## Description

Our project will be a Personal Inflation Rate calculator, that will be made using either RShiny or Python or combination thereof.

The calculator will create a personal inflation rate that is calculated after taking into account inputs from the user regarding their spending habits and income. In essence, we will be taking data from the Bureau of Labor Statistics which is used to calculate the national inflation rate (among other things) to calculate a more personalized inflation rate. Users can then toy with the tool as much as they would like, each time adjusting for changes made in the inputs and spitting out a new calculation.

Another aim of the project is to help individuals apply this to their own lives. There will be within the interface, a comparison between their personal inflation rate and the national inflation rate along with regional and other inflation rates that are regularly calculated. We also help to make year to year comparisons available as well. In addition, we want to give users the ability and option to input information about their own finances, such as bank account and investment balances as well as debt balances (credit card, mortgage) and see how changes in inflation, both traditional inflation rates and their newly calculated personal inflation rates affect their buying power and growth (and or decay) in their accounts. We also would like to create a net worth calculator feature as well.

Finally, we aim to create a project that above all else, is easy to understand. As such, we want to give users the ability to learn more about how inflation works, what it means and make it much more intuitive and less scary. Something that we feel is being left out of the marketplace.

## Skills & Data List

This should be a thorough, bullet-point list of the things and skills you'll need to be successful. Below are examples.

· Data needed:

* Data from CPI, taken from R package with scraper or using API (Nick, Rodrigo)
  + blscrapeR package by keberwein
* 3rd party inflation trends data (Ian, Travis)
* Data from surveying students or friends and family (All)

· Skills needed:

* Application development (All)
* Data analysis (Ian, Nick, Travis)
* Web development (All)
* RShiny (Nick, Ian)
* Python (All)
* Data cleaning (Travis, Ian, Nick)

## Market/Literature Review

You will need at least 5 comparable websites or peer-reviewed papers (for data analysis). For each, discuss what it is, how it compares to your project, and how your project is different.

**1.** [**US Inflation Calculator**](https://www.usinflationcalculator.com/)

This is comparable to what we are looking to do because like our project, this website is a calculator in which people are able to calculate what an amount of money in a year between 1913 would be, adjusting for inflation to another year, also between 1913 and present day.

What our project aims to do is something a bit more complicated. We will not be doing an inflation calculator as this one does, but will taking a greater number of inputs from users, explaining to them along the way what is happening and providing explanations when need be and extrapolating the data that is generated to the calculator to real life applications for the user like mentioned in the description.

**2.** [**UMass Boston - Personal Inflation Calculator**](https://www.umb.edu/editor_uploads/calculator/personal_inflation_calculator.html)

This is likely the most comparable calculator that we were able to find. It looks to do much of the same that we do, creating a personal inflation rate based upon the inputs that are given to it by users.

However, there are two ways in which we hope to differentiate this calculator from the one our project will be creating. 1. We will be creating something that is more intuitive and aesthetically pleasing and 2. Using the personal inflation rate that is calculated by the tool to extrapolate it to practical applications such as how their personal inflation rate differs from the inflation rates that are formally calculated by the Consumer Price Index (CPI) and what some of the specific terms that are used mean in context and with examples where applicable.

This example seems to be an excellent tool that has suffered from being very in-depth but not easy to navigate as a user and does not give any real world applications. Our project aims to remedy this defect in creating our own calculator that has those aforementioned tools.

**3.** [**Generic Inflation Calculator - Forward/Backward Flat rates**](https://www.calculator.net/inflation-calculator.html)

This calculator is generic and easy to look at, so we can draw from its convenient user interface as part of our implementation in our own version. Large, simple affordances and bold text really highlight the important information on the page, something the previous PIC does not have.

Ours will be different in that there will be many more user inputs to consider and factor into our design. This is achieved through the personalization of inputs, as opposed to the simple value of whatever dollar amount the user decides. We will also not be factoring in the forward and backward flat rate calculations, since these are not as relevant for our target users. Ultimately, ours will be more user friendly, and won’t include information that the user did not ask for. The wall of text that follows the calculator in this page is also something that will not be implemented in our final design. However, historical inflation rates will likely be included in ours.

**4.** [**Personal Inflation Rate (candaceshira.com)**](http://www.candaceshira.com/learning_center/calculators/personal_inflation_rate)

This calculator, found on a financial advisor’s website, has several design features that make it much more user friendly in comparison to the other calculators we looked at. Very minimal text which minimizes the amount of clutter visible. No immediate badgering of large and terrifying percentages. An easy to use slider or one can opt for typing in the dollar amount instead. And a results screen, no live changes like the UMB calculator.

What we will be doing is more detailed than this. Similar to the other calculators, there are only a few generic inputs the user has access to. We would like to possibly expand and add more inputs to help narrow costs and inflation rate differences on a personalized level. And while the lack of information on this calculator is a major factor as to why their user interface is simple and clutter free, there needs to be a lot more information. This reports on barely half the amount of information as the UMB calculator. Our calculator will try to report on everything it can, giving detailed explanations, all with a simple and user friendly interface.

**5.** [**myCPI - Federal Reserve Bank of Atlanta**](https://www.atlantafed.org/research/inflationproject/mycpi.aspx)

This website is a sort of calculator and goes about achieving their goal in a way similar to the way that we would like to. Namely, using user inputs to create a calculation. Here, it seems to have the potential to create a CPI based upon people’s typical spending habits; however, it generalizes the user based upon identity markers of the user.

Though this could create an accurate personal inflation rate, this is too much of a generalization. Our project will be different as it will allow users to play with the tool in a more interactive way, being able to see each thing that they have selected and select and deselect items with ease. Furthermore, our project will be more expansive. Though myCPI does compare their calculated personal inflation rate with the national inflation rate and others, the inflation rate that our tool will calculate can be used in other ways, extrapolating it to other relevant information for users.