Assignment 8

This week’s assignment will focus on a specific task: determining if a given number is a prime number. You are to implement a function that takes a long integer as input and returns true if the number is prime, or false otherwise.

1. **Implement a function**

   ```java
   public static boolean isPrime(long number) {
       // Your implementation here
   }
   ```

   **Function Signature**

   ```java
   public static boolean isPrime(long number) {
       // Your implementation here
   }
   ```

2. **Write a test function**

   ```java
   public static void testIsPrime() {
       // Your implementation here
   }
   ```

   **Test Cases**

   ```java
   public static void testIsPrime() {
       // Your implementation here
   }
   ```

3. **Analyze the performance**

   ```java
   public static void analyzePerformance() {
       // Your implementation here
   }
   ```

   **Performance Test**

   ```java
   public static void analyzePerformance() {
       // Your implementation here
   }
   ```

4. **Write a report**

   ```java
   public static void writeReport() {
       // Your implementation here
   }
   ```

   **Report Format**

   ```java
   public static void writeReport() {
       // Your implementation here
   }
   ```

5. **Submit your code**

   ```java
   public static void submitCode() {
       // Your implementation here
   }
   ```

   **Submission Deadline**

   ```java
   public static void submitCode() {
       // Your implementation here
   }
   ```

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**Note:**

- Use the provided guidelines to structure your solution.
- Ensure your code is well-documented and easy to understand.
- Submit your code by the deadline to receive credit.