

SkyWatch Tanzania
Complete SQL Practice Workbook
Phase 1 – Phase 6 + Bonus Exam

Student Name: Francis Masanja

Date: December 2025

PHASE 1 – Basic SELECT (Questions 1–15)

1. Show all columns from the stations table.
2. Show only station_name and owner_phone from stations.
3. List all stations installed in 2025.
4. Show all stations that are NOT active.
5. Show the 10 newest stations (by installed_date).
6. Show all stations whose name contains the word “School”.
7. Show all locations in Dar es Salaam.
8. Show latitude and longitude of station_id = 3721.
9. List all sensor types (without duplicates).
10. Show the 20 most recent weather readings.
11. Show temperature readings above 35 °C.
12. Show all readings taken on 27 November 2025.
13. Show rain_mm and recorded_at for station 3721.
14. Show all alerts of type “heavy_rain”.
15. Show daily summaries where total_rain_mm > 50.

PHASE 2 – Filtering, Sorting & Aggregates (Questions 16–35)

16. Count total number of stations.
17. Count how many stations are active.
18. Find the highest temperature ever recorded.
19. Find the average humidity across all readings.
20. Show total rainfall per station.
21. Show number of sensors per station.

22. List stations that have more than 6 sensors.
23. Show the day with the highest temperature in 2025.
24. Show average temperature per station (only active stations).
25. Show the top 5 wettest days.
26. Count how many alerts each station has received.
27. Show stations that have never received an alert.
28. Show the coldest temperature recorded in each region.
29. Show total number of readings per sensor_type.
30. Show stations installed in May or June 2025.
31. Show the average rainfall per month for 2025.
32. Show stations with average temperature above 30°C.
33. Show regions with more than 5 stations.
34. Show the total rainfall in Tanzania for 2025.
35. Show stations with humidity average below 40%.

PHASE 3 – JOINS (Questions 36–60)

36. Show station name + its latitude and longitude.
37. Show station name + all its sensor models.
38. Show all temperature readings with station name and place_name.
39. Show all readings with sensor_type = 'temperature' and station name.
40. Show daily summary + station name for 27 Nov 2025.
41. Show alerts with station name and owner phone.
42. Show stations that have NO location record.
43. Show sensors that have never sent any reading.
44. Show location + total rainfall yesterday for each station.
45. Show station name + total number of readings.
46. Show station name + total alerts received.
47. Show station name + average temperature.
48. Show region name + total stations.
49. Show region name + hottest temperature.
50. Show station name + latest temperature reading.
51. Show all stations with their sensor count.
52. Show stations + total rainfall this month.
53. Show alerts + temperature at that time.
54. Show stations with rainfall but no temperature sensor.

55. Show all inactive stations with last reading date.
56. Show stations that recorded rain but no alerts issued.
57. Show stations with more than one temperature sensor.
58. Show region with the highest rainfall this year.
59. Show station that recorded the lowest temperature.
60. Show station with the most alerts.

PHASE 4 – INSERT / UPDATE / DELETE (Questions 61–75)

61. Insert a new station: Kilimanjaro Secondary.
62. Insert its location in Moshi with full coordinates.
63. Add two sensors: temperature and rain gauge.
64. Update phone of station_id = 3721.
65. Mark station 100 as not active.
66. Increase all temperatures by 0.5°C.
67. Delete all alerts older than 1 year.
68. Insert humidity sensor to station 3721.
69. Update altitude for Dar es Salaam stations.
70. Delete all readings with NULL temperature.
71. Insert a low battery alert.
72. Activate all inactive stations.
73. Delete faulty sensor readings.
74. Insert a test station.
75. Delete the test station.

PHASE 5 – Subqueries & CTEs (Questions 76–95)

76. Show stations hotter than national average today.
77. Show second-highest temperature ever.
78. Show stations with above average rain yesterday.
79. Show stations with above average sensors.
80. Show hottest station in each region.
81. Show readings hotter than any from Arusha.
82. Show stations with no readings in 7 days.
83. Monthly average temperature for Dar es Salaam.

84. Compare station vs region temperature.
85. Stations with rainfall above national average.
86. Stations with alerts above average.
87. Sensor types with above average readings.
88. Wettest station.
89. Driest region.
90. Stations with maximum humidity per region.
91. Station with regional max temperature.
92. Stations that never exceeded 30°C.
93. Stations wetter than Dar es Salaam.
94. Coldest region.
95. Stations with both highest heat and rainfall.

PHASE 6 – Advanced SQL (Questions 96–115)

96. Add row numbers by date.
97. Rank stations by rainfall.
98. Running total rainfall for station 3721.
99. 3-day moving average temperature.
100. Create view active_temperature.
101. Create index on recorded_at.
102. Create index on place_name.
103. Write transaction for full insert.
104. Top 3 hottest days of 2025.
105. Percentage of rainfall per station.
106. Stored procedure for new station.
107. Trigger for deleted readings.
108. Trigger for auto high-rain alerts.
109. Pivot rainfall monthly.
110. Daily national view.
111. Backup old readings.
112. Rolling 7-day rain average.
113. Partition readings by year.
114. Materialized summary table.
115. Locking transaction.

BONUS FINAL EXAM QUESTIONS (116–120)

- 116. Full region report.
- 117. Temperature outliers.
- 118. Auto heavy rain alerts.
- 119. Year-on-year temperature change.
- 120. National dashboard query.