WEEK – 1

Financial Forecasting

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**Exercise 7: Financial Forecasting**

**Scenario:**

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

**Steps:**

1. **Understand Recursive Algorithms:**
   * Explain the concept of recursion and how it can simplify certain problems.
2. **Setup:**
   * Create a method to calculate the future value using a recursive approach.
3. **Implementation:**
   * Implement a recursive algorithm to predict future values based on past growth rates.
4. **Analysis:**
   * Discuss the time complexity of your recursive algorithm.
   * Explain how to optimize the recursive solution to avoid excessive computation.

Solution :

1. Forecast.java

public class Forecast {

public static double futureValue(double principal, double rate, int years) {

if (years == 0) {

return principal;

}

return futureValue(principal \* (1 + rate), rate, years - 1);

}

public static void main(String[] args) {

double principal = 1000.0;

double rate = 0.10;

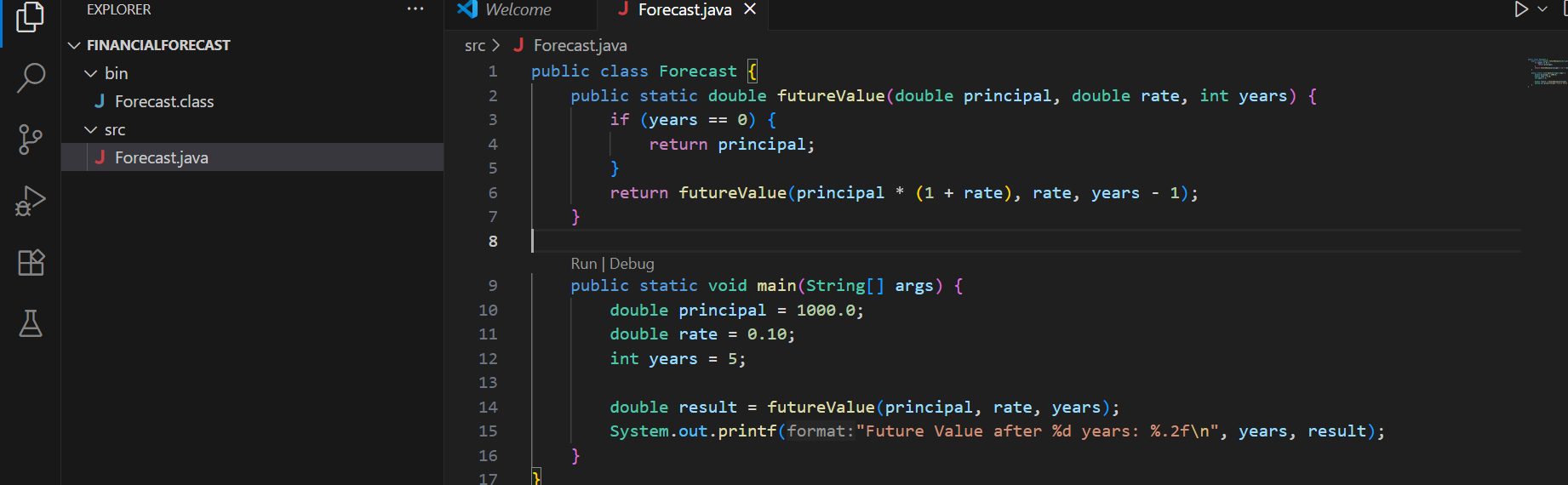
int years = 5;

double result = futureValue(principal, rate, years);

System.out.printf("Future Value after %d years: %.2f\n", years, result);

}

}



Output:

