Introduktion til kurset

Program

- 08:30 Praktisk information
- 09:00 Installering af Java og IntelliJ
- 10:00 Pause
- 10:15 Første program
- 11:30 Opsamling

Praktisk information

Hardware og software

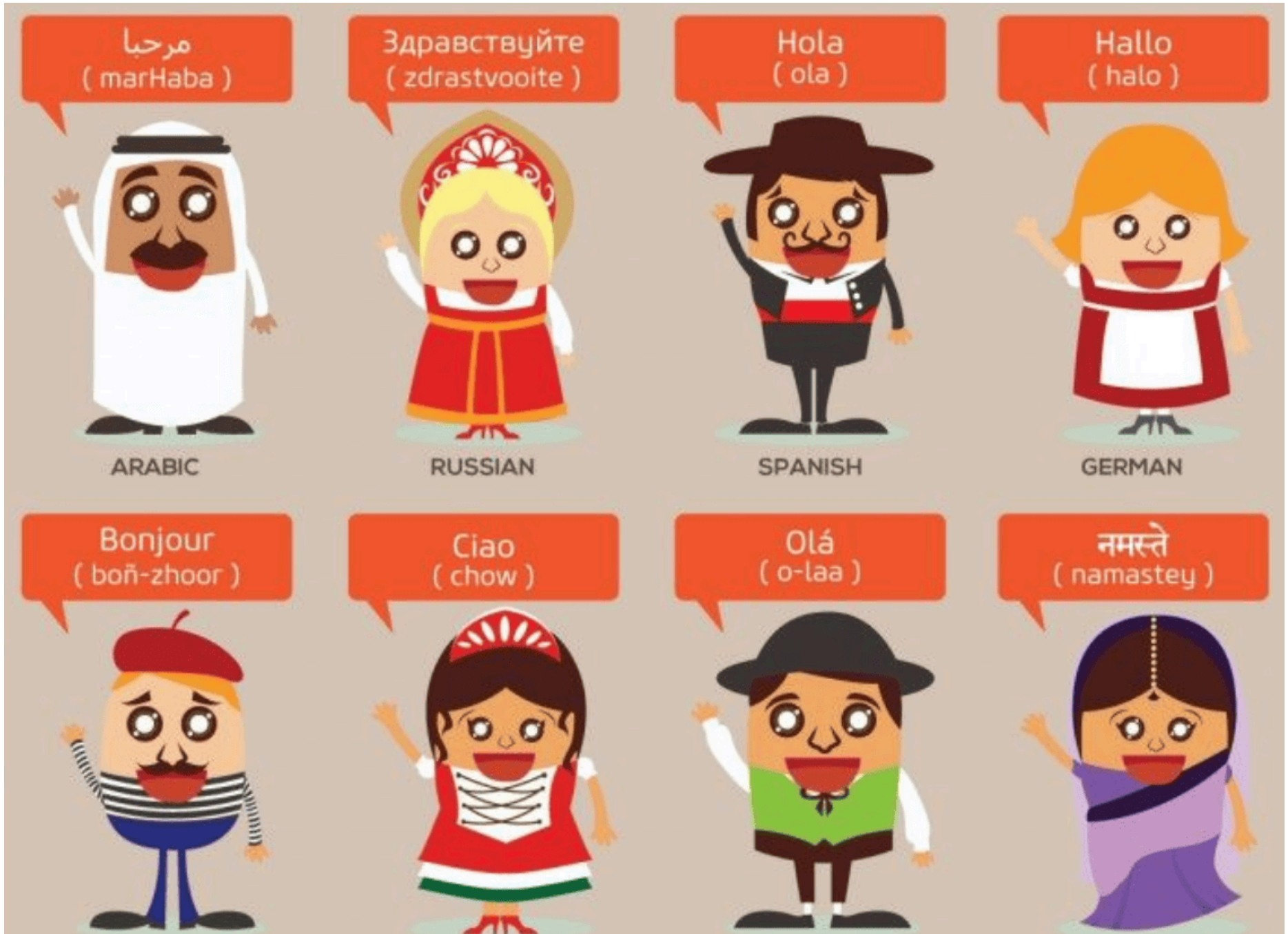

[redacted]

- [redacted] og udfører instrukser
- [redacted] er [redacted] arbejdshukommelse
- [redacted] er [redacted] hukommelse - filer

-  styrer computeren
  - fx Windows, MacOS, Android, iOS
-  får computeren til at kommunikere med hardware
  - fx keyboard, printer, skærm
-  er det, vi bruger computeren til
  - fx Word, Photoshop, browsere, spil

5 min med sidemand

Programmeringssprog


مرحبا
(marHaba)
ARABIC
Здравствуйте
(zdrastvooite)
RUSSIAN
Hola
(ola)
SPANISH
Hallo
(halo)
GERMAN
Bonjour
(boñ-zhoor)
Ciao
(chow)
Olá
(o-laa)
नमस्ते
(namastey)

Hello World in 30 different languages

C
```
#include

int main(void)
{
    puts("Hello, world!");
}
```

Matlab
```
disp('Hello, world!')
```

Pascal
```
WriteLn('Hello, world!');
```

Go
```
println('Hello, world!');
```

F#
```
printfn "Hello World"
```

Lisp
```
(print "Hello world")
```

C#
```
Console.WriteLine("Hello, world!");
```

Ruby
```
puts "Hello World!"
```

Java
```
System.out.println("Hello World!");
```

JavaScript
```
console.log 'Hello, world!'
```

C++
```
#include

int main()
{
    std::cout << "Hello, world!
";
    return 0;
}
```

CoffeeScript
```
console.log 'Hello, world!'
```

Python
```
print('Hello, world!')
```

PHP
```
echo "Hello World!";
```

Algol
```
BEGIN DISPLAY("HELLO WORLD!") END.
```

Delphi
```
program HelloWorld;
begin
  Writeln('Hello, world!');
end.
```

Assembly
```
    global  _main
    extern  _printf

    section .text
_main:
    push    message
    call    _printf
    add     esp, 4
    ret
message:
    db  'Hello, World', 10, 0
```

Pascal
```
program HelloWorld(output);
begin
  Write('Hello, world!')
end.
```

Perl
```
print "Hello, World!\n";
```

Tcl
```
puts "Hello World!"
```

Cobol
```
       IDENTIFICATION DIVISION.
       PROGRAM-ID. hello-world.
       PROCEDURE DIVISION.
           DISPLAY "Hello, world!"
           .
```

Dart
```
main() {
  print('Hello World!');
}
```

Kotlin
```
fun main(args: Array<String>) {
    println("Hello World!")
}
```

TypeScript
```
console.log 'Hello, world!'
```

Scala
```
object HelloWorld extends App {
   println("Hello, World!")
 }
```

Haskell
```
module Main where

main :: IO ()
main = putStrLn "Hello, World!"
```

R
```
cat("Hello world\n")
```

Swift
```
println('Hello, world!');
```

HTML
```
Hello world
```

Fortran
```
program helloworld
    print *, "Hello world!"
end program helloworld
```

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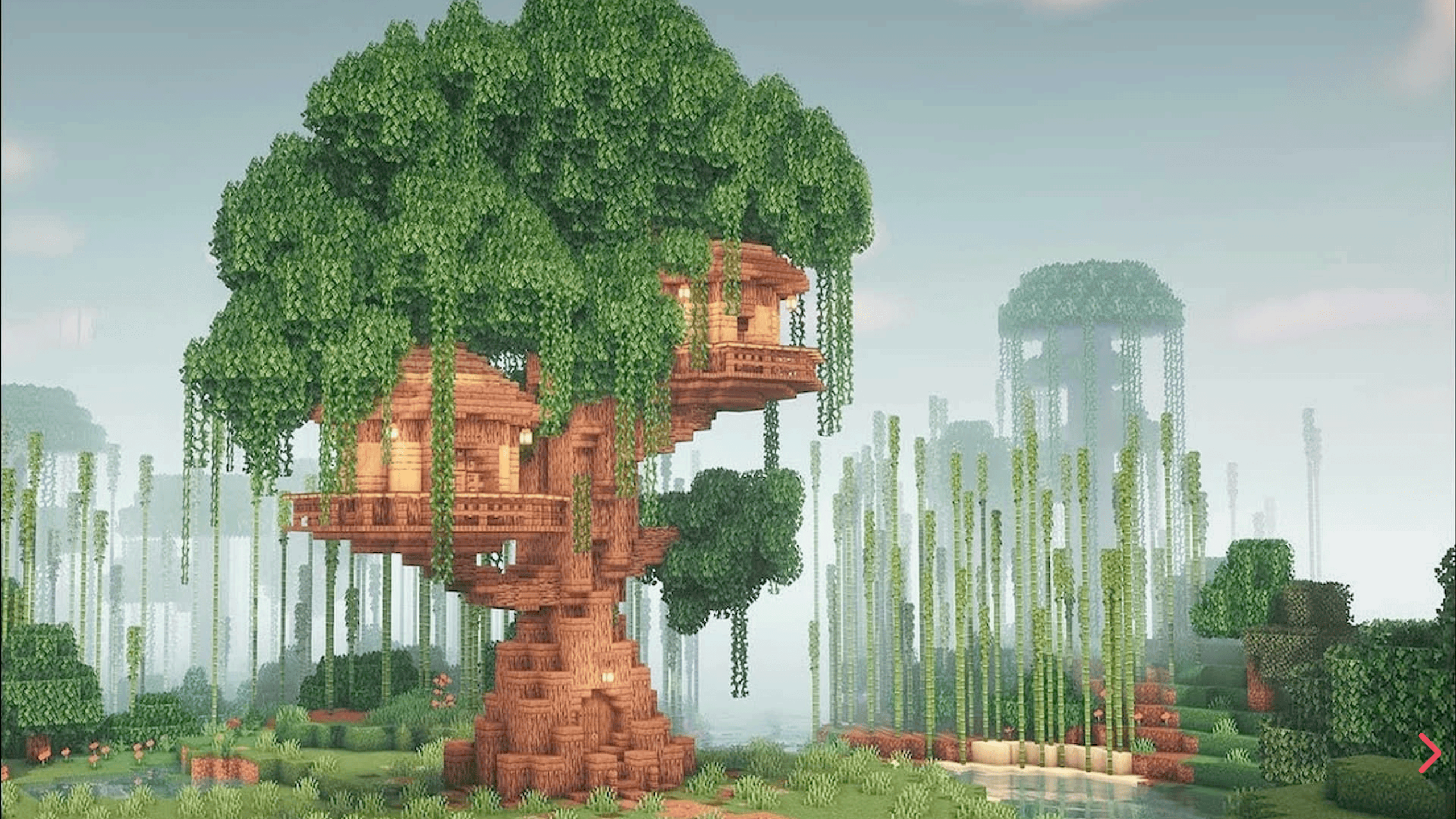
May 2025	May 2024	Change	Programming Language	Ratings
1	1		Python	25.35%
2	3	↑	C++	9.94%
3	2	↓	C	9.71%
4	**4**		**Java**	**9.31%**
5	5		C#	4.22%
6	6		JavaScript	3.68%
7	8	↑	Go	2.70%
8	7	↓	Visual Basic	2.62%
9	11	↑	Delphi/Object Pascal	2.29%

Java er et **general purpose programmeringssprog**



Syntaks

Syntax - regler for rækkefølge af ord

"spiser en sandwich jeg"

Udsagnsled + **grundled** + **genstandsled**

eller

"jeg spiser en sandwich"

grundled + **udsagnsled** + **genstandsled**

Korrekt

```
int age = 18;
```

Forkert

```
age = 18 int;
```

```
int = 18 age;
```

```
INT age = 18;
```

Korrekt

```
System.out.println("Hello, World!");
```

Forkert

```
System.out.println Hello, World!;
```

```
System.out.println(Hello, World!");
```

```
System.out println("Hello, World!");
```

Korrekt

```
public class HelloWorld {
    public static void main(String[] args) {
        System.out.println("Hello, World!");
    }
}
```

Forkert

```
public class HelloWorld {}
    public static void main(String[] args) {
        System.out.println("Hello, World!");
```

```
public class HelloWorld {
    public static void (String[] args) {
        System.out.println("Hello, World!");
    }
}
```

```
public HelloWorld {
    public static void main(String[] args) {
        System.out.println("Hello, World!");
    }
}
```

Første program

1. Lav en fil, der hedder `HelloWorld.java`
2. Skriv følgende kode i filen og gem den:

```java
public class HelloWorld {
    public static void main(String[] args) {
        System.out.println("Hello, World!");
    }
}
```

3. Compile med

```
javac HelloWorld.java
```

4. Kør programmet med

```
java HelloWorld
```

5. Hvad sker der?

Kompilering

Compileren `javac` oversætter kildekode `HelloWorld.java` til bytecode `HelloWorld.class`

```
javac HelloWorld.java
```

Java bytecode

er en binær fil, der ender på `.class`

Whitespace

- mellemrum, tabulatorer og linjeskift
- **ikke** vigtigt for computeren

```java
public class HelloWorld {
    public static void main(String[] args) {
        System.out.println("Hello, World!");
    }
}
```

er **korrekt** syntaks

```
public class HelloWorld {
public static void main(String[] args) {
System.out.println("Hello, World!");
}
}
```

er **også korrekt** syntaks

```
public class HelloWorld { public static void main(String[] args) { System.out.println("Hello, World!"
```

er **også korrekt**

Hvorfor synes I vi skal bruge **indrykning**?

Tre ting du tager med fra fra i dag?