

Financial Freedom

Optimizing personal finances





Project Summary

- The financial calculator provides advice for free that is traditionally provided by a financial advisor for a significant fee.
- This financial calculator provides advice on how to allocate capital across:
 - Investments (401-K)
 - Debt (Credit Cards)
- The calculator, over a five year period, provides the following outputs:
 - Simplified Net Worth
 - Year-End Debt
 - Investing Capital
 - 401-K Balance
 - Effective Tax Rate
 - Portfolio Mix Recommendation
 - Monthly Cost of Debt

Approach

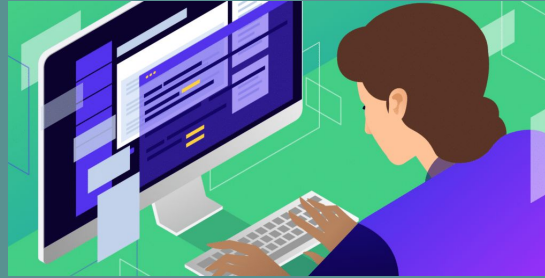
Front-End

— Inputs
— Outputs

Algorithm/Calculator

Visualizations/Projections

Streamlit





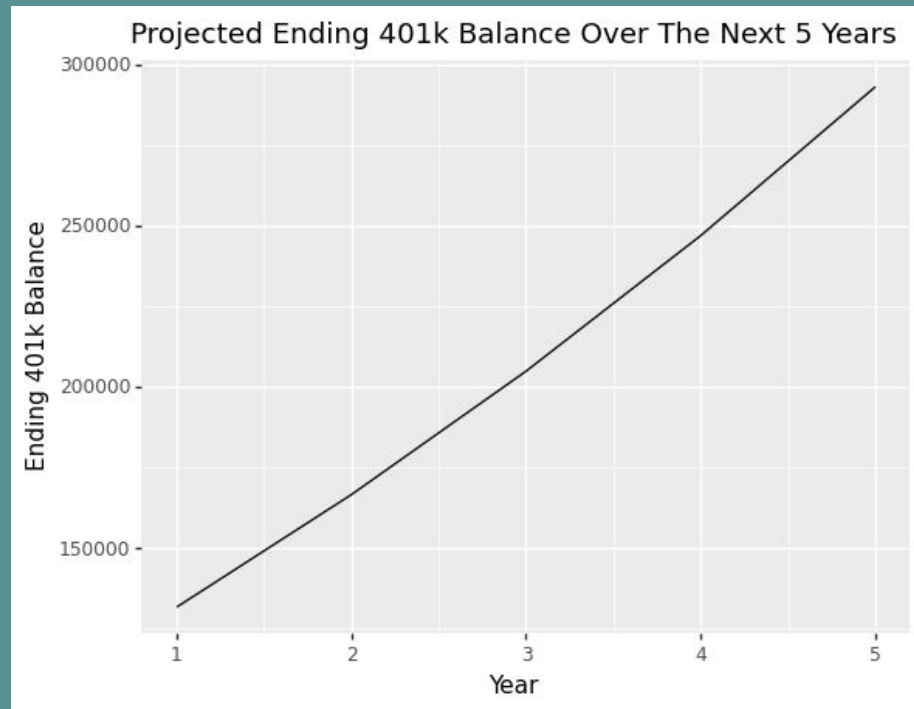
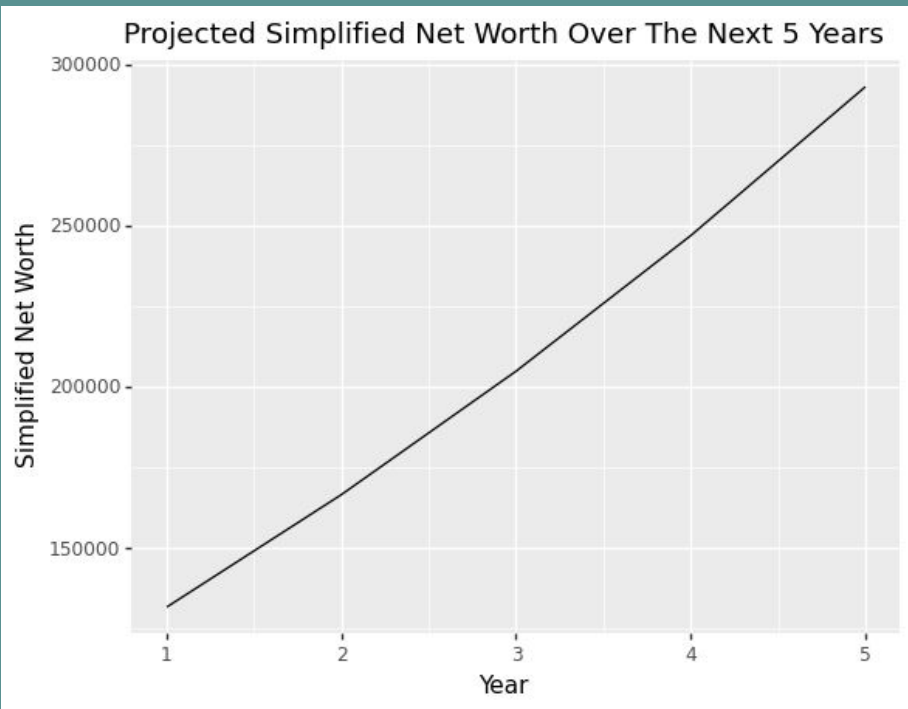
Methodology

- Expected portfolio return and cost of debt are used to determine capital allocation
- Historical Equity and Stock Market Returns are used to calculate expected portfolio returns
- Salary and 2023 tax brackets are used to determine the tax liability
- 401-K contributions reduce the taxable income. The impact of increased 401-K contributions on the tax liability are accounted for Effective Tax Rate and Simplified Net Worth calculations
- Cost of debt (interest) are also accounted for in the calculations
- Age is used to determine the individual's risk tolerance, which is used to recommend the ideal portfolio mix.
- The calculator provides the individual's financial outcomes both for with and without advice



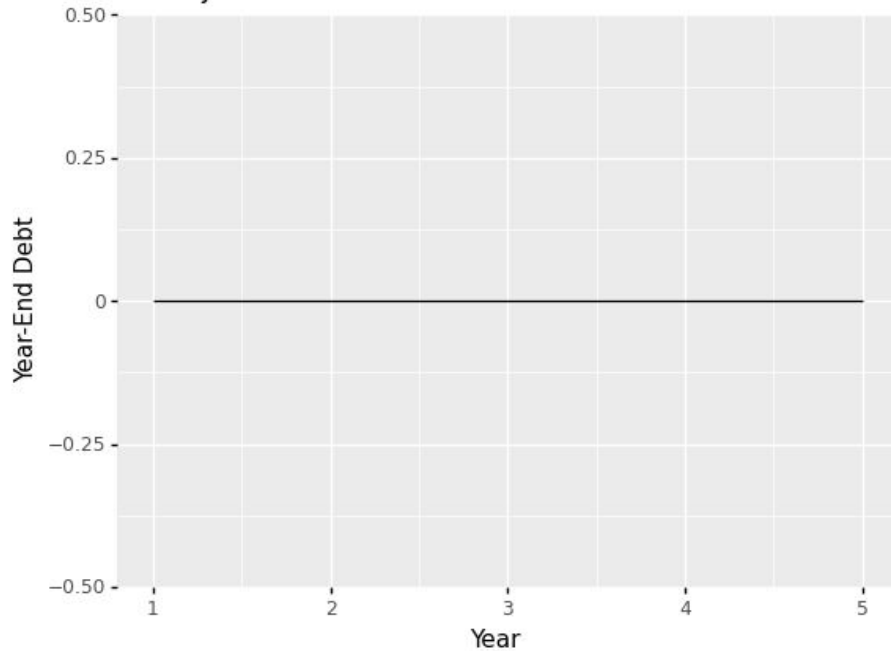
Demo

Example Projections

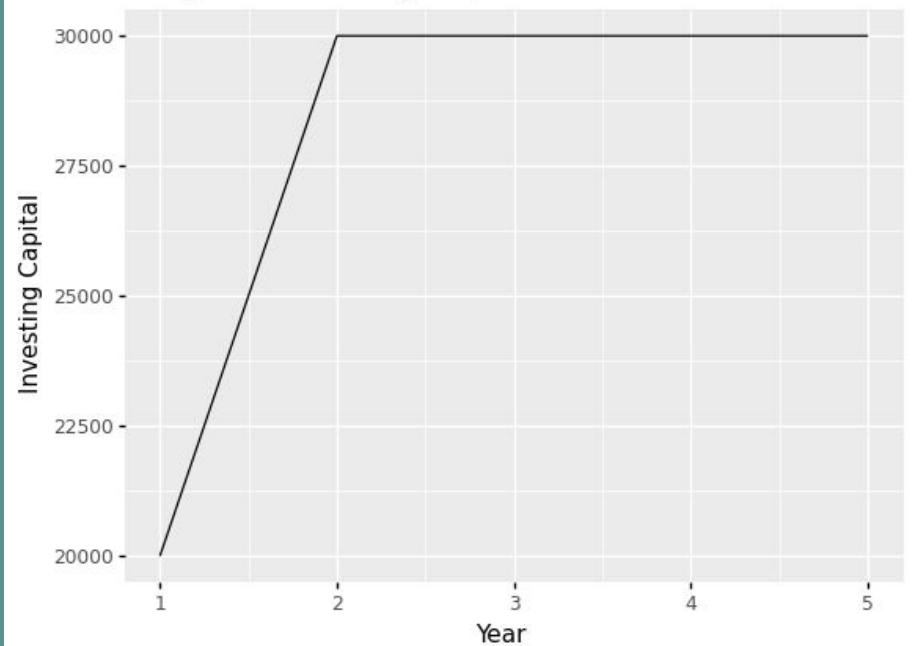


Example Projections (cont.)

Projected Year-End Debt Over The Next 5 Years



Projected Investing Capital Over The Next 5 Years



Results & Conclusion

- The Financial calculator was a success on back end and has room for additions
- The front end, although basic, worked as intended

Your Current Financials

Monthly Cost of Debt: \$812.5

Without Advice

Yearly Ending Balance: \$116545.0

Current Debt: \$10000.0

Effective Tax Rate: 0.5%

Monthly Cost of Debt: \$0.0

With Advice

We recommend that you:

- Invest \$20000.0 in your 401k
- Pay off \$10000.0 credit card debt
- Currently you have a portfolio mix of Stocks: 20%, Bonds: 80% and we recommend you move to a portfolio mix of Stocks: 100%, Bonds: 0%

Yearly Ending Balance: \$131748.0

Final Debt: \$0

Effective Tax Rate: 18.3%

Monthly Cost of Debt: \$0.0



Next Steps

Potential Improvements:

- Savings Interest (Simple/Compound) and IRAs
- Taxes (Different Federal Income Brackets and State Income Tax rates)
- Advice for Student and Auto loans
- Mortgage and Rent considerations
- Cost of living and spending habit recommendations
- Healthcare and Insurance

Use Cases:

- Anyone looking to optimize/adjust their finances
- Low-Income Families
- Recent College Graduates
- Financial Institutions (for both internal and client-facing purposes)