Pseudo code/ Calculator Logic Flow (E2E)

- Request comes from cost api:
  - Read the cost api request fields
    - Pass the following to benefit api: benefitProductType, membershipID, planIdentifier, serviceInfo→{providerType code, placeOfService code, providerSpecialty code, code, type}
    - Additional fields to check: provider info array (for INN/OON check), provider tier (for tiered benefits)
  - Review response contract internally and externally
- Parallel calls:
  - Call the spanner db to retrieve provider rates-- ETL
  - Check the provider info array to check INN/ONN
  - Call the benefit api and accums api
    - Align on contract with benefit api and accums api-- since this is GET, what is the expected output? And what fields do we need to pass?

- **Run logic to retrieve the right benefit:**
  - Check how many benefit types were returned
  - If more than one:
  - **FILTERS**:
  - Next, filter out all **INN/OON** benefits (based on whether it is INN or ONN- checked in previous step)
    - To do so, check INN or OON by looking up the provider info array in cost api request
    - To match with the appropriate benefits, check **networkCategory value**
  - If there are more than 1 benefit types still remaining, then identify any filters in the input coming from cost api

  - Check **provider designation**:
    - Currently, we can only check for **PCPs:**
      - Check **providerSpecialty** code in the cost api request. If it matches to the PCP specialty code table, provider is PCP (codes= **10101, 10201, 10301, 10401**)

        - Next, check if the benefit object is for PCP. To check this, look up **serviceProvider" → "providerDesignation" field. If=PCP,** then benefit object is for PCP
        - Pick the benefits that match this condition and filter out all other benefits
        - **Error message**: If specialty code=PCP, and no benefit objects match, throw an error and STOP
    - **Conditions to skip logic:**
        - If provider specialty field is empty in the cost api request, then skip this step
        - Or if provider specialty is NOT PCP, then skip this step
    - Provision for smart compare filter

- Check **benefit tiering**
    - Check the **provider tier** in cost api request
    - Provider Tier (Coming from CostAPI Request) and BenefitTierName (Coming from Benefit Response) is same.
    - Next, check the **benefitTierName** field in the benefit object to match with the appropriate provider tier
    - The networkIndicatorCode field in the relatedAccumulator will have an character in the value, indicating the tier. Example, for non-tiered benefits, assume networkIndicatorCode ='I' (indicating INN). However, for a tiered benefit plan with benefitTierName=1, networkIndicatorCode ='I1'
    - Pick the benefits that match this condition and filter out all other benefits
    - **For tiered benefits, always check the 'IsInitialBenefit' field. If = Y, then continue. If = N, then stop (alternate benefit scenario)**
        - If we get maxCoverageAmount then it is OUT OF SCOPE
    - **Error message**: If provider tier is present, and no benefit objects match the tier, throw an error and STOP
    - **Conditions to skip Logic:**
        - If provider tier field in the cost api request is missing, then skip this step

- If there are **more than 1 benefit types still remaining**:
    - Then run calculator service for all eligible benefits

- **Calculator Service:**

    - Parse the related accums and retrieve the corresponding accumulators from the accums api for calculator service
    -
    - **Error message:** If there is mismatch between the relatedAccumulator and Accumulator api response, STOP calculations and respond with an error
    - Parse the benefit type objects for logging- check if these are minute clinics or PCPs
    - Return the benefit with the highest cost share
- Respond to cost api based on the contract
- Log the metadata of the benefit returned

Additional Validation:

- *When both the provider tier (Cost API request) and benefit tier (Benefit API response) are available, and a specialty code (PCP) is provided, the benefit should be selected only if the benefit tier and PCP match.*
- If only the benefit tier is provided, check using the benefit tier.
- If only the specialty code (PCP) is provided, check using the PCP.

Calculator flowchart:

No Lucidchart macro data was provided.