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Module 3 4.2 practice programs:

Problem 1:

```java
package oracle;

import java.util.Scanner;

public class test {
    private final String name;
        private final String username;
        private final String email;
        private String password;

        public test() {
            this.name = setName();
            this.username = setUserName(name);
            this.email = setEmail(username);
            this.password = setPassword(username);
        }

        @Override
        public String toString() {
            return "Employee Details\n" +
                   "Name: " + name + "\n" +
                   "Username: " + username + "\n" +
                   "Email: " + email + "\n" +
                   "Initial Password: " + password;
        }

        private int countChars(String str, char ch) {
            int count = 0;
            for (int i = 0; i < str.length(); i++) {
                if (str.charAt(i) == ch) {
                    count++;
                }
            }
            return count;
```

```
    }

    private String setName() {
        Scanner scanner = new Scanner(System.in);
        String name;
        String regex = "^[a-zA-Z]+\\s[a-zA-Z]+$";
        do {
            System.out.print("Enter your full name (first and last name): ");
            name = scanner.nextLine();
            if (!name.matches(regex)) {
                System.out.println("Incorrect format for name. Please enter a first name followed by a spac
            }
        } while (!name.matches(regex));
        return name;
    }

    private String setUserName(String name) {
        return name.toLowerCase().replace(" ", "");
    }

    private String setEmail(String username) {
        String[] parts = username.split("");
        return parts[0] + parts[1] + "@oracleacademy.test";
    }

    private String setPassword(String username) {
        String password = username.length() >= 8 ? username.substring(0, 8) : String.format("%-8s", usernam
        password = password.replaceAll("[aeiou]", "*");
        char[] passwordChars = password.toCharArray();
        for (int i = 0; i < passwordChars.length; i++) {
            if (Character.isAlphabetic(passwordChars[i])) {
                passwordChars[i] = Character.toUpperCase(passwordChars[i]);
                break;
            }
```

```
            }
        }
        return new String(passwordChars);
    }

    public static void main(String[] args) {
        test employee = new test();
        System.out.println(employee);
    }


}
```

Output:

```
Enter your full name (first and last name): sripathi maram
Employee Details
Name: sripathi maram
Username: sripathimaram
Email: sr@oracleacademy.test
Initial Password: Sr*p*th*
```

Problem 2:

```java
package oracle;

import java.util.Scanner;
import java.util.regex.*;

public class test {
    public static void main(String[] args) {

        String[] codedAnswerLines = {
            "1", "A", "x", "b", "!", "C", "3", "e", "G", "D", "9", "F", "z", "f"
        };

        StringBuilder answers = new StringBuilder();

        Pattern pattern = Pattern.compile("[a-fA-F]");

        for (String line : codedAnswerLines) {
            Matcher matcher = pattern.matcher(line);
            if (matcher.find()) {
                answers.append(matcher.group());
            }
        }

        System.out.println(answers.toString());
    }

}
```

Output:

```
AbCeDFf
```

Problem 3:

```java
package oracle;

public class RegeText {
    public static void main(String[] args) {

        String answers = "AaBbCcDdEeFf";

        String finalAnswerKey = finalAnswers(answers);

        System.out.println(finalAnswerKey);
    }

    public static String finalAnswers(String answers) {

        answers = answers.replace('e', 'b')
                         .replace('E', 'A')
                         .replace('f', 'c')
                         .replace('F', 'D');

        answers = answers.toLowerCase();

        return answers;
    }
}

```

Output:

```
aabbccddabdc
```

Problem 4:

```java
package oracle;

public class RegText2 {
    public static void main(String[] args) {

        String[] strValues = {"anana", "banana", "gabanana"};

        System.out.println("a) str.matches(\".?anana\"):");
        for (String str : strValues) {
            boolean result = str.matches(".?anana");
            System.out.println("str = \"" + str + "\"; matches: " + result);
        }

        // Part b
        String[] str2Values = {"banana", "anana", "shanana"};

        System.out.println("\nb) str2.matches(\"[Bb]anana\"):");
        for (String str2 : str2Values) {
            boolean result = str2.matches("[Bb]anana");
            System.out.println("str2 = \"" + str2 + "\"; matches: " + result);
        }

        // Part c
        String[] str3Values = {"montanana", "anana", "_anana"};

        System.out.println("\nc) str3.matches(\".*anana\"):");
        for (String str3 : str3Values) {
            boolean result = str3.matches(".*anana");
            System.out.println("str3 = \"" + str3 + "\"; matches: " + result);
        }
    }

}
```

Output:

```
a) str.matches(".?anana"):
str = "anana"; matches: true
str = "banana"; matches: true
str = "gabanana"; matches: false

b) str2.matches("[Bb]anana"):
str2 = "banana"; matches: true
str2 = "anana"; matches: false
str2 = "shanana"; matches: false

c) str3.matches(".*anana"):
str3 = "montanana"; matches: true
str3 = "anana"; matches: true
str3 = "_anana"; matches: true
```