

## *Exercise 7: Financial Forecasting*

```
public class Main {

    // Recursive method to calculate future value

    public static double forecastFutureValue(double initialAmount, double growthRate, int years) {

        // Base case: if no more years, return the initial amount

        if (years == 0) return initialAmount;

        // Recursive step: calculate value for previous year and apply growth

        return forecastFutureValue(initialAmount, growthRate, years - 1) * (1 + growthRate);

    }

    public static void main(String[] args) {

        double initialAmount = 1000.0; // starting value in currency

        double growthRate = 0.05;      // 5% growth per year

        int years = 5;                  // forecast for 5 years

        double futureValue = forecastFutureValue(initialAmount, growthRate, years);

        System.out.printf("Forecasted value after %d years: %.2f\n", years, futureValue);

    }

}
```

### Using JDoodle compiler



The screenshot shows the JDoodle compiler interface. At the top, there are two tabs: "Output" and "Generated files". The "Output" tab is active, displaying the text "Forecasted value after 5 years: 1276.28". Below the output, there is a status bar that says "Compiled and executed in 1.91 sec(s)".