**Project: Financial Calculator**

**Subtitle: Loan Payment Calculation**

**Compound Interest Calculation**

**Savings Growth Calculation**

**Group Members E**

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The formula for calculating the monthly payment on a loan is:

***Where:***

* *M* = Monthly payment
* *P* = Principal loan amount (the total amount borrowed)
* *r* = Monthly interest rate (annual interest rate divided by 12 months, expressed as a decimal)
* *n* = Total number of payments (loan term in years multiplied by 12)

**Compound Interest Formula**  
  
**Formula:**

Where:

* **A** = Future value of the investment/loan, including interest
* **P** = Principal amount (initial deposit or loan)
* **r** = Annual interest rate (as a decimal)
* **n** = Number of times interest is compounded per year
* **t** = Time in years

**Formula For Saving Growth**

**)**

**Where:**

* FV = Future Value of the investment
* P = Initial Principal (initial sAavings amount)
* PMT = Monthly Contribution (amount added each month)
* r= Monthly Interest Rate (annual interest rate divided by 12 months)
* n= Total Number of Payments (number of years multiplied by 12)

## GIT & GITHUB COLLABORATION

Each team member worked on **separate branches**:

main → **Managed by Alie Ibrahim thoronka**  
loan-payment → **Foday Marrah**  
compound-interest → Mohamed **Amara kamara**   
savings-growth → **Thomas Steven**  
docs-and-presentation → **Mohamed S Kante**

GitHub was used for **version control, branching,** and **merging.**  
**Conflicts were resolved** using git merge and team discussions.

**Git Commands Used**

git clone <https://github.com/LEO-lab-star/Financial-calculator-project.git>  
git checkout -b branch-name  
git add .  
git commit -m "Added loan payment calculation"  
git push origin branch-name

**challenges faced**

* **Merge conflicts** when integrating code.
* **Errors in calculations** due to incorrect formulas.
* **GitHub authentication issues** while pushing code.

**Solutions**

* Used **GitHub Issues & Discussions** for tracking problems.
* Verified formulas with **online calculators** for accuracy.
* Set up **GitHub SSH Authentication** for smoother access.