

TEEGALA KRISHNA REDDY ENGINEERING COLLEGE

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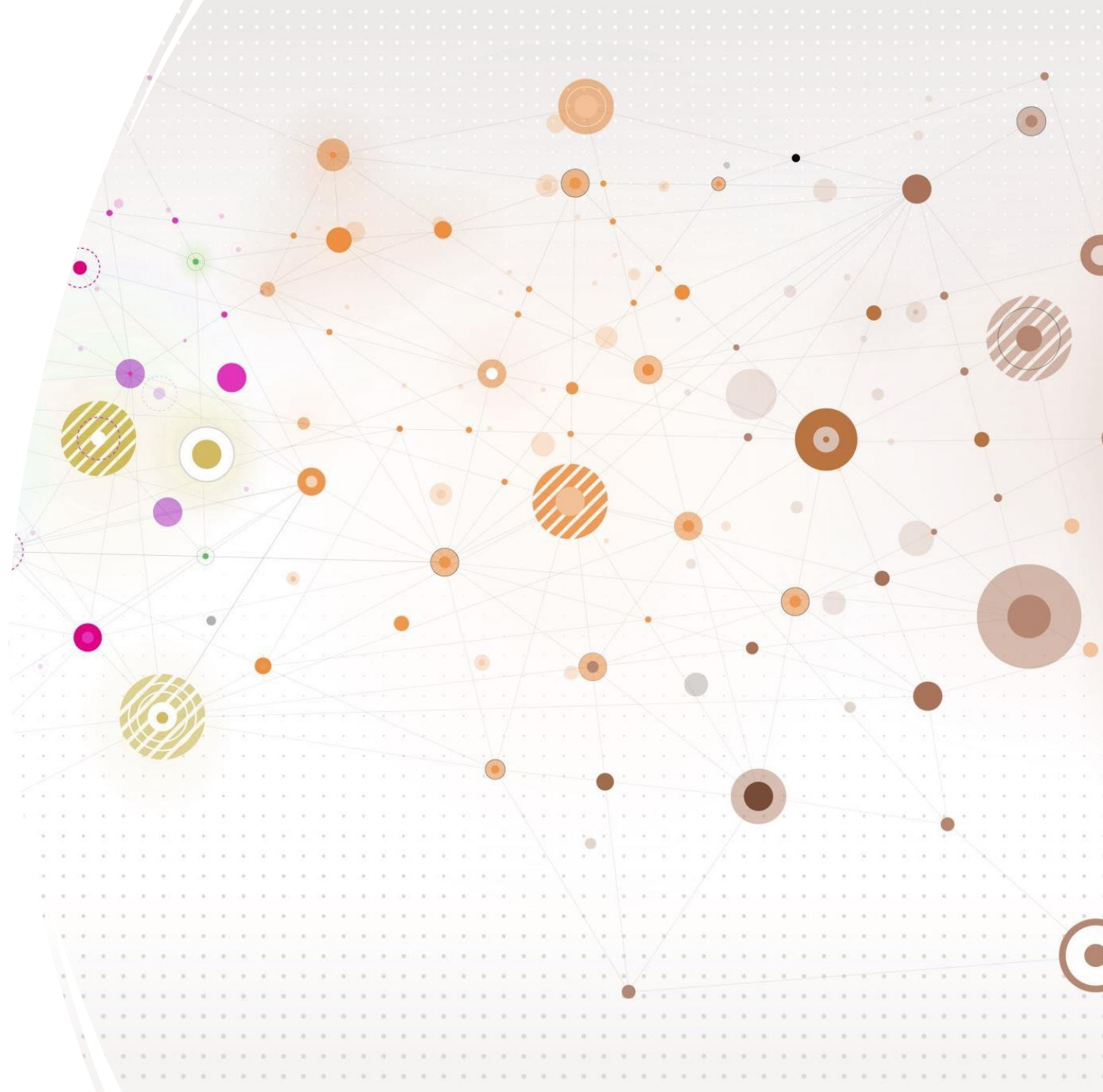
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PERSONAL FINANCE CHARBOT: INTELLIGENT GUIDANCE FOR SAVINGS, TAXES AND INVESTMENT



INTRODUCTION

- Personal finance plays a crucial role in ensuring financial stability and achieving long-term goals. However, many individuals struggle with managing savings, understanding taxation, and making smart investment decisions due to a lack of knowledge or proper guidance. To address this challenge, an AI-powered personal finance chatbot can serve as an intelligent assistant that provides real-time, personalized guidance



ARCHITECTURE

- User: id, auth_provider, id, country/state, currency, risk_score, goals[], consent_flags.
- AccountLink: user_id, provider (bank/broker), scope, token_ref (vault pointer).
- Budget: user_id, period, categories[], limits, actuals.
- TaxProfile: user_id, regime, deductions, dependents.
- TaxCalc: tax_year, jurisdiction, slabs[], surcharges, credits.
- Goal: user_id, target_amount, horizon, priority, funding_plan (SIP amt, freq).
- Recommendation: goal_id, model_version, allocations[], rationale, constraints.
- KnowledgeDoc: id, source, jurisdiction, embeddings.
- 2) Typical Request Flow (sequence)
- User asks: "How much should I invest monthly to reach ₹10L in 3 years?"
- NLU → intent: goal-planning, slots: target, horizon, currency.
- Orchestrator pulls user risk/profile → Recommender runs SIP math + allocation.
- Tax Engine estimates post-tax return assumptions (optional).
- KB retrieval pulls short explanations for SIP and risk notes.
- LLM composes answer + tables; Compliance Filter adds disclaimer & redacts sensitive bits.
- Response returned; Analytics logs anonymized metrics.
- 3) Security & Compliance
- End-to-end TLS, token binding; Vaulted storage for API tokens.
- PII minimization; field-level encryption (age, PAN/SSN hashes only if absolutely needed).
- Consent ledger for data usage; data residency by region.
- Clear education vs. advice boundary; jurisdiction-aware content; audit trails for every recommendation.
- 4) Scalability & Reliability
- Stateless services with autoscaling; cached KB hits; circuit breakers on external APIs.
- Canary deployments; blue-green for model/version rollouts.
- 5) Extensions
- Open Banking aggregators for read-only balances/spend categorization.
- Document scanner (Form-16/1099) with on-device OCR, redaction.
- Multilingual NLU/responses; voice interface.
- Human-in-the-loop escalation to a financial advisor (with sanitized transcript).

FUTURE SCOPE



AI-Powered Personalization - More accurate financial advice by analyzing spending patterns, income levels, and goals in real-time.



Integration with Banking & UPI - Direct tracking of expenses, auto-budgeting, and instant payment reminders.



Voice & Multilingual Support - Conversational guidance in regional languages and voice-enabled interaction.



Advanced Investment Insights - Integration with stock market, mutual funds, and crypto platforms for tailored portfolio suggestions.



Regulatory & Tax Updates - Automatic adaptation to new tax rules, financial policies, and compliance requirements.

SOLUTION

A Personal Finance Chatbot can solve this problem by acting as a virtual financial guide.

It uses AI and NLP to interact with users in simple language.

Provides personalized savings plans based on income and expenses. Suggests tax-saving options and explains deductions in an easy way.

Recommends investment strategies (like SIPs, mutual funds, FD, etc.) depending on the user's goals and risk profile.

Works 24/7 as an affordable and accessible alternative to human advisors.

CONCLUSION

- The Personal Finance Chatbot offers an intelligent and accessible way to manage savings, taxes, and investments. By providing personalized guidance, it simplifies complex financial decisions and promotes better money management. This solution not only enhances financial literacy but also helps individuals achieve their financial goals efficiently and affordably.



THANK YOU