CPRO 1102: Assignment #1 Documentation

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Goal:

To create a web-based Income Tax calculator to show the current income tax liability given taxable income, deductions, and final tax credits.

Interface/functionality:

Mandatory field for entering taxable income with optional fields for deductions and tax credits. Once the fillable fields have been entered, the calculate button will populate the Income tax owed field with any tax liabilities and will create a history/summary of the inputs. The reset button will prompt the user asking if they would like to clear the inputs, "OK" will clear all input fields and "Cancel" will let the input fields with the current given data; once an option is selected, a second prompt will ask to clear the history, selecting "OK" will clear history and selecting "Cancel" will keep the history.

Functions

calculate function:

- Converts null optional fields to integer "0".
- Computes total tax based off the following tax brackets:
  - 1st backet: 0% on the first $10,000
  - 2nd bracket: 10% on amounts in the range of $10,001 to $40,000
  - 3rd bracket: 20% on amounts in the range of $40,001 to $100,000
  - 4th bracket: 30% on amounts over $100,001
- Code is designed to calculate at 10% increments as income level checks are passed as True.
  - Example: $60,000 of taxable income
    - Passes first bracket ($10k and under) so 0% is applied
    - Passes second bracket, $10k is subtracted from income (for the first bracket) and 10% is taxed on the remaining income ($50,000*0.1=$5,000). This is added to the total tax value.
    - Passes the third bracket, $40k is subtracted from income (for the first two brackets) and 10% is taxed on the remaining income ($20,000*0.1=$2,000). This is added to the total tax value.

- The fourth bracket fails so the value of the total tax ($5,000+$2,000=$7,000) does not change.
- History of the inputs is stored

drawline function:

- Adds a separator line to the HTML file for spacing in the history

saveHist function:

- Creates and applies a new article element in the HTML for the history.

storeHist function:

- Saves the HTML data of the history element into local storage so that it can be accessed later.

processEntry function:

- Gets inputs for the taxable income, deductions, and tax credits fields.
- Checks for non-number inputs and displays an error message.
- Checks to make sure the income field has inputs.
- Uses the calculate function with the parameters from the user inputs.

deleteHistory function:

- Clears the history input area and the HTML tag

clearAlert function:

- When interacting with the Reset button, this function will prompt for the clearing of the input fields first and then prompt for the clearing of the history second.
- Utilizes the deleteHistory function and the clearTxt function.

clearTxt function:

- Sets all fields to a value of "".

btnSetup function:

- Setup for the buttons on the page

Test Cases:

1. Testing the example of $60,000 taxable income from the *calculate* function explanation:

Result: Tax owing will be $7,000, this is the same as the calculations provided in the example.

2. Testing non-number inputs:

Result: Error message will appear and no calculations will be run.

3. Testing negative income:

Result: $0 tax owing, cannot owe tax on negative amounts.

4. Testing deductions higher than taxable income:

Result: $0 tax owing, cannot have negative tax owing since refunds only come from paid income tax prior to tax calculations; deductions can only reduce net income to 0.

5. Testing multiple entries to see history layout:

Result: Good spacing on history and all inputs are accounted for.

Note: the styling has been updated after taking the testing photos