**FinancialForecast.java**

public class FinancialForecast {

public static double calculateFutureValue(double presentValue, double rate, int years) {

if (years == 0)

return presentValue;

else

return (1 + rate) \* calculateFutureValue(presentValue, rate, years - 1);

}

public static double calculateFutureValueMemo(double presentValue, double rate, int years, double[] memo) {

if (years == 0)

return presentValue;

if (memo[years] != 0)

return memo[years];

memo[years] = (1 + rate) \* calculateFutureValueMemo(presentValue, rate, years - 1, memo);

return memo[years];

}

}

**Main.java**

public class Main {

public static void main(String[] args) {

double presentValue = 10000;

double rate = 0.05;

int years = 5;

double futureValue = FinancialForecast.calculateFutureValue(presentValue, rate, years);

System.out.printf(" Predicted Future Value (Recursive): ₹%.2f\n", futureValue);

double[] memo = new double[years + 1];

double futureValueMemo = FinancialForecast.calculateFutureValueMemo(presentValue, rate, years, memo);

System.out.printf(" Optimized Future Value (Memoized): ₹%.2f\n", futureValueMemo);

}

}

OUTPUT :

