part1\Task3 folder.  
This file also includes the results for running the scripts for task 1 and task 4 at the end of it.

Table 2 – Test results

|  |  |  |  |
| --- | --- | --- | --- |
| Test ID | Test results | Screenshots / comments (to paste in report) | Test outcome |
| T1 | Patient inserted successfully (1 row affected) |  | Pass |
| T2 | Insert failed: Msg 547… conflicted with CHECK constraint CK\_Patient\_Gender |  | Pass (constraint enforced) |
| T3 | Second practitioner insert failed: Msg 2627… UNIQUE KEY constraint |  | Pass |
| T4 | Weekdays, Availability and Appointment inserted successfully (3 \* 1 row affected) |  | Pass |
| T5 | Insert failed: Msg 547… FOREIGN KEY constraint FK\_Appointment\_Patient |  | Pass |
| T6 | sys.tables shows all 6 tables; sys.objects lists PK, FK, UQ, CK |  | Pass |

## Analysis and conclusions

* All constraints behaved as expected: valid data was accepted; invalid data was rejected.
* Errors encountered (gender domain violation, duplicate MRN, invalid FK) confirm that the schema enforces business rules correctly.
* The schema meets the specifications of the data model:
  + Primary keys uniquely identify records.
  + Foreign keys enforce referential integrity.
  + Alternate keys prevent duplicate values where required.
  + Check constraints enforce domain rules (gender, state length, postcode length, weekday values).
* Overall, the database design is robust and aligns with the assessment requirements.

Table 3 – Software evaluation

|  |  |
| --- | --- |
| Software specification | Evaluation |
| Tables created as per data model | All six tables created successfully |
| Primary and foreign keys implemented | Verified in sys.objects |
| Alternate keys enforced | Practitioner MRN and Appointment patient/date/time tested successfully |
| Check constraints enforced | Gender, state, postcode, weekday constraints tested and working |
| Schema supports valid inserts and rejects invalid | Demonstrated through positive and negative test cases |

# Software approval

Software is approved for installation by:

Name

Role

Database Developer

Signature Date