Compiler Design

Lab 2: Regular Expressions

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Code: https://github.com/maazh/Compiler-Design-Labs/tree/master/lab2

```
package lab2;

import java.util.regex.Pattern;
import java.util.regex.Matcher;

public class Lab2 {

	public static void findNumbers(String input) {
		Pattern pattern = Pattern.compile("[0-9]+");
		Matcher matcher = pattern.matcher(input);
		System.out.println();

		while (matcher.find()) {
			System.out.println("Found substring \"" + matcher.group() + "\" starting at index " +
matcher.start()
					+ " and ending at index " + matcher.end());
		}

	}

	public static void findOneDigitOneLetter(String input) {
		Pattern patternNumber = Pattern.compile("[0-9]{1}");
		Pattern patternAlphabel = Pattern.compile("[A-Z]{1}");
		Matcher matcher = patternNumber.matcher(input);
		Matcher matcher1 = patternAlphabel.matcher(input);
		System.out.println();

		while (matcher.find()) {
			System.out.println("Found number \"" + matcher.group() + "\" starting at index " +
matcher.start()
					+ " and ending at index " + matcher.end());
		}

		while (matcher1.find()) {
			System.out.println("Found alphabet \"" + matcher1.group() + "\" starting at index "
					+ matcher1.start() + " and ending at index " + matcher1.end());
		}
	}

	public static void findSpace(String input) {

		Pattern pattern = Pattern.compile("^[^\\s]*\\s");
		Matcher matcher = pattern.matcher(input);
		System.out.println();

		//System.out.println("Finding Space..");
		while (matcher.find()) {
			System.out.println("Found space" + " at index " + matcher.end());
		}

	}
	public static void Excercise5and6(String input) {

		Pattern pattern = Pattern.compile("[a-z][a-zA-Z][0-9]");
		Matcher matcher = pattern.matcher(input);
		System.out.println();

		//System.out.println("Finding Space..");
		while (matcher.find()) {
			System.out.println("Found value \"" + matcher.group() + "\" starting at index " +
matcher.start()
			+ " and ending at index " + matcher.end());		}

	}

	public static String Finder(String regexPattern, String input) {

		Pattern pattern = Pattern.compile(regexPattern);
```

```
                Matcher matcher = pattern.matcher(input);
                System.out.println();
                System.out.println("Finding pattern: " + regexPattern + " for: " + input);
                String value = "";
                while (matcher.find()) {
                        System.out.println("Found value \"" + matcher.group() + "\" starting at index " +
matcher.start()
                        + " and ending at index " + matcher.end());
                        value = matcher.group();
                }
                        return value;
        }

        public static void main(String[] args) {
                // Question 1 and 2
                findNumbers("sddsa12dsa344");
                // Exercise 3
                findOneDigitOneLetter("sdbA2DdSA6Dsa12dsa344");
                // Exercise 4
                findSpace("sa s aSSDsaz s2C3");
                // Exercise 5 and 6
                Excercise5and6("sadD3sdcacaA4d");
                // Exercise 7
                Finder("\\s[a-z][a-z]\\s", "sdaad dv sd ad ");
                // Exercise 8
                String Ex8 = Finder("\\d{4}\\s*$", "5543FFDS12d1152");
                // Exercise 9
                System.out.println("Substring digits are: " + Ex8.substring(0, 2));

        }

}
```