

AI-Powered Personalized Learning Assistant - Top Recommended Modules

1. Define Scoring Formula

The recommendation scores for each employee-module pair have been calculated based on the following factors/key variables (**preferred_learning_style**, **time_spent_minutes**, and **score**)

- **Time spent** on modules (higher weight for engaged learners)
- **Score** received on modules (higher weight for high scorers)
- **Learning style match** (binary match to "Kinesthetic" as an example)

2. Normalize Inputs

- Time spent and score were normalized to a scale of 0 to 100
- Learning style match was simplified to binary (match = 1, no match = 0)

3. Apply the Score to the Dataset

A recommendation score was calculated for each employee-module pair using the formula:

- Time weight = 0.3
- Score weight = 0.4
- Learning style match weight = 0.3

Top recommendations were generated for different personas based on this scoring system.

4. Validate and Reflect

Validation was done using personas, and here are the top recommended modules for each persona:

1. Fast Finisher:

- E0063: Module 16, Score = 51.09
- E0165: Module 16, Score = 50.54
- E0044: Module 22, Score = 49.39

2. Deep Diver:

- E0196: Module 5, Score = 69.65
- E0171: Module 14, Score = 68.70
- E0151: Module 14, Score = 68.70

3. Passive Explorer:

No recommendations were made due to missing data for this persona (likely due to absence of scores).

	employee_id	training_module_id	module_name	recommendation_score
0	E0040	M4	Module 4	5.846218
1	E0012	M18	Module 18	9.123529
2	E0148	M2	Module 2	28.487395
3	E0098	M21	Module 21	7.863025
4	E0156	M18	Module 18	51.028571
...
2995	E0078	M3	Module 3	8.067227
2996	E0037	M12	Module 12	12.652941
2997	E0090	M17	Module 17	11.092437
2998	E0141	M11	Module 11	10.588235
2999	E0142	M12	Module 12	12.100840

[3000 rows x 4 columns]

```
{'Fast Finisher':   employee_id training_module_id module_name recommendation_score
1366   E0063           M16  Module 16      51.092437
416    E0165           M16  Module 16      50.544538
2605   E0044           M22  Module 22      49.392437, 'Deep Diver':   employee_id training_module_id module_name recommendation_score
1312   E0196           M5   Module 5       69.647899
1430   E0171           M14  Module 14      68.700000
2344   E0151           M14  Module 14      68.695798, 'Passive Explorer': Empty DataFrame
Columns: [employee_id, training_module_id, module_name, recommendation_score]
Index: []}
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Figure 1

