

CSE 142 Section Handout #4 Style Sheet

Consider the following program:

```
import java.util.*;

public class Sect4 {
    public static void main(String[] args) {
        double hours = 0.0;
        checkSleep(hours);
        System.out.println();
        printFriends();
    }

    public static void checkSleep(double hours) {
        Scanner console = new Scanner(System.in);
        System.out.print("How many hours of sleep do you get? ");
        hours = console.nextDouble();
        if (hours < 7) {
            System.out.println("You're getting too little sleep.");
        }
        if (hours >= 7 && hours <= 9) {
            System.out.println("You're getting the recommended amount of sleep.");
        }
        if (hours > 9) {
            System.out.println("You're getting more sleep than is recommended.");
        }
    }

    public static void printFriends() {
        Scanner console = new Scanner(System.in);
        System.out.print("How many friends do you have? ");
        double friends = console.nextDouble();
        if (friends < 50) {
            System.out.println("You are friends with " + friends / 74000000.0 +
                " percent of the world.");
            System.out.println("You need to get more friends!");
        } else if (friends < 250) {
            System.out.println("You are friends with " + friends / 74000000.0 +
                " percent of the world.");
            System.out.println("You have an average number of friends.");
        } else if (friends >= 250) {
            System.out.println("You are friends with " + friends / 74000000.0 +
                " percent of the world.");
            System.out.println("Whoa there! You have a lot of friends.");
        }
    }
}
```

While this method would receive full external correctness by producing the desired output, it would not receive full internal correctness. List all style issues you can find.

CSE 142 Section Handout #4 Style Sheet Solutions

Corrected:

```
import java.util.*;

public class Sect4 {
    public static void main(String[] args) {
        Scanner console = new Scanner(System.in);
        checkSleep(console);
        printFriends(console);
    }

    // Prints an evaluation of sleeping habits based off user's input accessed
    // through the given Scanner
    public static void checkSleep(Scanner console) {
        System.out.print("How many hours of sleep do you get? ");
        double hours = console.nextDouble();
        if (hours < 7) {
            System.out.println("You're getting too little sleep.");
        } else if (hours <= 9) {
            System.out.println("You're getting the recommended amount of sleep.");
        } else {
            System.out.println("You're getting more sleep than is recommended.");
        }
        System.out.println();
    }

    // Prints an evaluation of number of friends based off user's input accessed
    // through the given Scanner
    public static void printFriends(Scanner console) {
        System.out.print("How many friends do you have? ");
        int friends = console.nextInt();
        System.out.println("You are friends with " + friends / 7400000.0 + " percent of the "
            + "world.");
        if (friends < 50) {
            System.out.println("You need to get more friends!");
        } else if (friends < 250) {
            System.out.println("You have an average number of friends.");
        } else {
            System.out.println("Whoa there! You have a lot of friends.");
        }
    }
}
```

- **Parameters** – `hours` doesn't need to be declared in `main` and passed to `checkSleep`. `hours` should instead be made a local variable within that method.
 - Correct use of parameters is worth points in Homework 4.
- **Scanner** – `Scanner` should be declared and initialized in `main` and then passed to each method via parameters to avoid creating multiple `Scanner` connected to the console.
 - Creating unnecessary multiple `Scanners` may result in some point deduction from your grade in Homework 4.
- **Main as a concise summary** – The blank `println` in `main` is a low-level detail that is better placed at the end of `checkSleep` so `main` can represent a high-level representation of the overall program.
- **If/Else structures & factoring** – "When using conditional execution in your program, you should choose which combination would be best based on the minium/maximum number of branches that could execute." –CSE142 Style Guide. In both methods, since *exactly one* branch will be executed each time either method is called, an `if/else if/else` structure should be used. "If you have common code being repeated between branches, then this is saying that you want to execute that code regardless of what you are testing for." –CSE142 Style Guide. The `println` describing the percentage of the world population should be factored out of each branch in `printFriends`.
 - Incorrect choice of conditional structure or failure to factor redundant code may result in point loss in Homework 4.
- **double v. int** – "If you had a variable `numOfSiblings`, it would be a misuse of type to make this variable a `double` because it doesn't make sense to talk about having 2.8 siblings; instead, this number should be declared as an `int` since the number of siblings that a person has will only ever take whole number values." –CSE142 Style Guide. This same logic applies to the `friends` variable in `printFriends`.
 - Incorrect choice of type may result in point loss in Homework 4.
- **Comments** – Each method should have a short descriptive comment on the line above its declaration, explaining what the method does, all parameters that it accepts, and what it returns (if anything).