Here’s a **TypeScript function** for an **Emergency Fund Calculator**. This tool helps users calculate how much they should save for an emergency fund based on their monthly expenses, income stability, and other financial factors. It will also allow for custom inputs like the number of months to cover, the user's risk tolerance, and their current savings, giving users an idea of how much more they need to save.

**Emergency Fund Calculator Function**

*export* type EmergencyFundResult = {

recommendedFund: number; *// The recommended emergency fund amount*

remainingToSave: number; *// How much more the user needs to save*

monthsCoveredByCurrentSavings: number; *// How many months of expenses are covered by current savings*

};

*export* function emergencyFundCalculator(

*essentialExpenses*: number, *// Monthly essential expenses (e.g., rent, groceries, utilities)*

*nonEssentialExpenses*: number, *// Monthly non-essential expenses (e.g., entertainment, dining out)*

*incomeStability*: "Stable" | "Unstable", *// Job or income stability: Stable or Unstable*

*riskTolerance*: "Low" | "Moderate" | "High", *// User's risk tolerance level*

*currentSavings*: number, *// Current amount of savings set aside*

*monthsToCover*: number = 6 *// The number of months they want to cover with their emergency fund (default: 6)*

): EmergencyFundResult {

*// Define multipliers for different risk tolerance levels and income stability*

const riskMultiplierMap = {

Low: 1.5, *// Higher emergency fund for low-risk tolerance*

Moderate: 1.2,

High: 1.0, *// Lower emergency fund for high-risk tolerance*

};

const stabilityMultiplierMap = {

Stable: 1.0, *// For stable jobs or income, recommend the base level of months to cover*

Unstable: 1.5, *// For unstable jobs (freelancers, seasonal work), recommend more months of coverage*

};

*// Calculate the monthly total expenses (essential + non-essential)*

const totalMonthlyExpenses = *essentialExpenses* + *nonEssentialExpenses*;

*// Determine the final multiplier based on risk tolerance and income stability*

const finalMultiplier =

riskMultiplierMap[*riskTolerance*] \* stabilityMultiplierMap[*incomeStability*];

*// Calculate the recommended emergency fund amount*

const recommendedFund = totalMonthlyExpenses \* *monthsToCover* \* finalMultiplier;

*// Calculate how many months the current savings will cover*

const monthsCoveredByCurrentSavings = *currentSavings* / totalMonthlyExpenses;

*// Calculate how much more the user needs to save*

const remainingToSave = Math.max(0, recommendedFund - *currentSavings*);

*// Return the result*

*return* {

recommendedFund: +recommendedFund.toFixed(2),

remainingToSave: +remainingToSave.toFixed(2),

monthsCoveredByCurrentSavings: +monthsCoveredByCurrentSavings.toFixed(2),

};

}

**Input Fields:**

* **essentialExpenses**: The user's monthly essential expenses, such as rent, groceries, utilities, and other fixed costs.
* **nonEssentialExpenses**: The user's monthly non-essential expenses, like entertainment, dining out, and other flexible costs.
* **incomeStability**: Whether the user’s job or income is stable ("Stable") or unstable ("Unstable", e.g., freelancer, contract worker).
* **riskTolerance**: The user's tolerance for financial risk—"Low", "Moderate", or "High". This affects how large the emergency fund should be.
* **currentSavings**: The amount the user already has saved for emergencies.
* **monthsToCover**: The number of months the user wants to cover with their emergency fund. The default is 6 months.

**Output Fields (JSON):**

* **recommendedFund**: The total amount of money the user should have in their emergency fund based on the inputs.
* **remainingToSave**: The amount of money the user still needs to save to reach the recommended emergency fund.
* **monthsCoveredByCurrentSavings**: How many months of expenses the current savings will cover.

**Example Call:**

const emergencyFund = emergencyFundCalculator(

2000, *// Monthly essential expenses (€2,000)*

500, *// Monthly non-essential expenses (€500)*

"Unstable", *// Income stability (unstable)*

"Low", *// Risk tolerance (low)*

5000, *// Current savings (€5,000)*

6 *// Number of months to cover (6)*

);

console.log(JSON.stringify(emergencyFund, null, 2));

Example Output:

{

"recommendedFund": 22500,

"remainingToSave": 17500,

"monthsCoveredByCurrentSavings": 2.0

}

**Explanation:**

* The user has €2,000 in essential expenses and €500 in non-essential expenses, which adds up to €2,500 in total monthly expenses.
* The user has an unstable income and low-risk tolerance, which means a larger emergency fund is recommended.
* The function recommends an emergency fund of €22,500 (6 months of expenses, adjusted by risk and stability).
* The user already has €5,000 in savings, so they need to save an additional €17,500.
* Their current savings would cover 2 months of expenses based on their current spending.

**Additional Features:**

To make this tool even more helpful for users, you could add features like:

* **Monthly Savings Goal**: Recommend how much to save per month to reach the target emergency fund by a certain date.
* **Custom Months**: Allow users to select different month ranges for different scenarios (e.g., 3 months for high-risk and 12 months for low-risk situations).
* **Savings Strategies**: Provide tips or strategies based on the user’s savings progress (e.g., cut non-essential expenses or allocate a portion of their income to saving).