**Topic: Loan Approval Risk Simulation for an Aging Population**

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**Topic**: Loan Approval Risk Simulation for an Aging Population  
 In this project, we will simulate long-term loan approval and risk for an aging population over 50 years. The objective of this project is to estimate how the profitability of lending decisions shifts as borrower demographics evolve, primarily with the increasing average age. We will utilize Monte Carlo methods to model borrower cash flows, behavior, and default probability under various loan approval thresholds.  
 Additionally, we plan to implement machine learning to predict borrower default risk based on factors such as age, income, and health status. By differentiating multiple risk thresholds and policy strategies, we aim to identify which lending approach maximizes long-term expected profit while effectively managing risk in an aging society.  
  
**Reference**

OpenAI.&nbsp; ChatGPT: Language Model (June 2025 Version). OpenAI, 2025.