Questions

What is the expected change in the response when changing the TH?
changing the threshold (TH) affects the selection of the rate_model score, which in turn influences the interest rate determined:

Increasing the TH: This could cause the selection of a rate_model score that is closer to the higher threshold, possibly resulting in a higher interest rate if the higher TH correlates with higher rate_model scores that lead to increased rates.

Decreasing the TH: On the other hand, lowering the threshold may result in choosing a lower rate_model score, which could lead to a reduced interest rate, provided that lower rate_model scores are associated with lower rates.

What can cause an error in an application?

Data Entry Errors: Incorrect or incomplete applicant information (like incorrect CreditFeatures data, misspelled names, wrong numerical inputs).
API Failures: Issues with the credit bureau API could lead to missing or incorrect CreditFeatures, affecting the subsequent calculations.
Model Failures: Bugs or failures in the rate_model or risk_model could produce erroneous scores or crash.
System Issues: Hardware failures, software crashes, or network issues can disrupt the application process.
Validation Failures: Inadequate validation rules might allow invalid data to enter the system, resulting in processing errors.

Why is the DTI restriction applied at the end of the flow/ after the pricing table? 1- By first determining creditworthiness and suitable interest rates based on credit features and risk evaluations, the process ensures all financial aspects are considered before assessing affordability.
2- Evaluating DTI at the end streamlines the process, avoiding repeated recalculations that would be necessary if financial or loan terms change during the assessment.
3- Placing the DTI check last serves as a final safeguard to ensure that borrowers are not approved for loans they cannot afford, despite qualifying based on credit risk and pricing.

Explain if there's an issue in the following response outputs - Make sure to refer to each application as a stand alone:

App #1

Offers	Amount	Rate	Decision	Risk Factor	DTI	Pricing Score	Risk Score

1	10,000	13	Approved	0	0.52	0.26	0.12
2	11,000	-1	Declined	0	0.22	0.82	0.20
3	12,000	12	Declined	0	0.61	0.43	0.24

App #2

Offers	**Amount**	**Rate**	**Decision**	**Risk Factor**	**DTI**	**Pricing Score**	**Risk Score**
1	7,000	10	Approved	-1	0.09	-0.82	0.82
2	8,000	-1	Declined	+5	0.11	0.91	-0.12
3	9,000	14	Approved	0	0.33	0.68	0.31

App #1:

Offer 1:the DTI is greater than 0.5, so it must be declined , not approved. So its not correct

Offer 2: The rate is -1 which means no valid rate could be determined, and thus it is correctly decreased.
Offer 3: Despite having a reasonable rate of 12% and a pricing score within the range, it is declining, because of the DTI being 0.61, which violates the DTI < 0.5 rule. This is a correct application of the rules. App #2:

Offer 2: The rate is -1 and it is declining, which is consistent with the rules. The positive risk factor +5 here does not align with typical input formats and suggests possible data entry or processing error.
Offer 3: This is approved, and all scores and factors align properly with the final decision.
Bonus:

App #3
App #2 and App #3 are the same application, but app #2 passed through a policy with threshold of 0.01, and App #3 passed through a policy with a threshold of 0.05.
Does App #3 behave as expected or are there any issues with the results in the response?

Offers	**Amount**	**Rate**	**Decision**	**Risk Factor**	**DTI**	**Pricing Score**	**Risk Score**
1	7,000	10	Approved	-1	0.09	-0.99	0.91
2	8,000	10	Approved	0	0.22	-0.88	0.35

3	9,000	10	Approved	0	0.27	-0.81	0.30

App #3:

- All offers have an interest rate of 10% and are approved.
- The DTI and pricing scores are within acceptable limits.
- Changing the TH from 0.01 in App #2 to 0.05 in App #3 does not seem to affect the final interest rates significantly, suggesting that the offers may be robust against minor threshold variations, or that the risk model and rate model outputs are clustered around these thresholds.

Part 2 - Python

1. Write a Python program to find the list of words that are longer than n from a given string. String for example: 'The quick brown fox jumps over the lazy dog'

ANSWERED IN A PYTHON FILE

2. Write a Python function that checks whether a passed string from a list is palindrome or not.

   Words for example: ['sheep', 'xenex', 'cow']

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