

**Correção dos exercícios de fixação (assunto: classes, atributos e métodos)**

**Exercício 1:**

**Classe Rectangle.java (pacote entities):**

```
package entities;

public class Rectangle {

    public double width;
    public double height;

    public double area() {
        return width * height;
    }

    public double perimeter() {
        return 2 * (width + height);
    }

    public double diagonal() {
        return Math.sqrt(width * width + height * height);
    }
}
```

**Classe Program.java (pacote application):**

```
package application;

import java.util.Locale;
import java.util.Scanner;
import entities.Rectangle;

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

        Locale.setDefault(Locale.US);
        Scanner sc = new Scanner(System.in);

        Rectangle rect = new Rectangle();

        System.out.println("Enter rectangle width and height:");
        rect.width = sc.nextDouble();
        rect.height = sc.nextDouble();

        System.out.printf("AREA = %.2f\n", rect.area());
        System.out.printf("PERIMETER = %.2f\n", rect.perimeter());
        System.out.printf("DIAGONAL = %.2f\n", rect.diagonal());
        sc.close();
    }
}
```

## Exercício 2:

### Classe Employee.java (pacote entities):

```
package entities;

public class Employee {

    public String name;
    public double grossSalary;
    public double tax;

    public double netSalary() {
        return grossSalary - tax;
    }

    public void increaseSalary(double percentage) {
        grossSalary += grossSalary * percentage / 100.0;
    }

    public String toString() {
        return name + ", $ " + String.format("%.2f", netSalary());
    }
}
```

### Classe Program.java (pacote application):

```
package application;

import java.util.Locale;
import java.util.Scanner;
import entities.Employee;

public class Program {

    public static void main(String[] args) {

        Locale.setDefault(Locale.US);
        Scanner sc = new Scanner(System.in);

        Employee emp = new Employee();

        System.out.print("Name: ");
        emp.name = sc.nextLine();
        System.out.print("Gross salary: ");
        emp.grossSalary = sc.nextDouble();
        System.out.print("Tax: ");
        emp.tax = sc.nextDouble();

        System.out.println();
        System.out.println("Employee: " + emp);
        System.out.println();
        System.out.print("Which percentage to increase salary? ");
        double percentage = sc.nextDouble();
        emp.increaseSalary(percentage);

        System.out.println();
        System.out.println("Updated data: " + emp);
        sc.close();
    }
}
```

## Exercício 3:

### Classe Student.java (pacote entities):

```
package entities;

public class Student {

    public String name;
    public double grade1;
    public double grade2;
    public double grade3;

    public double finalGrade() {
        return grade1 + grade2 + grade3;
    }

    public double missingPoints() {
        if (finalGrade() < 60.0) {
            return 60.0 - finalGrade();
        }
        else {
            return 0.0;
        }
    }
}
```

### Classe Program.java (pacote application):

```
package application;

import java.util.Locale;
import java.util.Scanner;

import entities.Student;

public class Program {

    public static void main(String[] args) {

        Locale.setDefault(Locale.US);
        Scanner sc = new Scanner(System.in);

        Student student = new Student();

        student.name = sc.nextLine();
        student.grade1 = sc.nextDouble();
        student.grade2 = sc.nextDouble();
        student.grade3 = sc.nextDouble();

        System.out.printf("FINAL GRADE: %.2f\n", student.finalGrade());

        if (student.finalGrade() < 60.0) {
            System.out.println("FAILED");
            System.out.printf("MISSING %.2f POINTS\n", student.missingPoints());
        }
        else {
            System.out.println("PASS");
        }
        sc.close();
    }
}
```