

# Programming Introduction

# Program

Examples of program/software

LibreOffice, Office, Firefox, Chrome, Safari,  
Android, GNU/Linux, iOS, Windows,  
PostgreSQL, Instagram.....

# Program

Who made who?

Who created these program (services)?

# Program

What is a program?

# Programming - what is it anyway?

A sequence of instructions

# Programming

## Sequence for human

Put clothes in washing machine

Put washing powder in machine

Chose program nr 3

Press "Power on"

# Programming

Sequence for human

Move forward

Move left

Move left

Move forward

# Programming

Sequence for computer

```
move_forward();
```

```
move_left();
```

```
move_left();
```

```
move_forward();
```



# Programming

Sequence for human

Jump up and down 3 times

# Programming

Sequence for human

```
remember 3
```

```
while number is greater than 0
```

```
jump
```

```
decrease remembered number
```

# Programming

Sequence for computer

```
jumpsLeft =3;  
while ( jumpsLeft >0) {  
    jump ( ) ;  
    jumpsLeft = jumpsLeft - 1 ;  
}
```

# Programming

Programming language:

```
move_forward
```

```
move_left
```

```
move_left
```

```
move_forward
```

# Programming language

Unlike human languages a programming language has

- strict syntactical rules
- with a set of allowed instructions

The goal is to create programs - by writing code in a more human friendly language (than the CPU's instruction set).

```
#include <stdio.h>
```

```
int main(int argc, char **argv) {  
    printf("Hello world!");  
    return 0;  
}
```

```
pushq    %rbp  
.cfi_def_cfa_offset 16  
.cfi_offset 6, -16  
movq %rsp, %rbp  
.cfi_def_cfa_register 6  
subq $16, %rsp
```

```
procedure  
Hello_World is  
    use Ada.Text_IO;  
begin  
    Put_Line("Hello,  
world!");  
end;
```

```
echo "Hello world"
```

```
PRINT "Hello world"
```

```
print "Hello, world!"
```

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

```
+++++ +++++  
[  
    > +++++ ++  
    > +++++ +++++  
    > +++
```