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Título: Fundamentos de Desenvolvimento com Java - Teste de Performance 1

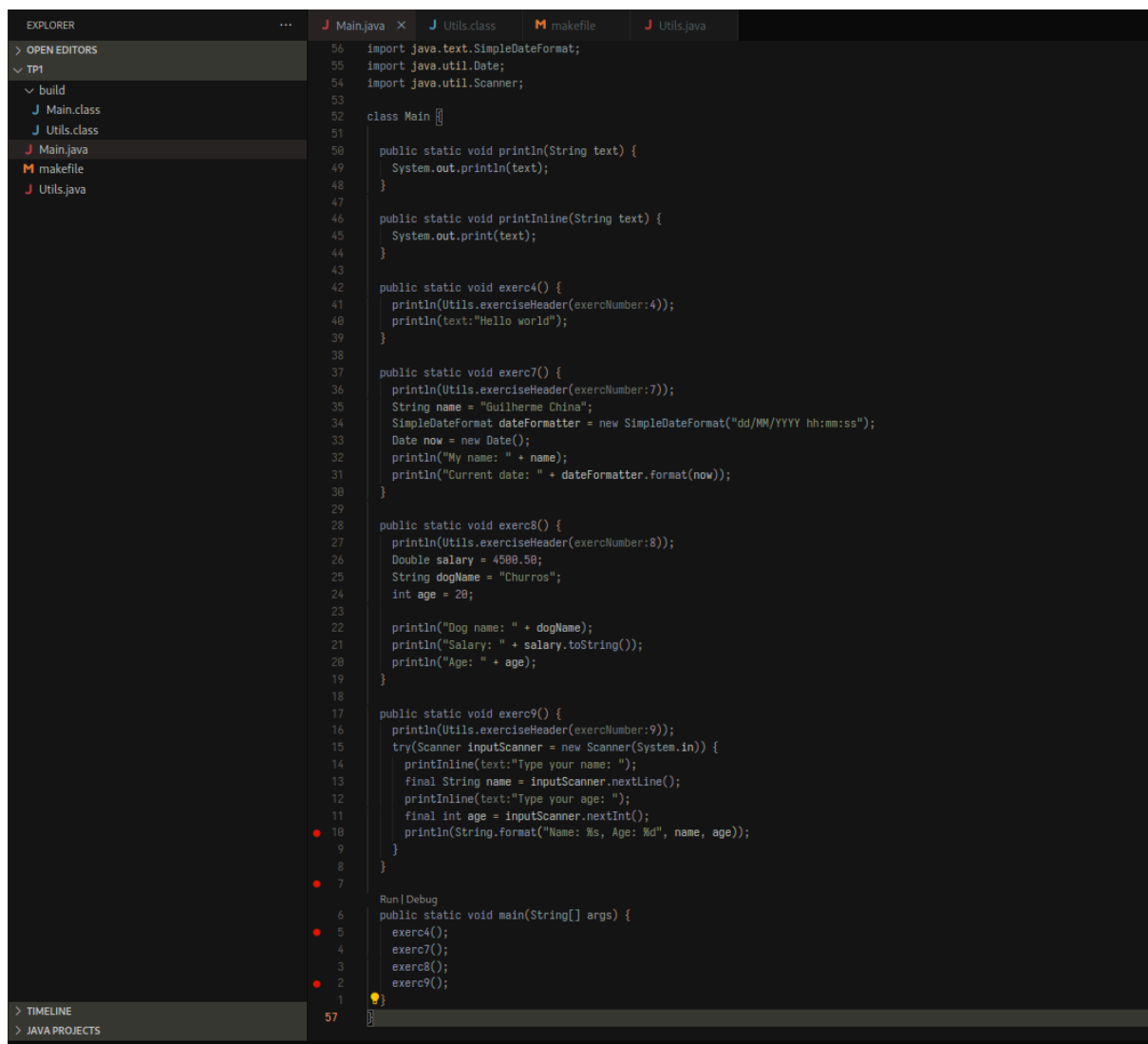
Data: 11/05/2025

Exercício 1 (JDK instalado):

```
infnet/FundamentosdeDesenvolvimentocomJava/TP1 [J master][?][☕ v21.0.7]
> java --version
openjdk 21.0.7 2025-04-15
OpenJDK Runtime Environment (build 21.0.7+6)
OpenJDK 64-Bit Server VM (build 21.0.7+6, mixed mode, sharing)

infnet/FundamentosdeDesenvolvimentocomJava/TP1 [J master][?][☕ v21.0.7]
> []
```

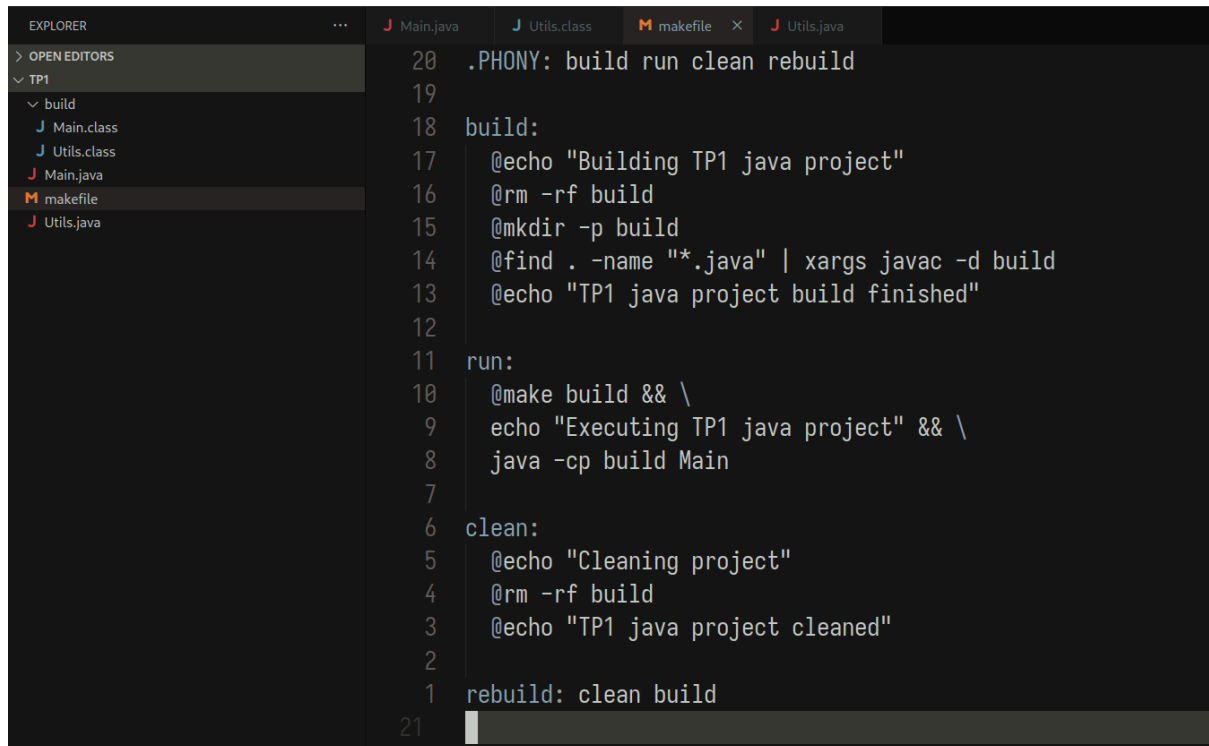
Conteúdo dos exercícios 4, 7, 8 e 9. O print também mostra a estrutura do projeto, requisitada pelo exercício 3.



The screenshot shows an IDE with a project named 'TP1' in the Explorer. The project structure includes a 'build' folder with 'Main.class' and 'Utils.class', and source files 'Main.java', 'makefile', and 'Utils.java'. The 'Main.java' file is open, showing the following code:

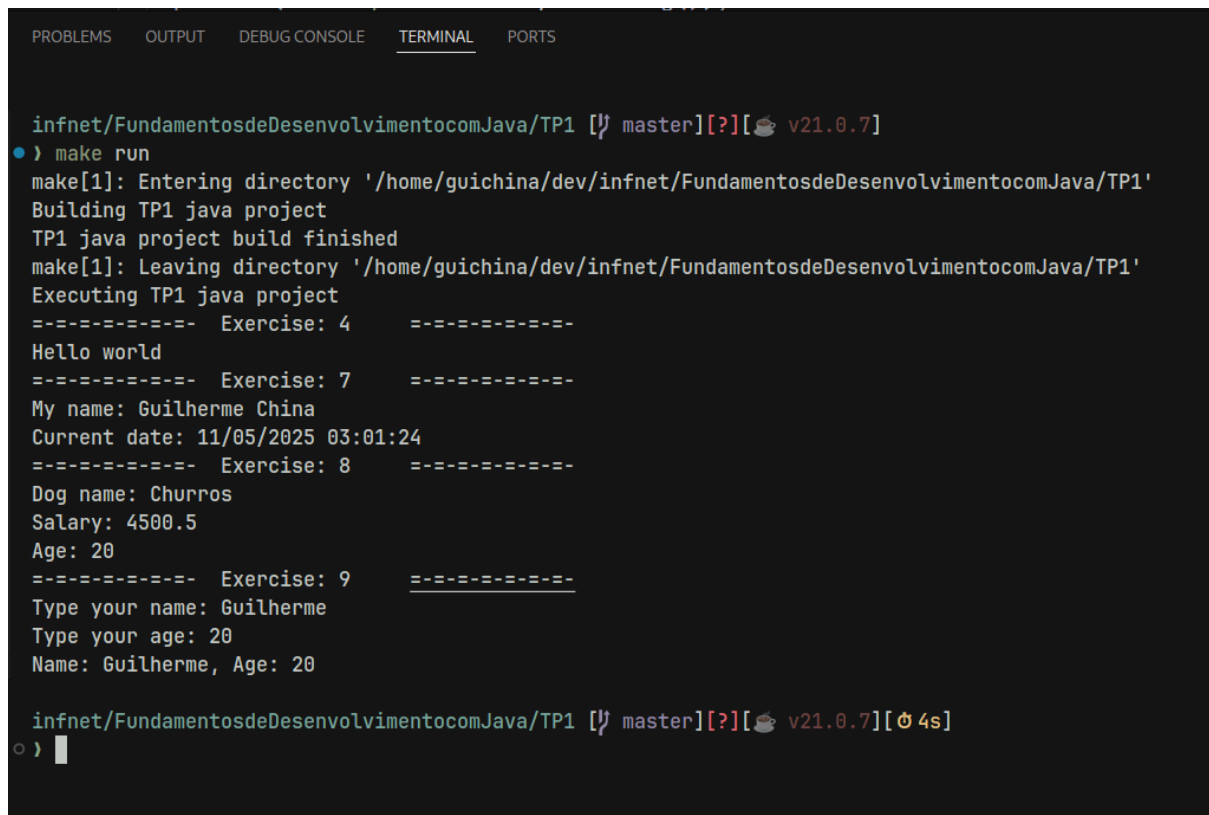
```
56 import java.text.SimpleDateFormat;
55 import java.util.Date;
54 import java.util.Scanner;
53
52 class Main {
51
50     public static void println(String text) {
49         System.out.println(text);
48     }
47
46     public static void printInline(String text) {
45         System.out.print(text);
44     }
43
42     public static void exerc4() {
41         println(Utils.exerciseHeader(exercNumber:4));
40         println(text:"Hello world");
39     }
38
37     public static void exerc7() {
36         println(Utils.exerciseHeader(exercNumber:7));
35         String name = "Guilherme China";
34         SimpleDateFormat dateFormatter = new SimpleDateFormat("dd/MM/YYYY hh:mm:ss");
33         Date now = new Date();
32         println("My name: " + name);
31         println("Current date: " + dateFormatter.format(now));
30     }
29
28     public static void exerc8() {
27         println(Utils.exerciseHeader(exercNumber:8));
26         Double salary = 4500.50;
25         String dogName = "Churros";
24         int age = 20;
23
22         println("Dog name: " + dogName);
21         println("Salary: " + salary.toString());
20         println("Age: " + age);
19     }
18
17     public static void exerc9() {
16         println(Utils.exerciseHeader(exercNumber:9));
15         try(Scanner inputScanner = new Scanner(System.in)) {
14             printInline(text:"Type your name: ");
13             final String name = inputScanner.nextLine();
12             printInline(text:"Type your age: ");
11             final int age = inputScanner.nextInt();
10             println(String.format("Name: %s, Age: %d", name, age));
9         }
8     }
7
6     public static void main(String[] args) {
5         exerc4();
4         exerc7();
3         exerc8();
2         exerc9();
1     }
57 }
```

Processo de build do projeto, requisitado pelo exercício 5:



```
20 .PHONY: build run clean rebuild
19
18 build:
17     @echo "Building TP1 java project"
16     @rm -rf build
15     @mkdir -p build
14     @find . -name "*.java" | xargs javac -d build
13     @echo "TP1 java project build finished"
12
11 run:
10     @make build && \
9     echo "Executing TP1 java project" && \
8     java -cp build Main
7
6 clean:
5     @echo "Cleaning project"
4     @rm -rf build
3     @echo "TP1 java project cleaned"
2
1 rebuild: clean build
21
```

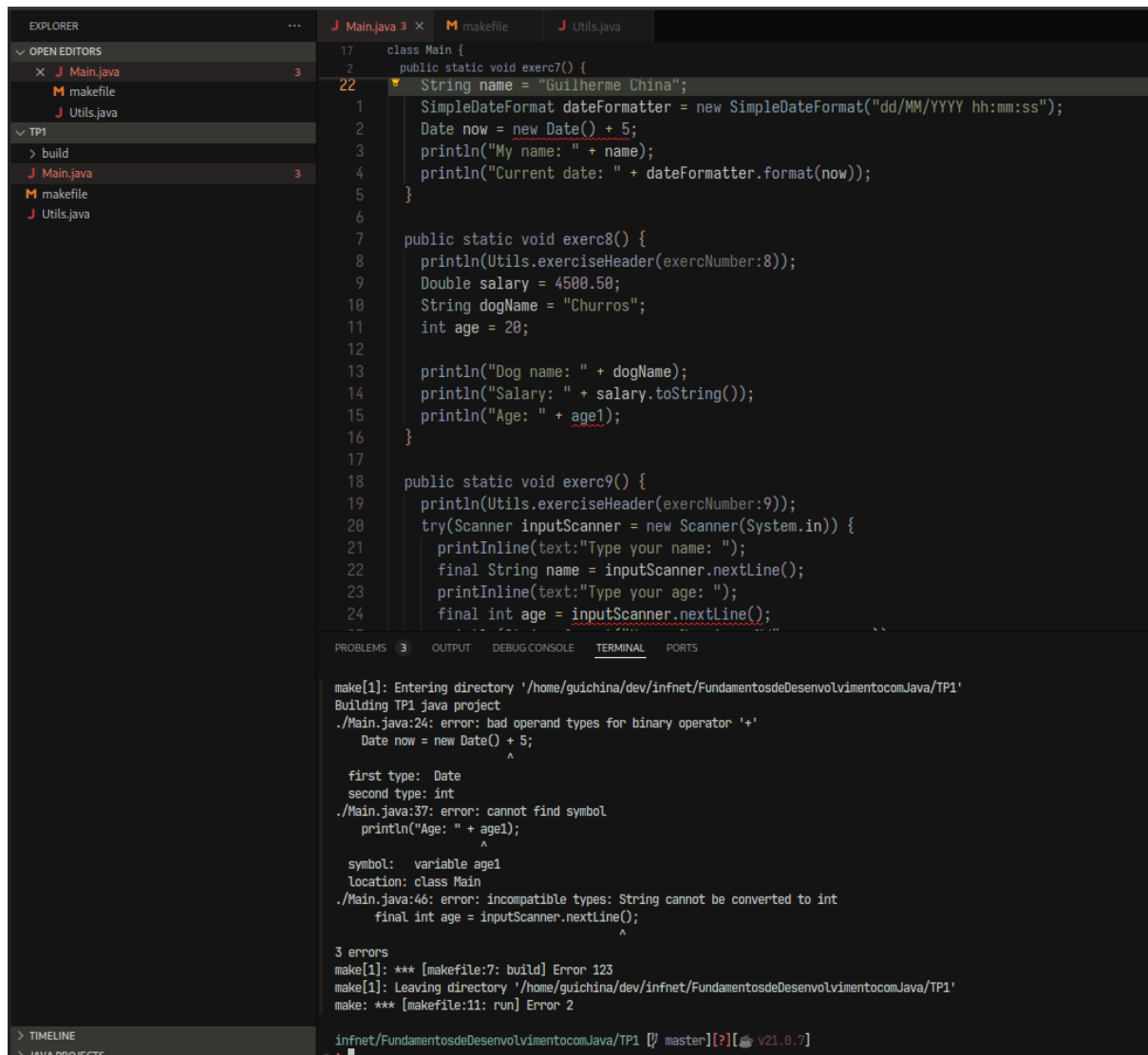
Execução do programa compilado:



```
infnet/FundamentosdeDesenvolvimentocomJava/TP1 [?] [v21.0.7]
• ) make run
make[1]: Entering directory '/home/guichina/dev/infnet/FundamentosdeDesenvolvimentocomJava/TP1'
Building TP1 java project
TP1 java project build finished
make[1]: Leaving directory '/home/guichina/dev/infnet/FundamentosdeDesenvolvimentocomJava/TP1'
Executing TP1 java project
===== Exercise: 4 =====
Hello world
===== Exercise: 7 =====
My name: Guilherme China
Current date: 11/05/2025 03:01:24
===== Exercise: 8 =====
Dog name: Churros
Salary: 4500.5
Age: 20
===== Exercise: 9 =====
Type your name: Guilherme
Type your age: 20
Name: Guilherme, Age: 20

infnet/FundamentosdeDesenvolvimentocomJava/TP1 [?] [v21.0.7] [4s]
o )
```

Exercício 10:



The screenshot shows an IDE with three open files: `Main.java`, `makefile`, and `Utils.java`. The `Main.java` file is active, showing the following code:

```
17 class Main {
18     public static void exerc7() {
19         String name = "Guilherme China";
20         SimpleDateFormat dateFormatter = new SimpleDateFormat("dd/MM/YYYY hh:mm:ss");
21         Date now = new Date() + 5;
22         println("My name: " + name);
23         println("Current date: " + dateFormatter.format(now));
24     }
25
26     public static void exerc8() {
27         println(Utils.exerciseHeader(exercNumber:8));
28         Double salary = 4500.50;
29         String dogName = "Churros";
30         int age = 20;
31
32         println("Dog name: " + dogName);
33         println("Salary: " + salary.toString());
34         println("Age: " + age1);
35     }
36
37     public static void exerc9() {
38         println(Utils.exerciseHeader(exercNumber:9));
39         try(Scanner inputScanner = new Scanner(System.in)) {
40             println(text:"Type your name: ");
41             final String name = inputScanner.nextLine();
42             println(text:"Type your age: ");
43             final int age = inputScanner.nextLine();
44         }
45     }
46 }
```

The terminal output shows the following errors:

```
make[1]: Entering directory '/home/guichina/dev/infnet/FundamentosdeDesenvolvimentocomJava/TP1'
Building TP1 java project
./Main.java:24: error: bad operand types for binary operator '+'
    Date now = new Date() + 5;
                        ^
first type: Date
second type: int
./Main.java:37: error: cannot find symbol
    println("Age: " + age1);
                    ^
symbol:   variable age1
location: class Main
./Main.java:46: error: incompatible types: String cannot be converted to int
    final int age = inputScanner.nextLine();
                    ^
3 errors
make[1]: *** [makefile:7: build] Error 123
make[1]: Leaving directory '/home/guichina/dev/infnet/FundamentosdeDesenvolvimentocomJava/TP1'
make: *** [makefile:11: run] Error 2
```

Dissertação dos erros presentes:

No **exercício 7**, foi cometido um erro ao tentar somar diretamente um valor inteiro a um objeto `Date`, o que não é permitido no Java; o correto seria usar `System.currentTimeMillis()` para fazer operações com tempo. No **exercício 8**, há um erro de referência a uma variável inexistente chamada `age1`, quando o nome correto da variável declarada é `age`. Já no **exercício 9**, houve um erro de tipo ao tentar atribuir diretamente o resultado de `nextLine()` (uma `String`) a uma variável do tipo `int`; o valor lido como texto deveria ser convertido usando `Integer.parseInt()`.

Os erros descritos são os apresentados pelo compilador do java na imagem anexada.

Debugando a aplicação:

The screenshot shows an IDE with the following components:

- VARIABLES:** Local variables: `inputScanner = Scanner@10`, `name = "guilherme"`, `age = 20`.
- WATCH:** Empty.
- CALL STACK:** Thread [main] PAUSED ON BREAKPOINT. Stack frames: `Main.exerc9()` (Main.java: 47), `Main.main(String[])` (Main.java: 55), `Thread [Reference Handler]` (RUNNING), `Thread [Finalizer]` (RUNNING), `Thread [Signal Dispatcher]` (RUNNING), `Thread [Notification Thread]` (RUNNING), `Thread [Common-ClassLoader]` (RUNNING).
- BREAKPOINTS:** Uncaught Exceptions, Caught Exceptions, `Main.java` (47), `Main.java` (50), `Main.java` (52), `Main.java` (55).
- Code:** `class Main { public static void exerc8() { ... } public static void exerc9() { ... } }`. A breakpoint is set at line 47.
- Terminal:**

```
My name: Guilherme China
Current date: 11/05/2025 02:47:37
----- Exercise: 8 -----
Dog name: Churros
Salary: 4500.5
Age: 20
----- Exercise: 9 -----
Type your name: guilherme
Type your age: 20
```