```java
package StringAPI;
//Challenge: Use charAt(), length(), and substring() methods
public class Challenge1 {
	public static void main(String[] args) {
		String str = "Hello World";
		System.out.println("charAt(0) is: "+str.charAt(0));
		System.out.println("Length of string is: "+str.length());
		System.out.println("substring(0,6) is: "+str.substring(0,6));
	}
}
```

```java
package StringAPI;
//Challenge: Count the number of vowels in a string.
public class Challenge2 {
	public static void main(String[] args) {
		String s = "Hello World, this is vowels check.";
		String st = s.toLowerCase();
		int count = 0;
		for(int i=0; i<s.length(); i++) {
			char c = st.charAt(i);
			if(c=='a'||c=='e'||c=='i'||c=='o'||c=='u') {
				count++;
			}
		}
		System.out.println("Number of vowels in a string are: "+count);
	}
}
```

```java
package StringAPI;
//Challenge: Check if a string is a palindrome.
public class Challenge3 {
	public static void main(String[] args) {
		String s = "Madam";
		String st= s.toLowerCase();
		String str = new StringBuilder(st).reverse().toString();
		if(str.equals(st)) {
			System.out.println("The string is palindrome.");
		}
		else {
			System.out.println("Not a palindrome.");
		}
	}
}
```

```java
package StringAPI;
//Challenge: Convert a string to upper case and lower case
public class Challenge4 {
	public static void main(String[] args) {
		String s = "Hello World";

		System.out.println(s.toUpperCase());
		System.out.println(s.toLowerCase());
	}
}
```

```java
package StringAPI;
//Challenge: Remove spaces and special characters from a string.
public class Challenge5 {
	public static void main(String[] args) {
		String s = "Hello, World!";
		String st = s.replaceAll("[^a-zA-Z0-9]","");
		System.out.println(st);
	}
}
```