REPORT

Assessment Data Analysis

FEBRUARY 1, 2025
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Data Dictionary

1. **Invited_By_Email_Address** – Email address of the person who invited the candidate for the assessment.

2. **Appeared_On** – The date and time when the candidate appeared for the test.

3. **Candidate_ID** – Unique identifier assigned to the candidate.

4. **Masked Full Name** – Anonymized full name of the candidate.

5. **Masked Email** – Anonymized email address of the candidate.

6. **Candidate_Status** – Status of the candidate (e.g., Passed, Failed, In Progress, etc.).

7. **Test_Id** – Unique identifier for the test.

8. **Test_Name** – Name of the assessment test.

9. **Test_Status** – Status of the test (e.g., Completed, Terminated,Test Left).

10. **Test_Link_Name** – The label or identifier for the test instance.

11. **Test_Score** – Total score of the test.

12. **Candidate_Score** – Score obtained by the candidate.

13. **Test_Negative_Points** – Negative marking deducted from the candidate's score.

14. **Percentage** – Percentage score achieved by the candidate.

15. **Performance_Category** – Classification of performance (e.g., Beginner, Experienced)

16. **Total_Questions** – Total number of questions in the test.

17. **Test_Duration (minutes)** – Total duration of the test in minutes.

18. **Time_Taken (minutes)** – Time spent by the candidate to complete the test.

19. **Candidate_Feedback** – Feedback provided by the candidate about the test experience.

20. **Proctoring_Flag** – Proctoring status (e.g., Green - No violations, Red - Violations detected).

21. **Window_Violation** – Number of times the candidate switched windows during the test.

22. **Time_Violation (seconds)** – Total time (in seconds) spent violating test rules.

23. **Applicant_ID** – Unique identifier for the applicant (if linked to a job application).

24. **Percentile** – Candidate's percentile ranking among all test-takers.

25. **Section_Name** – Name of the test section (e.g., General Intelligence).

26. **Section_Score** – Maximum score for the section.

27. **Candidate_Section_Score** – Score obtained by the candidate in this section.

28. **Questions** – Total number of questions in the section.

29. **Not_Answered** – Number of questions not attempted by the candidate.

30. **Answered** – Number of questions attempted by the candidate.

31. **Correct** – Number of correctly answered questions.

32. **Wrong** – Number of incorrectly answered questions.

Data Preprocessing using Power Query and DAX

1. Null columns removed
   - Candidate Status
   - Application ID
2. Appeared_On column split into:
   - Appeared_On_Time
   - Appeared_On_Date
3. Replaced null values in Procturing_Flag to "Unknown" and Feedback to "No feedback".
4. "Candidate_Summary" created for "Summary" Dashboard to calculate metrics grouped by "Candidate Name".

```
Candidate_Summary =
SUMMARIZE(
    'Section Level Report',
    'Section Level Report'[Candidate_ID],
    'Section Level Report'[Masked Full Name],
    'Section Level Report'[Test_Name],
    'Section Level Report'[Candidate_Score],
    'Section Level Report'[Percentage],
    'Section Level Report'[Percentile],
    'Section Level Report'[Time_Taken(minutes)],
    'Section Level Report'[Performance_Category] ,
    'Section Level Report'[Test_Score]
)
```

Figure 1 DAX: Candidate Summary

5. Maximum percentile is calculated along with the candidate name for each test.

```
Max_Percentile_Candidate_Summary =
VAR SelectedTest =
    IF(
        HASONEVALUE('Candidate_Summary'[Test_Name]),
        SELECTEDVALUE('Candidate_Summary'[Test_Name]),
        BLANK()
    )

VAR MaxPercentile =
    CALCULATE(
        MAX('Candidate_Summary'[Percentile]),
        FILTER(
            'Candidate_Summary',
            ISBLANK(SelectedTest) || 'Candidate_Summary'[Test_Name] = SelectedTest
        )
    )

VAR CandidateName =
    CALCULATE(
        FIRSTNONBLANK('Candidate_Summary'[Masked Full Name], 1),
        FILTER(
            'Candidate_Summary',
            'Candidate_Summary'[Percentile] = MaxPercentile &&
            (ISBLANK(SelectedTest) || 'Candidate_Summary'[Test_Name] = SelectedTest)
        )
    )

RETURN
    CandidateName & " " & FORMAT(MaxPercentile, "0") & "%"
```

Figure 2 DAX: Maximum Percentile

6. Two measures are created to show "No Violations" for time and window violations.
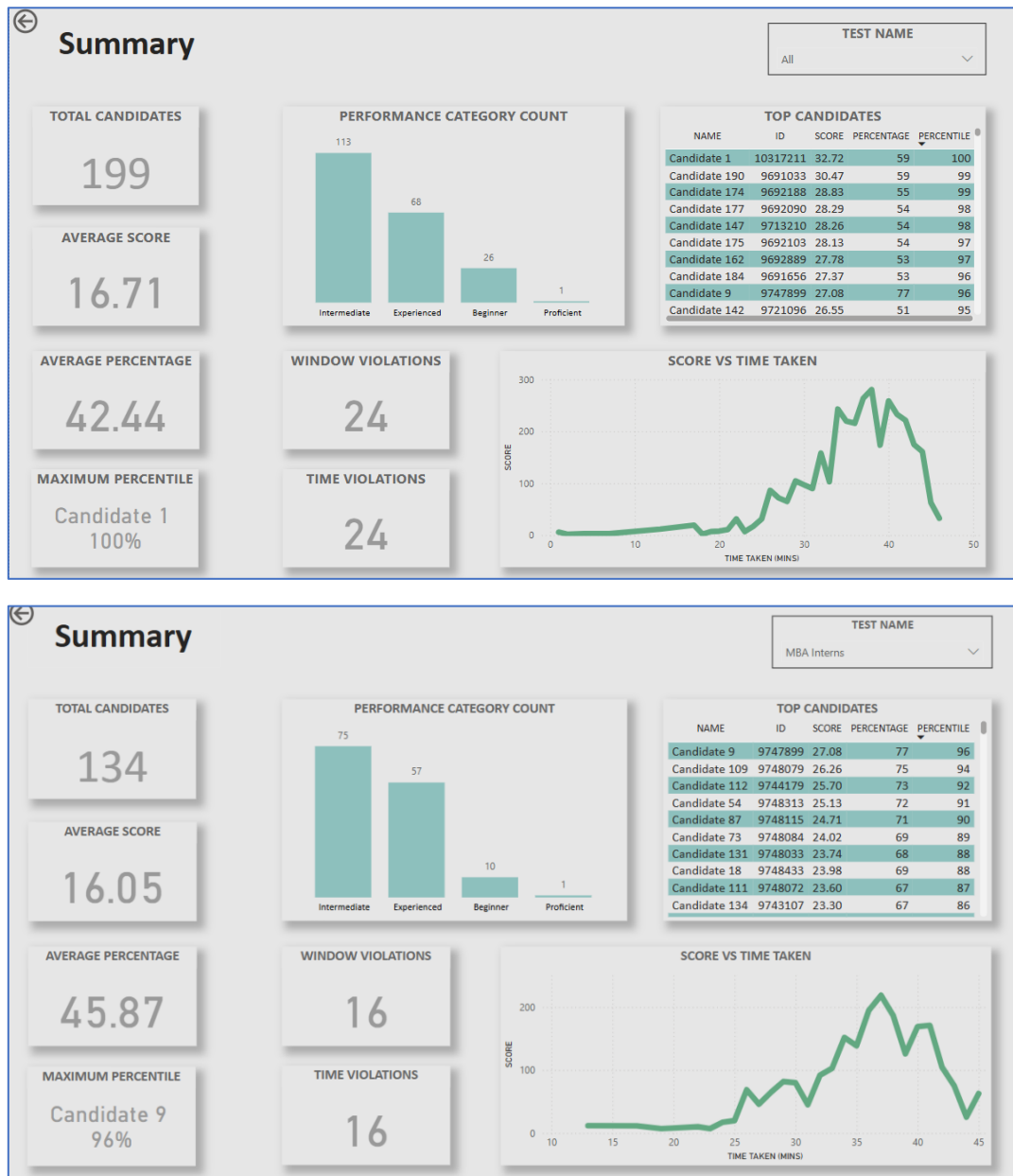
PowerBi Report

Summary

Figure 3 Summary Dashboard Snapshots

1. Slicer:
   - Test Name slicer to filter by different tests.
2. Visuals:
   - **Cards**: Total Candidates, Average Score, Average Percentage, Maximum Percentile
   - **Column Chart**: Performance category counts.
   - **Table**: Top candidates by percentile
   - **Line chart**: Relationship between time taken and test score.

Performance Analysis

Figure 4 Performance Analysis Snapshots

1. Slicers:
   - **Candidate ID**: Filter by candidates ID.
   - **Test Name**: Filter by test name and test section.
2. Visuals:
   - **Cards**: Test Status (Different colours), Date, Time, Test Duration, Time taken by candidate, Performance category, Candidate feedback, Percentage, Percentile.
   - **Gauge**: Test score
   - **Donut chart**: Correct, Incorrect and Unanswered questions.
3. Proctor flag for violation status.
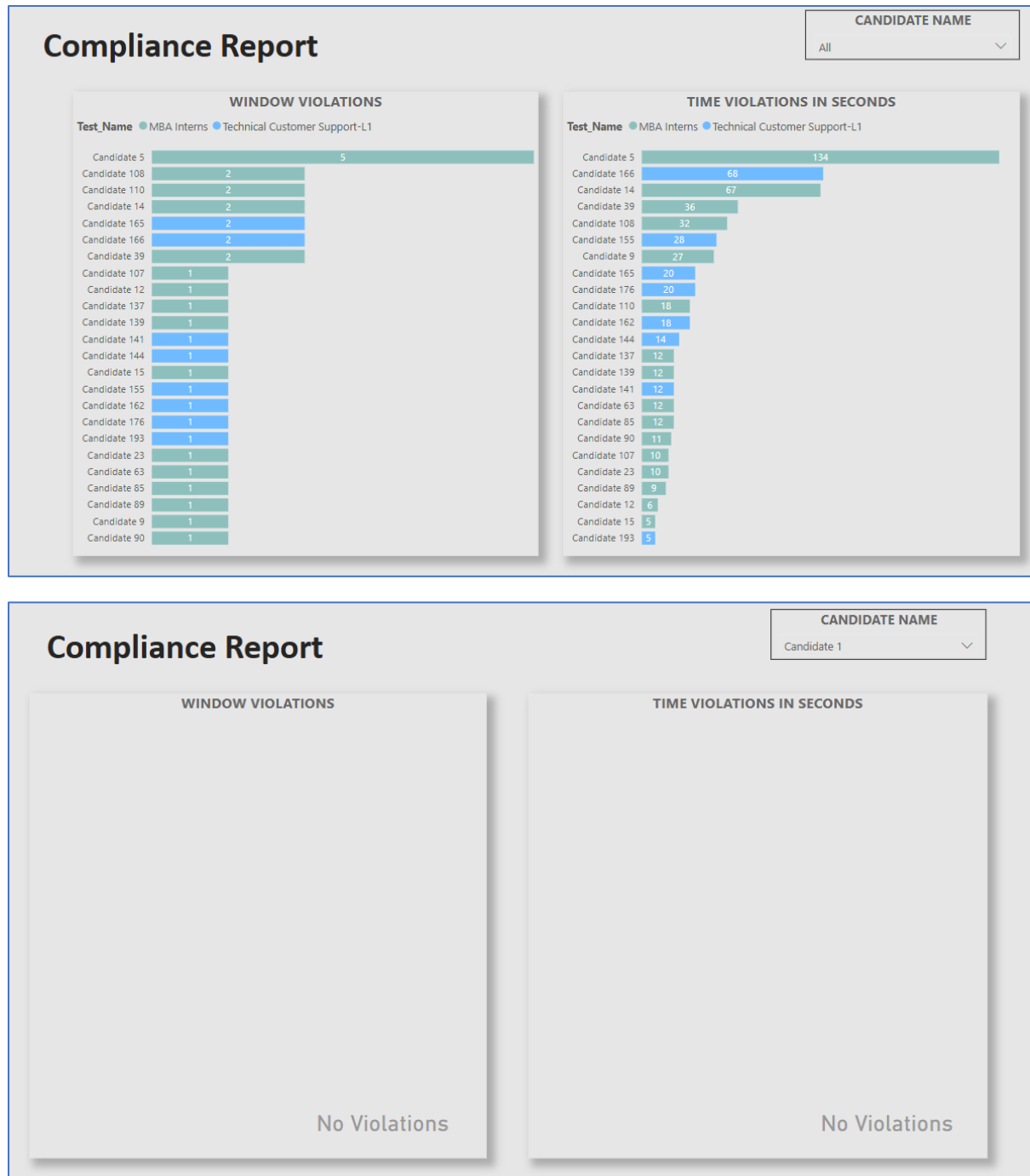
Test Compliance

Figure 5 Compliance Report Snapshots

1. Slicer:
   - Candidate name slicer to filter by name.
2. Visuals:
   - **Card**: To show if there are no violations by a candidate.
   - **Bar Chart**: Window violations and time violations in seconds.

Descriptive Analysis

Summary

1. Overall, there are total 199 candidates and 7 Tests.
2. Average score is 16.71 and average percentage is 42.44.
3. Maximum percentile is 100% for Candidate 1.
4. Below is the table for detailed description:

	AWS	GalaxE Sol	iOS Developer	Manual Tester	MBA Intern	Senior Java Developer	Technical Customer Support
Total Candidates	1	1	1	1	134	1	60
Average Score	1	2	4	32.72	16.05	2	18.97
Average Percentage	2	6	10	59	45.87	3	36.45
Maximum Percentile	0	2	3	100	96	2	99

Table 1 Summary: Descriptive analysis

5. Performance Category Count:
   Beginner   26
   Intermediate   113
   Experienced   1
   Proficient   68
6. Total time violation and window violation are done by 24 candidates.

Performance Analysis

Let's take one candidate with Candidate ID 8107534:

1. Test Taken: Senior Java Developer
2. Test Status: Completed
3. Date:10 March 2023
4. Time: 02:52:00
5. Test Duration: 77 mins
6. Time Taken:7 mins
7. Correct-2, Incorrect-8, Unanswered-6
8. Test Score: 2/60
9. Percentage:3
10. Percentile:2
11. Performance Category: Beginner
12. Candidate Feedback: Great
13. Proctor Flag is Green.

Test Compliance

1. **Window Violations:**
   - There is total 24 candidates in Window violations.
   - Violations are in two tests: MBA Intern and Technical Customer Support
   - Most violations are by Candidate 5 which are 5.

2. **Time Violations:**
   - There is total 24 candidates in Time violations.
   - Violations are in two tests: MBA Intern and Technical Customer Support
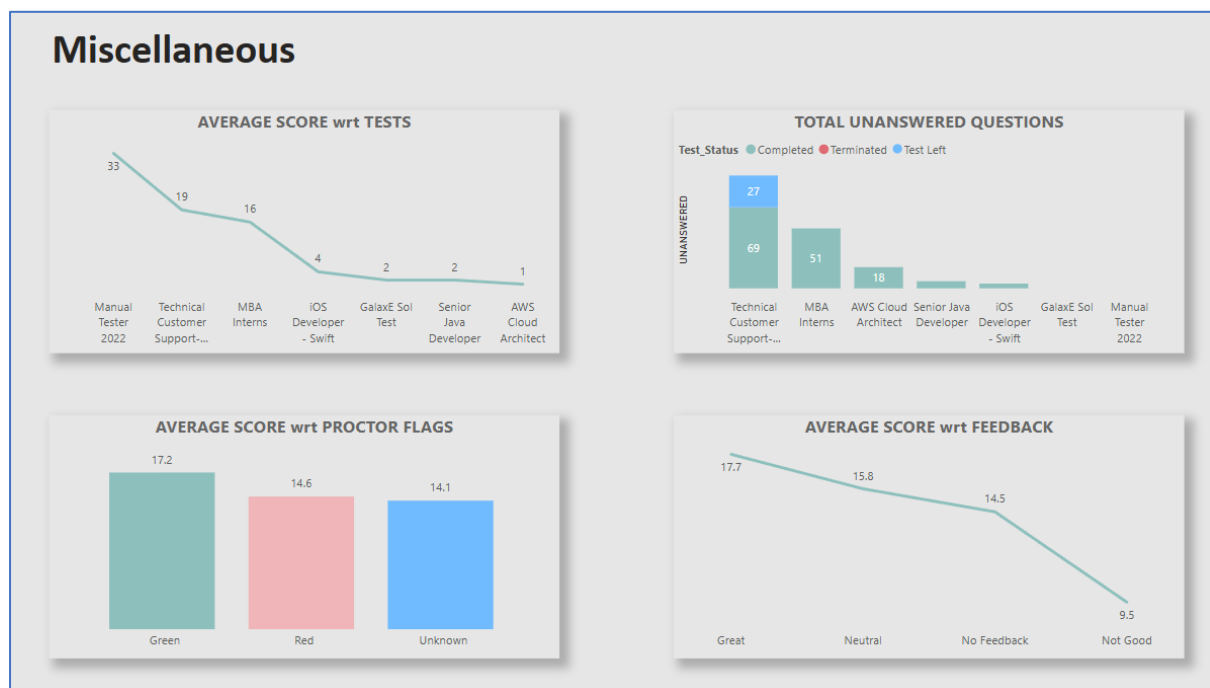   - Most violations are by Candidate 5 which are 134 seconds.

Diagnostic Analysis

Figure 6 Miscellaneous

1. **Decline in Average Scores Across Tests**
   - Candidates performed exceptionally well in the **Manual Tester 2022** test (Avg Score: 33), but the scores drop significantly in other tests, especially in **AWS Cloud Architect** (Avg Score: 1).
   - Possible reasons:
     a) **Variation in test difficulty**—some tests might be harder than others.
     b) **Candidate expertise**—more skilled candidates may have taken certain tests.
     c) **Test format differences**—some tests may have different scoring mechanisms.

2. **High Number of Unanswered Questions in Certain Tests**
   - **Technical Customer Support (69 unanswered) and MBA Interns (51 unanswered)** tests have the most skipped questions.
   - **AWS Cloud Architect (18 unanswered)** also shows a noticeable count.
   - Possible reasons:
   a) **Time constraints**—candidates may not have enough time to complete all questions.
   b) **Question complexity**—certain tests may have more difficult or ambiguous questions.
   c) **Test status impact**—terminated or abandoned tests might contribute to high unanswered counts.

3. **Impact of Proctoring Flags on Performance**
   - Candidates with **Green (No Violations)** had the highest average score (17.2), while **Red (Violations Detected)** and **Unknown** scored lower (14.6 and 14.1, respectively).
   - Possible reasons:
   a) **Cheating detection**— Candidates with violations may have engaged in unfair means but were still unsuccessful.
   b) **Stress factor**— Proctored tests may create anxiety, leading to lower performance.
   c) **Test environment differences**—technical issues or distractions could impact scores.

4. **Correlation Between Feedback and Scores**
   - Candidates who rated the test as **Great** scored **17.7**, while those who gave **Not Good** feedback had the lowest score (**9.5**).
   - Possible reasons:
   a) **Test design issues**—if many low-scoring candidates rated the test poorly, the test may need improvements.
   b) **Candidate mindset**—higher-performing candidates may naturally view the test more positively.