

\*\*\*\*\* Test Case 1 \*\*\*\*\*

Case: Insert subject with S\_TYPE = W

Title: Insert subject

SQL: INSERT INTO SUBJECT (S\_ID, FK\_ST\_NAME, S\_NAME, S\_SEMESTER, S\_STUPO\_HOURS, S\_NOTES, S\_TYPE)  
SELECT 1768531749, ST\_NAME, 'Test Subject W', 1, 1.00, 'Test insert', 'W' FROM STUDY\_PROGRAM FETCH  
FIRST 1 ROW ONLY

Result: ok

Detail: affected\_rows=1

Title: Verify subject 1768531749

SQL: SELECT \* FROM SUBJECT WHERE S\_ID = 1768531749

Result: ok

Rows (first 10):

{'S\_ID': 1768531749, 'S\_NAME': 'Test Subject W', 'S\_STUPO\_HOURS': '1.00', 'S\_SEMESTER': 1,  
'FK\_ST\_NAME': 'AN', 'S\_NOTES': 'Test insert', 'S\_TYPE': 'W'}

\*\*\*\*\* End of Test Case 1 \*\*\*\*\*

\*\*\*\*\* Test Case 2 \*\*\*\*\*

Case: Insert lecturer

Title: Insert teacher for lecturer

SQL: INSERT INTO TEACHER (T\_ID, T\_NAME, T\_LASTNAME, FK\_D\_NAME, FK\_ZIP, T\_NOTES, T\_IS\_ACTIVE)  
VALUES (1768531749, 'Test', 'Lecturer', NULL, NULL, 'Test insert', 1)

Result: ok

Detail: affected\_rows=1

Title: Insert lecturer

SQL: INSERT INTO LECTURER (T\_ID, L\_STREET\_ADDRESS) VALUES (1768531749, 'Test Street 1')

Result: ok

Detail: affected\_rows=1

Title: Verify lecturer 1768531749

SQL: SELECT \* FROM LECTURER WHERE T\_ID = 1768531749

Result: ok

Rows (first 10):

{'T\_ID': 1768531749, 'L\_STREET\_ADDRESS': 'Test Street 1', 'L\_SUPERVISOR': None}

\*\*\*\*\* End of Test Case 2 \*\*\*\*\*

\*\*\*\*\* Test Case 3 \*\*\*\*\*

Case: Deactivate lecturer

Title: Insert teacher for lecturer

SQL: INSERT INTO TEACHER (T\_ID, T\_NAME, T\_LASTNAME, FK\_D\_NAME, FK\_ZIP, T\_NOTES, T\_IS\_ACTIVE)  
VALUES (1768531749, 'Test', 'Lecturer', NULL, NULL, 'Test insert', 1)

Result: ok

Detail: affected\_rows=1

Title: Insert lecturer

SQL: INSERT INTO LECTURER (T\_ID, L\_STREET\_ADDRESS) VALUES (1768531749, 'Test Street 2')

Result: ok

Detail: affected\_rows=1

Title: Deactivate lecturer

SQL: UPDATE TEACHER SET T\_IS\_ACTIVE = 0 WHERE T\_ID = 1768531749

Result: ok

Detail: affected\_rows=1

Title: Verify lecturer inactive 1768531749

SQL: SELECT T\_ID, T\_IS\_ACTIVE FROM TEACHER WHERE T\_ID = 1768531749

Result: ok

Rows (first 10):

{'T\_ID': 1768531749, 'T\_IS\_ACTIVE': 0}

\*\*\*\*\* End of Test Case 3 \*\*\*\*\*

\*\*\*\*\* Test Case 4 \*\*\*\*\*

Case: Deactivate professor

Title: Insert teacher for professor

SQL: INSERT INTO TEACHER (T\_ID, T\_NAME, T\_LASTNAME, FK\_D\_NAME, FK\_ZIP, T\_NOTES, T\_IS\_ACTIVE)  
VALUES (1768531749, 'Test', 'Professor', NULL, NULL, 'Test insert', 1)

Result: ok

Detail: affected\_rows=1

Title: Insert professor

SQL: INSERT INTO PROFESSOR (T\_ID, P\_ROOM) VALUES (1768531749, 'R-101')

Result: ok

Detail: affected\_rows=1

Title: Deactivate professor

SQL: UPDATE TEACHER SET T\_IS\_ACTIVE = 0 WHERE T\_ID = 1768531749

Result: ok

Detail: affected\_rows=1

Title: Verify professor inactive 1768531749

SQL: SELECT T\_ID, T\_IS\_ACTIVE FROM TEACHER WHERE T\_ID = 1768531749

Result: ok

Rows (first 10):

{'T\_ID': 1768531749, 'T\_IS\_ACTIVE': 0}

\*\*\*\*\* End of Test Case 4 \*\*\*\*\*

\*\*\*\*\* Test Case 5 \*\*\*\*\*

Case: Hire professor

Title: Insert postal code

SQL: INSERT INTO POSTAL\_CODE (ZIP, CITY) VALUES ('Z31749', 'Test City')

Result: ok

Detail: affected\_rows=1

Title: Insert teacher for professor

SQL: INSERT INTO TEACHER (T\_ID, T\_NAME, T\_LASTNAME, FK\_D\_NAME, FK\_ZIP, T\_NOTES, T\_IS\_ACTIVE)  
VALUES (1768531749, 'Test', 'Professor', NULL, 'Z31749', 'Test hire', 1)

Result: ok

Detail: affected\_rows=1

Title: Insert professor

SQL: INSERT INTO PROFESSOR (T\_ID, P\_ROOM) VALUES (1768531749, 'R-202')

Result: ok

Detail: affected\_rows=1

Title: Verify hired professor 1768531749

SQL: SELECT T.T\_ID, T.T\_IS\_ACTIVE, T.FK\_ZIP, P.P\_ROOM FROM TEACHER T JOIN PROFESSOR P ON P.T\_ID =  
T.T\_ID WHERE T.T\_ID = 1768531749

Result: ok

Rows (first 10):

{'T\_ID': 1768531749, 'T\_IS\_ACTIVE': 1, 'FK\_ZIP': 'Z31749', 'P\_ROOM': 'R-202'}

\*\*\*\*\* End of Test Case 5 \*\*\*\*\*

\*\*\*\*\* Test Case 6 \*\*\*\*\*

Case: Insert semester planning

Title: Start a new semester planning session for a upcoming term

SQL: INSERT INTO SEMESTER\_PLANNING (SP\_ID, SP\_TERM, SP\_VERSION\_NR, SP\_IS\_FINAL) VALUES  
(1768531749, 'WS99', 1, 0)

Result: ok

Detail: affected\_rows=1

Title: Verify semester planning 1768531749

SQL: SELECT \* FROM SEMESTER\_PLANNING WHERE SP\_ID = 1768531749

Result: ok

Rows (first 10):

{'SP\_ID': 1768531749, 'SP\_TERM': 'WS99', 'SP\_VERSION\_NR': 1, 'SP\_IS\_FINAL': 0}

\*\*\*\*\* End of Test Case 6 \*\*\*\*\*

\*\*\*\*\* Test Case 7 \*\*\*\*\*

Case: List subjects for SWB semester 6

Title: Query subjects for SWB semester 6

SQL: SELECT S.S\_ID, S.S\_NAME, S.S\_SEMESTER, ST.ST\_NAME FROM SUBJECT S JOIN STUDY\_PROGRAM ST ON S.FK\_ST\_NAME = ST.ST\_NAME WHERE ST.ST\_NAME = 'SWB' AND S.S\_SEMESTER = 6

Result: ok

Rows (first 10):

{'S\_ID': 171, 'S\_NAME': 'Informationssysteme ', 'S\_SEMESTER': 6, 'ST\_NAME': 'SWB'}

{'S\_ID': 174, 'S\_NAME': 'Labor Informationssysteme ', 'S\_SEMESTER': 6, 'ST\_NAME': 'SWB'}

{'S\_ID': 177, 'S\_NAME': 'Softwarequalit■t', 'S\_SEMESTER': 6, 'ST\_NAME': 'SWB'}

{'S\_ID': 179, 'S\_NAME': 'Labor Softwarequalit■t ', 'S\_SEMESTER': 6, 'ST\_NAME': 'SWB'}

{'S\_ID': 181, 'S\_NAME': 'IT-Sicherheit ', 'S\_SEMESTER': 6, 'ST\_NAME': 'SWB'}

{'S\_ID': 183, 'S\_NAME': 'Labor IT-Sicherheit ', 'S\_SEMESTER': 6, 'ST\_NAME': 'SWB'}

{'S\_ID': 185, 'S\_NAME': 'Studienprojekt ', 'S\_SEMESTER': 6, 'ST\_NAME': 'SWB'}

Title: Get current semester

SQL: SELECT MAX(SP\_ID) AS SP\_ID FROM SEMESTER\_PLANNING

Result: ok

Rows (first 10):

{'SP\_ID': 3}

Title: Get next offering id

SQL: SELECT COALESCE(MAX(O\_ID), 0) + 1 AS NEXT\_ID FROM OFFERING

Result: ok

Rows (first 10):

{'NEXT\_ID': 807}

Title: Insert offering for subject 171

SQL: INSERT INTO OFFERING (O\_ID, FK\_S\_ID, FK\_SP\_ID, O\_PLANNED\_HOURS) VALUES (807, 171, 3, 0)

Result: ok

Detail: affected\_rows=1

Title: Insert offering for subject 174

SQL: INSERT INTO OFFERING (O\_ID, FK\_S\_ID, FK\_SP\_ID, O\_PLANNED\_HOURS) VALUES (808, 174, 3, 0)

Result: ok

Detail: affected\_rows=1

Title: Insert offering for subject 177

SQL: INSERT INTO OFFERING (O\_ID, FK\_S\_ID, FK\_SP\_ID, O\_PLANNED\_HOURS) VALUES (809, 177, 3, 0)

Result: ok

Detail: affected\_rows=1

Title: Insert offering for subject 179

SQL: INSERT INTO OFFERING (O\_ID, FK\_S\_ID, FK\_SP\_ID, O\_PLANNED\_HOURS) VALUES (810, 179, 3, 0)

Result: ok

Detail: affected\_rows=1

Title: Insert offering for subject 181

SQL: INSERT INTO OFFERING (O\_ID, FK\_S\_ID, FK\_SP\_ID, O\_PLANNED\_HOURS) VALUES (811, 181, 3, 0)

Result: ok

Detail: affected\_rows=1

Title: Insert offering for subject 183

SQL: INSERT INTO OFFERING (O\_ID, FK\_S\_ID, FK\_SP\_ID, O\_PLANNED\_HOURS) VALUES (812, 183, 3, 0)

Result: ok

Detail: affected\_rows=1

Title: Insert offering for subject 185

SQL: INSERT INTO OFFERING (O\_ID, FK\_S\_ID, FK\_SP\_ID, O\_PLANNED\_HOURS) VALUES (813, 185, 3, 0)

Result: ok

Detail: affected\_rows=1

Title: Verify inserted offerings

SQL: SELECT O\_ID, FK\_S\_ID, FK\_SP\_ID FROM OFFERING WHERE O\_ID IN (807, 808, 809, 810, 811, 812, 813)

Result: ok

Rows (first 10):

{'O\_ID': 807, 'FK\_S\_ID': 171, 'FK\_SP\_ID': 3}

{'O\_ID': 808, 'FK\_S\_ID': 174, 'FK\_SP\_ID': 3}

{'O\_ID': 809, 'FK\_S\_ID': 177, 'FK\_SP\_ID': 3}

{'O\_ID': 810, 'FK\_S\_ID': 179, 'FK\_SP\_ID': 3}

{'O\_ID': 811, 'FK\_S\_ID': 181, 'FK\_SP\_ID': 3}

{'O\_ID': 812, 'FK\_S\_ID': 183, 'FK\_SP\_ID': 3}

{'O\_ID': 813, 'FK\_S\_ID': 185, 'FK\_SP\_ID': 3}

\*\*\*\*\* End of Test Case 7 \*\*\*\*\*

\*\*\*\*\* Test Case 8 \*\*\*\*\*

Case: Missing offering assignments

Title: Find offerings without assignments

SQL: SELECT O.O\_ID, O.FK\_S\_ID, O.FK\_SP\_ID FROM OFFERING O LEFT JOIN OFFERING\_ASSIGNMENT OA ON OA.FK\_O\_ID = O.O\_ID WHERE OA.FK\_O\_ID IS NULL

Result: ok

\*\*\*\*\* End of Test Case 8 \*\*\*\*\*

\*\*\*\*\* Test Case 9 \*\*\*\*\*

Case: Professor workload for semester

Title: Get current semester

SQL: SELECT MAX(SP\_ID) AS SP\_ID FROM SEMESTER\_PLANNING

Result: ok

Rows (first 10):

{'SP\_ID': 3}

Title: Get a professor

SQL: SELECT T\_ID FROM PROFESSOR FETCH FIRST 1 ROW ONLY

Result: ok

Rows (first 10):

{'T\_ID': 0}

Title: Compute professor workload

SQL: SELECT T\_ID, T\_NAME, T\_LASTNAME, ASSIGNED\_HOURS, REDUCTION\_HOURS, TOTAL\_WORKLOAD, SP\_TERM FROM PROFESSOR\_ESTIMATED\_WORKLOAD WHERE T\_ID = 0

Result: ok

Rows (first 10):

{'T\_ID': 0, 'T\_NAME': None, 'T\_LASTNAME': 'Service G', 'ASSIGNED\_HOURS': '78.00', 'REDUCTION\_HOURS': '0.00', 'TOTAL\_WORKLOAD': '78.00', 'SP\_TERM': 'WS1516'}

{'T\_ID': 0, 'T\_NAME': None, 'T\_LASTNAME': 'Service G', 'ASSIGNED\_HOURS': '82.00', 'REDUCTION\_HOURS': '0.00', 'TOTAL\_WORKLOAD': '82.00', 'SP\_TERM': 'SS15'}

{'T\_ID': 0, 'T\_NAME': None, 'T\_LASTNAME': 'Service G', 'ASSIGNED\_HOURS': '75.00',

'REDUCTION\_HOURS': '0.00', 'TOTAL\_WORKLOAD': '75.00', 'SP\_TERM': 'WS1415'}

\*\*\*\*\* End of Test Case 9 \*\*\*\*\*

\*\*\*\*\* Test Case 10 \*\*\*\*\*

Case: Report offered courses for semester

Title: Get current semester

SQL: SELECT MAX(SP\_ID) AS SP\_ID FROM SEMESTER\_PLANNING

Result: ok

Rows (first 10):

{'SP\_ID': 3}

Title: Report offered courses for semester

SQL: SELECT S\_ID, S\_NAME, S\_SEMESTER, ST\_NAME, FK\_SP\_ID, SP\_TERM FROM  
STUDY\_PROGRAM\_OFFERED\_COURSES WHERE FK\_SP\_ID = 3 ORDER BY S\_NAME

Result: ok

Rows (first 10):

{'S\_ID': 303, 'S\_NAME': 'Algorithmen', 'S\_SEMESTER': 7, 'ST\_NAME': 'TIB', 'FK\_SP\_ID': 3,  
'SP\_TERM': 'WS1516'}

{'S\_ID': 274, 'S\_NAME': 'Algorithmen', 'S\_SEMESTER': 7, 'ST\_NAME': 'KTB', 'FK\_SP\_ID': 3,  
'SP\_TERM': 'WS1516'}

{'S\_ID': 107, 'S\_NAME': 'Algorithmen und Datenstrukturen', 'S\_SEMESTER': 3, 'ST\_NAME': 'SWB',  
'FK\_SP\_ID': 3, 'SP\_TERM': 'WS1516'}

{'S\_ID': 108, 'S\_NAME': 'Algorithmen und Datenstrukturen', 'S\_SEMESTER': 4, 'ST\_NAME': 'WKB',  
'FK\_SP\_ID': 3, 'SP\_TERM': 'WS1516'}

{'S\_ID': 23, 'S\_NAME': 'BWL', 'S\_SEMESTER': 1, 'ST\_NAME': 'WKB', 'FK\_SP\_ID': 3, 'SP\_TERM':  
'WS1516'}

{'S\_ID': 203, 'S\_NAME': 'Bachelorarbeit ', 'S\_SEMESTER': 7, 'ST\_NAME': 'SWB', 'FK\_SP\_ID': 3,  
'SP\_TERM': 'WS1516'}

{'S\_ID': 205, 'S\_NAME': 'Bachelorarbeit', 'S\_SEMESTER': 7, 'ST\_NAME': 'WKB', 'FK\_SP\_ID': 3,  
'SP\_TERM': 'WS1516'}

{'S\_ID': 204, 'S\_NAME': 'Bachelorarbeit', 'S\_SEMESTER': 7, 'ST\_NAME': 'TIB', 'FK\_SP\_ID': 3,  
'SP\_TERM': 'WS1516'}

{'S\_ID': 202, 'S\_NAME': 'Bachelorarbeit ', 'S\_SEMESTER': 7, 'ST\_NAME': 'MIB', 'FK\_SP\_ID': 3,  
'SP\_TERM': 'WS1516'}

{'S\_ID': 325, 'S\_NAME': 'Bachelorarbeiten ASM," Export', 'S\_SEMESTER': 1, 'ST\_NAME': 'ASM',  
'FK\_SP\_ID': 3, 'SP\_TERM': 'WS1516'}

\*\*\*\*\* End of Test Case 10 \*\*\*\*\*

\*\*\*\*\* Test Case 11 \*\*\*\*\*

Case: Update offering assignment actual hours

Title: Insert department

SQL: INSERT INTO DEPARTMENT (D\_NAME) VALUES ('D1768531749')

Result: ok

Detail: affected\_rows=1

Title: Insert study program

SQL: INSERT INTO STUDY\_PROGRAM (ST\_NAME, FK\_D\_NAME) VALUES ('S1768531749', 'D1768531749')

Result: ok

Detail: affected\_rows=1

Title: Insert subject

SQL: INSERT INTO SUBJECT (S\_ID, FK\_ST\_NAME, S\_NAME, S\_SEMESTER, S\_STUPO\_HOURS, S\_NOTES, S\_TYPE)  
VALUES (1768531749, 'S1768531749', 'Test Subject', 1, 1.00, 'Test', 'W')

Result: ok

Detail: affected\_rows=1

Title: Insert semester planning

SQL: INSERT INTO SEMESTER\_PLANNING (SP\_ID, SP\_TERM, SP\_VERSION\_NR, SP\_IS\_FINAL) VALUES (1768531749, 'TS1768531749', 1, 0)

Result: ok

Detail: affected\_rows=1

Title: Insert offering

SQL: INSERT INTO OFFERING (O\_ID, FK\_S\_ID, FK\_SP\_ID, O\_PLANNED\_HOURS) VALUES (1768531749, 1768531749, 1768531749, 1)

Result: ok

Detail: affected\_rows=1

Title: Insert teacher

SQL: INSERT INTO TEACHER (T\_ID, T\_NAME, T\_LASTNAME, FK\_D\_NAME, FK\_ZIP, T\_NOTES, T\_IS\_ACTIVE) VALUES (1768531749, 'Test', 'Teacher', 'D1768531749', NULL, 'Test', 1)

Result: ok

Detail: affected\_rows=1

Title: Insert offering assignment

SQL: INSERT INTO OFFERING\_ASSIGNMENT (OA\_ID, FK\_O\_ID, FK\_T\_ID, OA\_ASSIGNED\_HOURS, OA\_ACTUAL\_HOURS, OA\_ROLE) VALUES (1768531749, 1768531749, 1768531749, 2.0, 0.0, NULL)

Result: ok

Detail: affected\_rows=1

Title: Update offering assignment actual hours

SQL: UPDATE OFFERING\_ASSIGNMENT SET OA\_ACTUAL\_HOURS = 7.0 WHERE OA\_ID = 1768531749

Result: ok

Detail: affected\_rows=1

Title: Verify updated actual hours

SQL: SELECT OA\_ID, OA\_ACTUAL\_HOURS FROM OFFERING\_ASSIGNMENT WHERE OA\_ID = 1768531749

Result: ok

Rows (first 10):

{'OA\_ID': 1768531749, 'OA\_ACTUAL\_HOURS': '7.00'}

\*\*\*\*\* End of Test Case 11 \*\*\*\*\*

\*\*\*\*\* Test Case 12 \*\*\*\*\*

Case: Teacher actual workload for WS1415

Title: Compute teacher actual workload

SQL: SELECT T\_ID, T\_NAME, T\_LASTNAME, ACTUAL\_HOURS, SP\_TERM FROM TEACHER\_ACTUAL\_WORKLOAD WHERE T\_LASTNAME = 'Nonnast' AND SP\_TERM = 'WS1415'

Result: ok

Rows (first 10):

{'T\_ID': 16, 'T\_NAME': 'Jürgen', 'T\_LASTNAME': 'Nonnast', 'ACTUAL\_HOURS': '14.60', 'SP\_TERM': 'WS1415'}

\*\*\*\*\* End of Test Case 12 \*\*\*\*\*