

# DUFUNA ASSESSMENT

## OVERVIEW

**Problem Statement:** In recent years, the Nigerian space has seen an increase in the number of finance apps or platforms available for users. These apps help users to save and invest money, however, a common inadequacy of these apps is that they fail to estimate the different time value of the user's money. Users of the app will like to know the value of their money at different time intervals based on the interest being offered on the app.

**Solution Proffered:** This app proffers a solution to the problem of calculating the true future value of money, by calculating the compound interest accrued on an investment(using a given algorithm) and it takes into account the influence of inflation on the interest rate offered.

## ALGORITHM-EMPLOYED:

### Effective Rate :

```
effectiveRate = (1 + interestRate / 100) / (1 + inflation / 100) - 1;
```

### Compound Interest:

```
compoundInterest =  
    principal *  
    Math.pow(  
        1 + (effectiveRate * 100) / (compoundPeriod * 100),  
        compoundPeriod * time  
    );
```

## TECHNOLOGIES USED:

- 1.Html, Css and Vanilla JavaScript
- 2.React.js

## USER MANUAL:

### Html,css,vanilla js version.

Step 1: Fill the input fields according to the labels provided for each input.

Step 2: Click on the 'compute' button to display balance.

**React.js version.**

Step1: Fill the input fields according to the labels provided for each input, the inputs are computed automatically.

**PARAMETERS ACCOUNTED FOR:**

**Principal:** This is the initial deposit/investment of the user.

**Interest Rate:** This is the interest rate offered by the financial institution.

**Time:** This is the duration of time for which the user is willing to invest his/her money.

**Compound Period:** This is the duration of time which the interest accrued is compounded(In this app the compound period can not be more than the time stipulated but it can be equal to it or less than it.).

**Inflation Rate:** This defines the general increase in price of items and the fall in the purchasing power of money.

**Effective Rate:** This is the rate after all factors including inflation have been considered.

**LIMITATIONS:**

Due to limitations in knowledge of the React library and its tools, the implementation of a button component in the React app was unattainable.  
This button would have given the user a good measure of control over how the application runs.

**DEPLOYMENT:**

The 'HTML,CSS,VANILLA JS' version of this app was deployed on ZEIT, which offers free deployment for small projects.

The react version was not deployed because it was created in a development environment and is not optimized for production