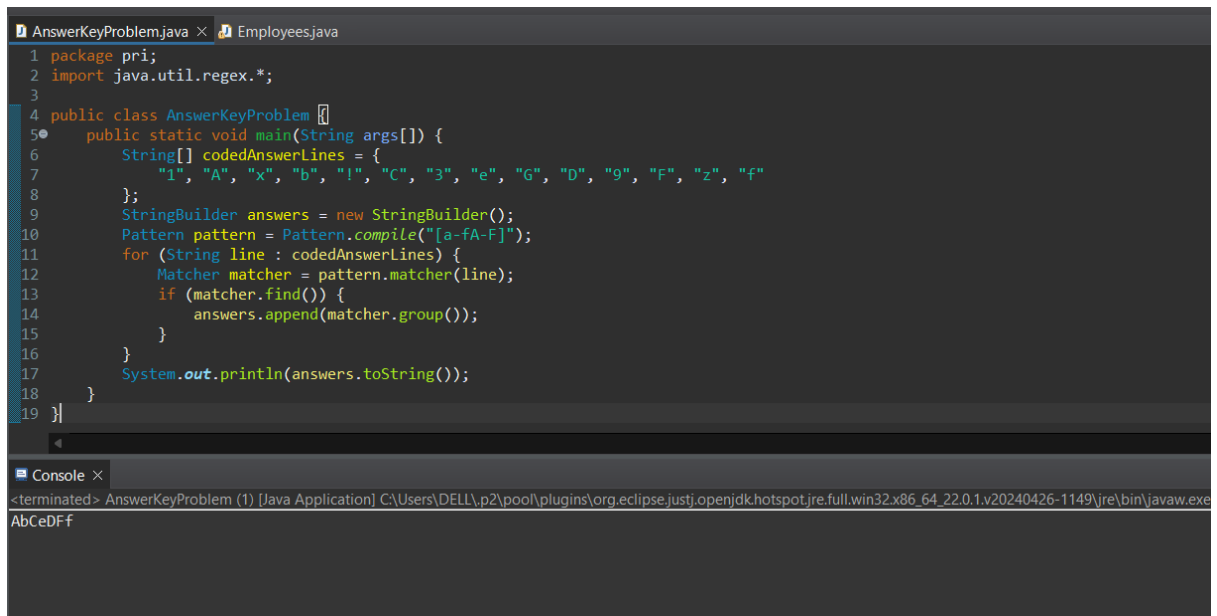1.

```java
package pri;
import java.util.Scanner;

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

    public Employees() {
        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 space and a surname.");
            }
        } while (!name.matches(regex));
```

```java
        } 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].charAt(0) + parts[1] + "@oracleacademy.Test";
    }
    private String setPassword(String username) {
        String password = username.length() >= 8 ? username.substring(0, 8) : String.format("%-8s", username).replace(' ', '*');
        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) {
        Employee employee = new Employee();
        System.out.println(employee);
    }
}
```

```
<terminated> Employees [Java Application] C:\Users\DELL\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_22.0.1.v20240426-
Enter your full name (first and last name): Priyal T
Employee Details
Name : Priyal T
Username : priyal.t
Email : pt@oracleacademy.Test
Initial Password : Pr*y*l.t
```
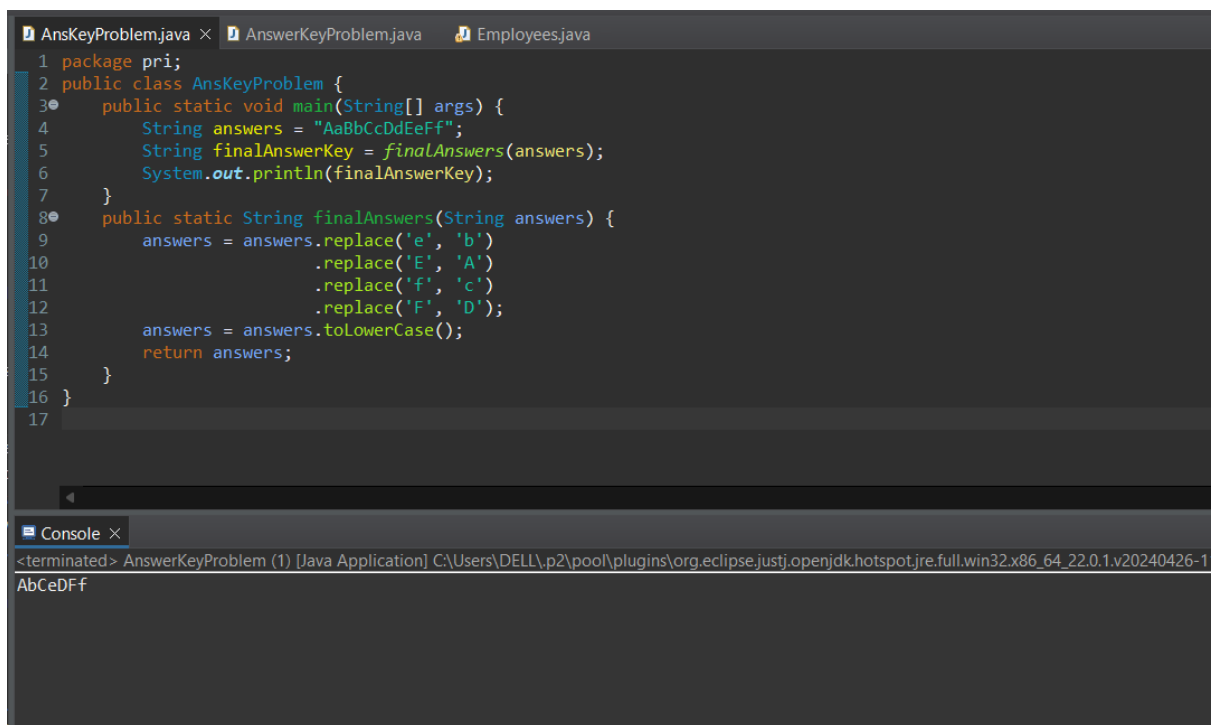
2.

```java
package pri;
import java.util.regex.*;

public class AnswerKeyProblem {
    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());
    }
}
```

Console

```
<terminated> AnswerKeyProblem (1) [Java Application] C:\Users\DELL\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_22.0.1.v20240426-1149\jre\bin\javaw.exe
AbCeDFf
```

3.

```java
package pri;
public class AnsKeyProblem {
    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;
    }
}
```

Console

```
<terminated> AnswerKeyProblem (1) [Java Application] C:\Users\DELL\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_22.0.1.v20240426-1
AbCeDFf
```

4.

```java
  1  package pri;
  2  public class RegexTest {
  3      public static void main(String[] args) {
  4          // Part a
  5          String[] strValues = {"anana", "banana", "gabanana"};
  6          System.out.println("a) str.matches(\".?anana\"):");
  7          for (String str : strValues) {
  8              boolean result = str.matches(".?anana");
  9              System.out.println("str = \"" + str + "\"; matches: " + result);
 10          }
 11          // Part b
 12          String[] str2Values = {"banana", "anana", "shanana"};
 13          System.out.println("\nb) str2.matches(\"[Bb]anana\"):");
 14          for (String str2 : str2Values) {
 15              boolean result = str2.matches("[Bb]anana");
 16              System.out.println("str2 = \"" + str2 + "\"; matches: " + result);
 17          }
 18          // Part c
 19          String[] str3Values = {"montanana", "anana", "_anana"};
 20          System.out.println("\nc) str3.matches(\".*anana\"):");
 21          for (String str3 : str3Values) {
 22              boolean result = str3.matches(".*anana");
 23              System.out.println("str3 = \"" + str3 + "\"; matches: " + result);
 24          }
 25      }
 26  }
```

```
<terminated> RegexTest [Java Application] C:\Users\DELL\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_22.0.1.v20240426-1149\jre\bin\javaw.exe  (22 Aug 2024, 9:05:25 am – 9:05:26 am) [pid: 9956]
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
```