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Project

Loan Payment

Introduction:

The python project code is based on the loan interest payment that takes principal loan amount, interest rate, total years as input and provides the total amount of monthly payment, loan payment and interest amount as output.

Python Project Code:

```
def calculate_loan_payment(principal, annual_rate, years):
    monthly_rate = annual_rate / 100 / 12
    number_of_payments = years * 12
```

```
    if monthly_rate == 0:  # Handle zero interest case
        monthly_payment = principal / number_of_payments
    else:
        monthly_payment = (principal * monthly_rate) / (1 - (1 + monthly_rate) ** -number_of_payments)

    total_payment = monthly_payment * number_of_payments
    total_interest = total_payment - principal

    return monthly_payment, total_payment, total_interest


def main():
    print("Welcome to the Loan Calculator!")
    principal = float(input("Enter the loan principal amount: "))
    annual_rate = float(input("Enter the annual interest rate (in %): "))
    years = int(input("Enter the loan term (in years): "))

    monthly_payment, total_payment, total_interest = calculate_loan_payment(principal, annual_rate,
years)

    print("\nLoan Payment Details:")
    print(f"Monthly Payment: ${monthly_payment:.2f}")
    print(f"Total Payment over {years} years: ${total_payment:.2f}")
    print(f"Total Interest Paid: ${total_interest:.2f}")


if __name__ == "__main__":
    main()
```

Input:

```
C:\Users\user\PycharmProjects\pythonProject3\.venv\Scripts\python.exe C:\Users\user\PycharmProjects\pythonProject3\project.py
Welcome to the Loan Calculator!
Enter the loan principal amount: 10000
Enter the annual interest rate (in %): 5
Enter the loan term (in years): 10
```

Output:

```
Loan Payment Details:
Monthly Payment: $106.07
Total Payment over 10 years: $12727.86
Total Interest Paid: $2727.86
```