Context:

As part of your day to day, you will be required to evaluate how new factors affects current economics simulation. In this challenge, your task is to evaluate the impact of a new legislation on a simulation of how well prepared people are for retirement. Here are the relevant details:

Legislation: https://smartasset.com/retirement/savers-match-secure-2-0-act, new Saver's Match (please, **ignore** the effect of removing the Saver's Credit). **Instead** of 50% of $2000 being the maximum benefit, **consider it being 50% of $10000**.

Input File Columns (you can **download the file here**):

- **initial_age**: the age the person had when this the simulation started
- **weight**: How many persons of the population this head of household represent
- **income**: The annual gross income of the individual.
- **family_kind**: 1 = Husband-Wife, 2 = Male-Led, 3 = Female-Led
- **race**: 1= White, 2 = Black, 3 = Hispanic, 4 = Other
- **marital_status** : 1 = Married, 2 = Widowed, 3 = Divorced, 4 = Separated, 5 = Never married
- **annual_contribution** (as % of income): What % of the current income the individuals contribute to retirement accounts
- **accumulated_capital**: At this person's death, the resulting balance considering all its incomes and expenses, in 2020 US dollars. If it is greater than or equal zero, it means this person was able to afford his retirement, if it is lower than zero, it means

Important things to consider:

- Every line in this file represents a **head of household,** and heads of households that are not married have to file taxes accordingly.

Deliverables:

- A new file called **new_scenario.csv** that will have and additional column called **new_accumulated_capital**, with will be calculated as:
    - accumulated_capital + additional retirement savings due to Saver's Match
- The function should generate 2 plots:
    - **Weighted Average Retirement Savings Shortfall by Race and Age Cohort**. Age Cohorts defined as the following intervals: [35,39), [40,44), 45,49), [50,54), [55,59),[60,64)
    - Impact in **percentage points** of the new scenario into the Retirement Readiness Rating, per Age Cohort.
- The code you used (you can provide it as a link to a repository if you want, but make it sure that the link is public)

Additional Notes:

- The phase-out ranges of the Saver's Match should be considered.
- Consider the retirement age of all people to be 65
- Consider that all eligible people (given the eligibility condition for these programs) will benefit and use the program from the initial age of the simulation until the retirement age and only during this period.
- Consider inflation (nominal) to be 4.4% per year
- Consider the start year of the simulation results you have got is 2020
- Consider the current year (start of simulation) income will be readjusted by inflation every year
- The Retirement Readiness Rating is defined as:
    - Number of persons who were able to afford its retirement / Total number of persons
- The Retirement Savings Shortfall is defined as:
    - Sum of the accumulate of all the persons who had deficits / Total number of persons
- You can use any library or additional resource you want
- If you need to make additional assumptions, do it and state it clearly in your deliverable.

Please, send your deliverables on this **FORM**