Career Track Analysis of a Learning Platform

Dataset Source: 365 Data Science
Tools: MySQL, Tableau, Excel

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SUMMARY

*This project **analyzes learner behavior across three career tracks—Data Analyst, Business Analyst, and Data Scientist**—on a learning platform. **Using SQL** for data preparation **and Tableau** for visualization, the analysis reveals clear enrollment preferences, seasonal peaks, and completion patterns.*

Key findings include:

- ***Track Popularity: Data Analyst** track dominates enrollments.*
- *Registration Behavior: **~80% learners register for a single track**.*
- *Seasonality: **Peaks in August and during winter vacations**.*
- ***Completion Patterns:** Many finish **within 60 days**, though **some extend beyond a year.***
- ***Recommendations** suggest **promoting bundled pathways, launching seasonal campaigns, improving retention with nudges, and positioning the DA track as a gateway to advanced learning.***

OBJECTIVE & BUSINESS QUESTIONS

Goal: Analyze student behavior across career tracks to understand enrollments, multi-track registrations, and completion patterns, then communicate actionable insights.

Key questions:

1. *How many learners enroll, and how is enrollment distributed by career track?*
2. *What share of learners register for a single track vs multiple tracks?*
3. *What is the overall completion rate, and how long do completions typically take?*
4. *When do enrollments and completions peak over time (seasonality/campaign effects)?*
5. *What improvement opportunities do the patterns suggest for engagement & retention?*

Visit my Github profile for the complete project files and details:
https://github.com/payalgupta02/Career-Track-Analysis---SQL-Tableau

PROCESS

Dataset downloaded *as zip folder 'project-files-career-track-analysis-with-sql-and-tableau' from 365DataScience*

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extracted *the folder*

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imported *the .sql file* ***to MySQL Workbench*** *&* ***ran the script***

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created a schema: One Database & Two tables

`sql_and_tableau`:

Table 1: career_track_info: (track_id PK, track_name)	***Table 1: ·career_track_student_enrollments: (student_id, track_id, date_enrolled, date_completed);***

↓

did the ***exploration, transformation & Manipulation*** *using Mysql query &* ***created the final 'Updated_Master_Student'*** *by joining (inner join) both the table & adding user-defined and required columns.*

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exported *the Updated_Master_Student* ***as a career_track_completions.csv*** *&* ***imported*** *it to* ***tableau Public***

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validated data types & ***built calculated fields***

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Built *cross-filtering enabled* ***dashboard*** *with filters*

SQL PREPARATION

Created a clean analysis table *by joining and deriving fields needed for Tableau.*

```
CREATE TABLE Updated_Master_Student AS
SELECT
 ROW_NUMBER() OVER(ORDER BY e.student_id, e.track_id) AS student_track_id,
 e.student_id,
 e.track_id,
 i.track_name,
 e.date_enrolled,
 e.date_completed,
 IF(e.date_completed IS NOT NULL, 1, 0) AS track_completed,
DATEDIFF(e.date_completed, e.date_enrolled) AS days_for_completion,
 CASE
   WHEN DATEDIFF(e.date_completed,e.date_enrolled) = 0 THEN 'Same day'
   WHEN DATEDIFF(e.date_completed,e.date_enrolled) BETWEEN 1 AND 7 THEN '1 to 7 days'
    WHEN DATEDIFF(e.date_completed,e.date_enrolled) BETWEEN 8 AND 30 THEN '8 to 30
days'
    WHEN DATEDIFF(e.date_completed,e.date_enrolled) BETWEEN 31 AND 60 THEN '31 to 60
days'
    WHEN DATEDIFF(e.date_completed,e.date_enrolled) BETWEEN 61 AND 90 THEN '61 to 90
days'
   WHEN DATEDIFF(e.date_completed,e.date_enrolled) BETWEEN 91 AND 365 THEN '91 to 365
days'
   WHEN DATEDIFF(e.date_completed,e.date_enrolled) > 366 THEN '366+ days'
   ELSE NULL
 END AS completion_bucket
FROM career_track_student_enrollments e
JOIN career_track_info i
ON i.track_id = e.track_id;
```

Final dataset *with engineered columns*

- ***student_track_id*** *– unique row id using window function (to give every row unique identifier)*
- ***student_id****- every studen't unique id*
- ***track_id****- all three tracks have unique ids to them*
- ***track_name*** *– Name of the track*
- ***date_enrolled*** *– Date on which student enrolled to the respective career track*
- ***track_completed*** *– 1 if date_completed not null, else 0*
- ***days_for_completion*** *– DATEDIFF(date_completed, date_enrolled)*
- ***completion_bucket*** *– CASE logic on days_for_completion (as asked in the project)*

TABLEAU MODELING

- ***Validated*** *data types.*
- ***Build calculated fields:***

  -Single/Multiple Registration -

  IF { FIXED [Student Id] : COUNT([Student Id]) } = 1
  THEN "Single Registration"
  ELSE "Multiple Registration"
  END

  -Track Completed (Yes/No) –

  IF [Track Completed] = 1 THEN 'Yes' else 'No' END

  -Completion rate -

  SUM([Track Completed])/count([career_track_completions])

- ***Built cross-filtered dashboard*** *with filters*

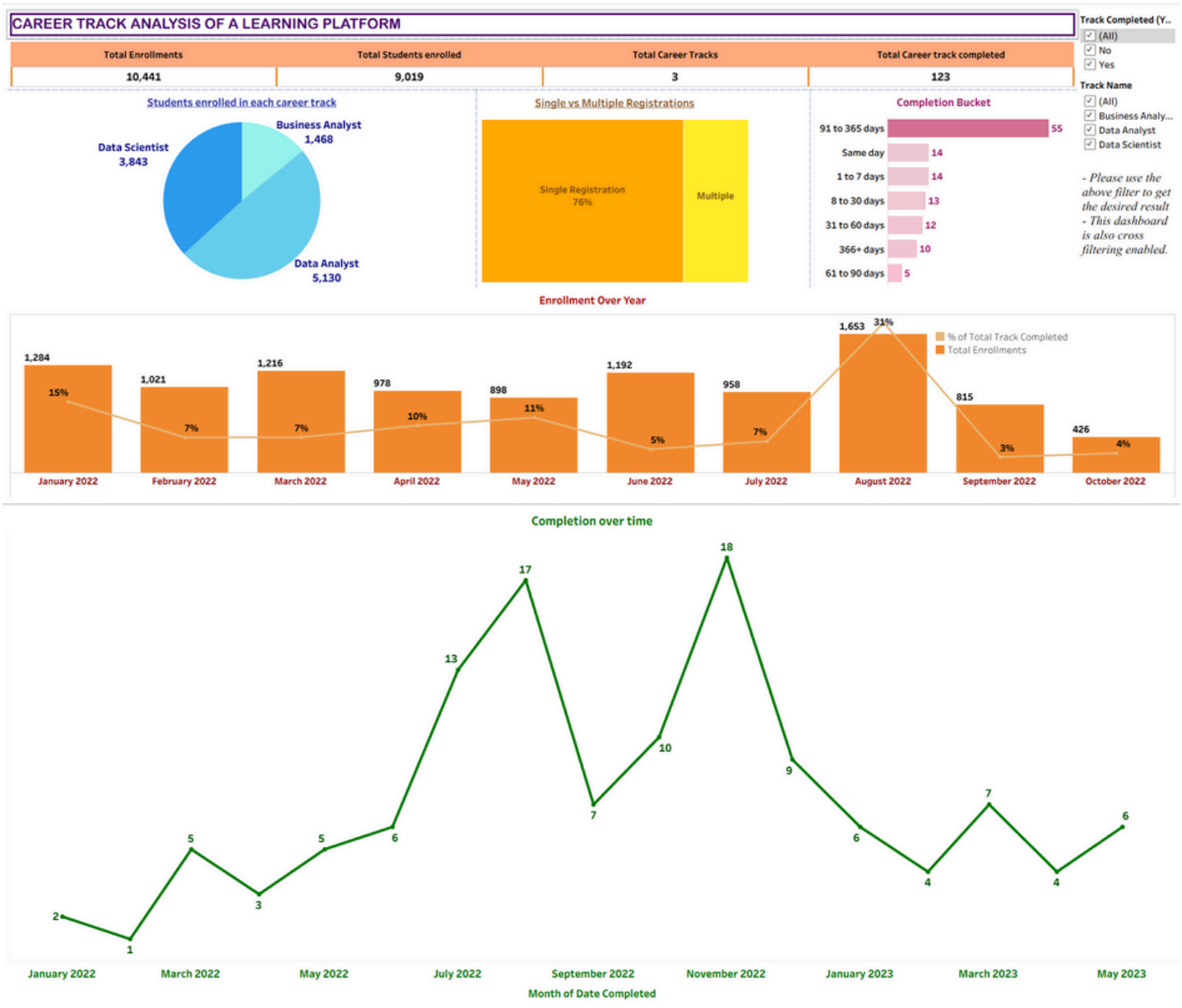

Tableau dashboard/ story link:
https://public.tableau.com/views/CareerTrackAnalysisofalearningplatformwithSQLandTableauProject/Story1?:language=en-GB&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

INSIGHTS & INTERPRETATION

- ***Track Popularity:*** *Data Analyst track had* ***significantly higher enrollments compared to Business Analyst or Data Scientist. Likely reasons*** *include its role as a* ***foundational track for multiple analytics careers and its general popularity among beginners****.*
- ***Single vs Multiple Registration****: ~80% of learners enrolled in only one track.* *This suggests that most learners prefer to* ***focus sequentially rather than in parallel, possibly due to being students or working professionals with limited bandwidth.***
- ***Enrollment Seasonality****: Enrollments* ***peaked around August****,* ***likely*** *aligning with the* ***start of new academic semesters or when professionals plan yearly upskilling****.*
- ***Completion Trends:*** *Completions showed seasonal patterns—****higher around semester starts and winter vacations, when learners likely have more free time to finish courses.***
- ***Completion Duration****: Many learners* ***completed within shorter time frames (under 60 days)****,* ***but a long tail of completions stretched beyond a year, indicating varied commitment levels.***

RECOMMENDATIONS

- *·Promote Multiple Track Pathways:* ***Encourage learners to bundle tracks (e.g., BA + DA) with discounts or guided pathways to increase engagement.***
- *·Seasonal Campaigns: Launch* ***targeted campaigns around August and December to capture natural peaks in learner availability.***
- *·Improve Retention:* ***Provide nudges*** *(email reminders, milestone badges)* ***for those stuck in longer completion timelines (>90 days).***
- *Highlight DA Track as Gateway:* ***Position Data Analyst track*** *as the* ***entry point and guide graduates toward advanced tracks like DS or BA.***

LIMITATIONS & NEXT STEPS

Limitations*:*

- *·Data Context:* ***No demographic information*** *(age, education, occupation), so behavioral patterns are inferred without validation.*
- *·****Completion Definition****: completion* ***ignores partial progress.***
- *·External Factors:* ***Seasonality assumptions*** *(semester start, vacation)* ***are hypotheses and not verified with ground truth.***

Next Steps:

- ***·Gather additional learner attributes for deeper segmentation.***
- ***·Track partial progress data for funnel analysis.***
- ***·Run A/B experiments on campaign timing and multi-track offers.***