



INTEGRATION TESTING

TEST CASES FOR COMPUTER DATABASE

Test ID	Test Cases
DB_1	Create a computer and verify it is added to the database successfully
DB_2	Create multiple computers with different attributes and ensure they are all stored correctly
DB_3	Delete a computer and confirm it is removed from the database
DB_4	Try to delete a non-existent computer and verify that the database remains unchanged
DB_5	Create a computer with missing mandatory fields and validate that it fails to be added to the database
DB_6	Create a computer with duplicate attributes and check if the system handles the duplication correctly
DB_7	Create a computer with special characters in the attributes and ensure they are stored and retrieved accurately
DB_8	Create a computer with maximum allowed attribute lengths and verify if they are stored correctly
DB_9	Create a computer with attributes exceeding the maximum allowed lengths and check if the system handles it appropriately
DB_10	Create a computer with null values in optional fields and validate if the system treats them correctly
DB_11	Delete a computer and verify if related data (e.g., associated software or peripherals) are also removed



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DB_12	Create a computer and immediately check if it is retrievable from the database
DB_13	Create multiple computers with the same name and verify if they are stored correctly and can be distinguished
DB_14	Delete a computer while another user is attempting to access it and ensure the system handles it gracefully
DB_15	Create a computer and simultaneously perform a search operation to ensure it is retrievable immediately
DB_16	Create a computer and modify its attributes, then validate if the changes are reflected correctly in the database
DB_17	Create a computer with invalid attribute values (e.g., non-numeric value in a numeric field) and validate system behavior
DB_18	Create a computer with attributes containing leading/trailing spaces and check if the system handles them appropriately
DB_19	Delete a computer and confirm it is no longer included in any database queries
DB_20	Create a computer with past or future timestamps and validate if the system handles them accurately
DB_21	Create a computer with dependencies on other tables (e.g., foreign keys) and verify if the relationships are maintained
DB_22	Delete a computer with dependencies and ensure the related data is also removed from the database
DB_23	Create a computer with non-unique attributes and validate if the system enforces uniqueness constraints
DB_24	Create a computer and immediately update its attributes, then verify if the updated data is stored correctly
DB_25	Create a computer and immediately update its attributes, then verify if the updated data is stored correctly



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DB_26	Create a computer and immediately update its attributes, then verify if the updated data is stored correctly
DB_27	Create a computer and immediately update its attributes, then verify if the updated data is stored correctly
DB_28	Create a computer with a large number of attributes and verify if they are all stored accurately
DB_29	Create a computer and immediately create a backup of the database, then ensure the backup includes the new computer
DB_30	Delete a computer and simultaneously perform a backup operation to verify if the computer is excluded from the backup
DB_31	Create a computer and check if the database size increases accordingly
DB_32	Create a computer and monitor the system's performance to ensure it remains stable and responsive
DB_33	Delete a computer and monitor the system's performance to ensure it remains stable and responsive
DB_34	Create a computer and check if it can be accessed and displayed correctly in the user interface
DB_35	Create a computer and immediately perform a system restart, then validate if the computer persists after the restart
DB_36	Delete a computer and immediately perform a system restart, then verify if the computer is permanently removed
DB_37	Create a computer and check if it can be retrieved using different search criteria (e.g., name, attributes, ID)
DB_38	Create a computer and perform concurrent read operations from multiple clients to ensure data consistency



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DB_39	Delete a computer and perform concurrent write operations from multiple clients to ensure data consistency
DB_40	Create a computer and simulate a network failure during the creation process, then verify if the database handles it
DB_41	Delete a computer and simulate a network failure during the deletion process, then verify if the database handles it
DB_42	Create a computer and simulate a system crash before the data is persisted, then check if the data is lost
DB_43	Delete a computer and simulate a system crash before the deletion is completed, then check if the computer still exists
DB_44	Create a computer and perform a backup operation, then restore the database from the backup and verify if the computer is included
DB_45	Delete a computer and perform a backup operation, then restore the database from the backup and ensure the computer is removed
DB_46	Create a computer and generate a report based on its attributes, then validate if the report contains accurate data
DB_47	Delete a computer and generate a report based on its attributes, then ensure the deleted computer is excluded from the report
DB_48	Create a computer and export the database to a different format (e.g., CSV), then validate if the computer is included in the export
DB_49	Delete a computer and export the database to a different format (e.g., CSV), then verify if the computer is excluded from the export
DB_50	Create a computer and perform a bulk insertion of multiple computers, then verify if they are all stored correctly
DB_51	Delete multiple computers in a single operation and validate if all the computers are successfully removed



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DB_52	Create a computer and modify its attributes concurrently from multiple clients to test data integrity
DB_53	Delete a computer and perform simultaneous read operations from multiple clients to ensure consistent behavior
DB_54	Create a computer and verify if it can be successfully accessed and modified from different user roles
DB_55	Delete a computer and verify if the deletion is properly audited in the system logs
DB_56	Create a computer and simulate high database load to evaluate the system's performance under stress
DB_57	Delete a computer and simulate high database load to evaluate the system's performance under stress
DB_58	Create a computer and validate if the database transaction is properly handled and committed
DB_59	Delete a computer and validate if the database transaction is properly handled and committed
DB_60	Create a computer and verify if the database indexes are correctly updated for fast retrieval
DB_61	Delete a computer and verify if the database indexes are correctly updated to remove the deleted computer
DB_62	Create a computer and verify if the database backups are created and can be successfully restored
DB_63	Delete a computer and verify if the database backups are updated to exclude the deleted computer
DB_64	Delete a computer and verify if the database backups are updated to exclude the deleted computer
DB_65	Delete a computer and check if the system handles concurrent read and write operations gracefully



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DB_66	Create a computer and test the system's response time when accessing and modifying the computer
DB_67	Delete a computer and test the system's response time when performing the deletion operation
DB_68	Create a computer and check if the system enforces any constraints or validations defined in the database schema
DB_69	Create a computer and check if the system enforces any constraints or validations defined in the database schema
DB_70	Create a computer and check if the system enforces any constraints or validations defined in the database schema
DB_71	Delete a computer and verify if the associated software and peripherals are also removed from the database
DB_72	Create a computer and check if the system handles concurrently create operations from multiple clients
DB_73	Delete a computer and check if the system handles concurrent delete operations from multiple clients
DB_74	Create a computer and validate if the database triggers and stored procedures are executed as expected
DB_75	Delete a computer and validate if the database triggers and stored procedures are executed as expected
DB_76	Create a computer and perform a rollback operation to verify if the changes are correctly reverted
DB_77	Delete a computer and perform a rollback operation to verify if the deletion is correctly undone
DB_78	Create a computer and check if the database constraints (e.g., foreign key, unique key) are properly enforced



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DB_79	Delete a computer and check if the database constraints are properly enforced and prevent invalid operations
DB_80	Create a computer and verify if the system logs the creation event with the correct timestamp and user information
DB_81	Delete a computer and verify if the system logs the deletion event with the correct timestamp and user information
DB_82	Create a computer and check if the system sends appropriate notifications or triggers external events
DB_83	Delete a computer and check if the system sends appropriate notifications or triggers external events
DB_84	Create a computer and verify if the database transaction is ACID-compliant (Atomicity, Consistency, Isolation, Durability)
DB_85	Delete a computer and verify if the database transaction is ACID-compliant
DB_86	Create a computer and verify if the system handles concurrent create and delete operations gracefully
DB_87	Delete a computer and verify if the system handles concurrent create and delete operations gracefully
DB_88	Create a computer and check if the database supports different character encodings and handles them correctly
DB_89	Delete a computer and check if the database supports different character encodings and handles them correctly
DB_90	Create a computer and perform a search operation using different sorting options, then validate if the results are sorted correctly
DB_91	Delete a computer and perform a search operation using different sorting options, then verify if the deleted computer is excluded from the results
DB_92	Create a computer and check if the database storage capacity is properly managed and does not exceed the limits



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DB_93	Delete a computer and check if the database storage capacity is properly managed and frees up space after deletion
DB_94	Create a computer and verify if the database supports concurrent connections and operations from multiple clients
DB_95	Delete a computer and verify if the database supports concurrent connections and operations from multiple clients
DB_96	Create a computer and validate if the database performs necessary data integrity checks during the creation process
DB_97	Delete a computer and validate if the database performs necessary data integrity checks during the deletion process
DB_98	Create a computer and check if the system handles network interruptions during the creation operation
DB_99	Delete a computer and check if the system handles network interruptions during the deletion operation
DB_100	Create a computer and perform a full system backup, then restore the database from the backup and ensure all data is restored correctly