**2) Exercise 7: Financial Forecasting**

**Scenario:**

You are developing a financial forecasting tool that predicts future values based on past data.

**CODE:**

**import** java.util.Scanner;

**public** **class** FinancialForecasting {

**public** **static** **double** calculate(**double** principal, **double** rate, **int** periods) {

**if** (periods == 0) {

**return** principal; // Base case

}

**return** *calculate*(principal, rate, periods - 1) \* (1 + rate);//recursive case

}

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.print("Enter the principal amount: ");

**double** principal = sc.nextDouble();

System.***out***.print("Enter the interest rate per period (as integer percentage, e.g. 5 for 5%): ");

**int** ratePercent = sc.nextInt();

**double** rate = ratePercent / 100.0;

System.***out***.print("Enter the number of periods: ");

**int** periods = sc.nextInt();

**double** finalValue = *calculate*(principal, rate, periods);

System.***out***.printf(

"Amount after %d periods at %d%% rate: %.2f\n",

periods, ratePercent, finalValue

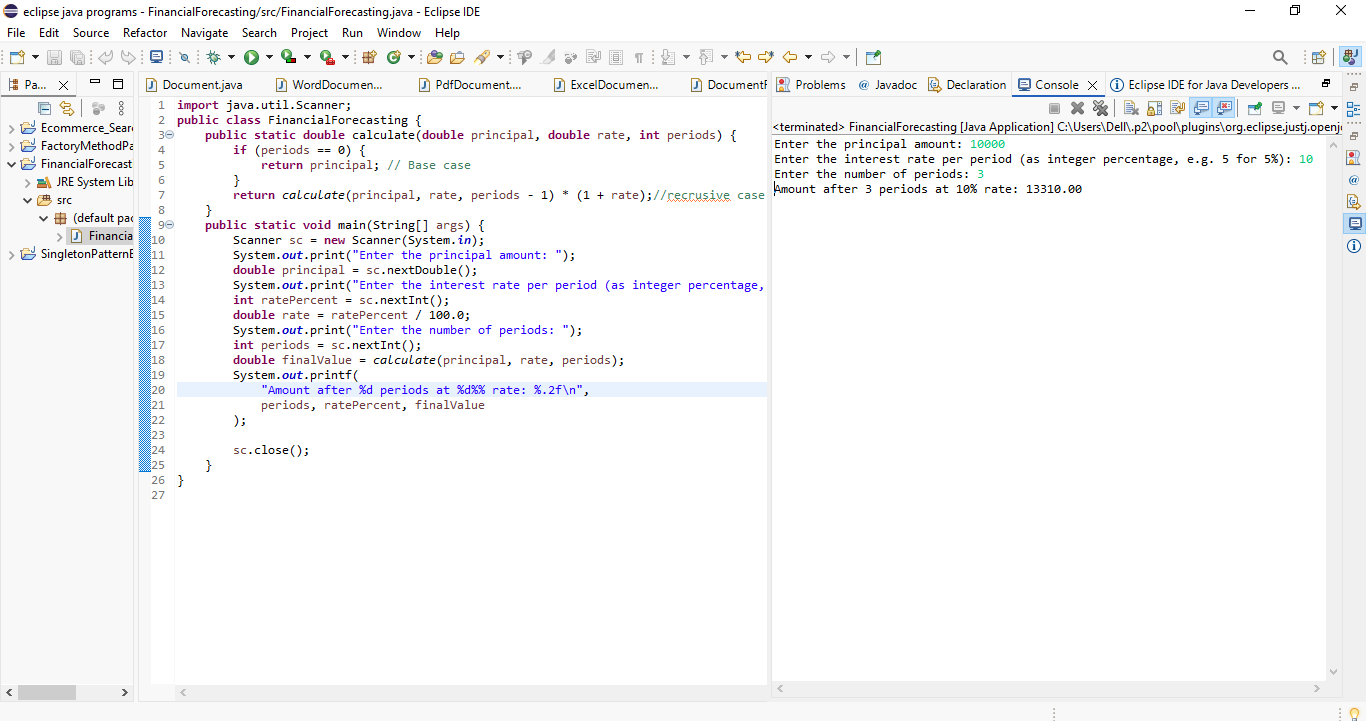
);

sc.close();

}

}

**OUTPUT:**

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