C2110 *UNIX and programming*

Lesson 7

PS / 2020 Distance form of teaching: Rev3

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Summary L6

➢ **Bash**

Variables

In Bash, a variable means a **named location** in the memory that contains a value. The value of a Bash variable is always of **string (text) type**.

cannot be a space between the **variable name** and **=**

Variable settings:

```
$ VARIABLE_NAME=value
$ VARIABLE_NAME="value with spaces"
```

Access to the value of variable:

```
$ echo $VARIABLE_NAME
```

"TEXT${VARIABLE}TEXT"

To delete a variable:

```
$ unset VARIABLE_NAME
```

if the value is to be part of a text, the variable name is enclosed in braces

Overview of all defined variables:

```
$ set
```

Arithmetic Operations

- Arithmetic operations with integers can be performed in **((...))** block.
- Characters in the block are interpreted as variable names. Therefore, it is not necessary to use $ operator to obtain their value.
- The values of the variables are interpreted as integers. If the conversion fails, a value of zero is used.

Possible entries:

```
(( I = I + 1 ))
(( I++ ))
```

Arithmetic operation with obtaining the result:
```
echo "Value I is increased by one : $(( I + 1 ))"
```

the value of the result is written to the position of $ sign

More details: man bash

Input/Output

Input

- Script arguments
  - Available in special variables (0, 1, 2, …, 9, #)

- Command **read** serves for **reading text** from standard input and storing it in variables.

```
read A     # the whole line is stored in variable A

read A B   # the first word is stored in variable A
           # the rest of the line in variable B
```

Output

- Command **echo** serves for **unformatted** printing to standard output current.

```
echo [options] [string1] [string2] ...
```

- Command **printf** serves for printing **formatted** texts and numbers into the standard output stream.
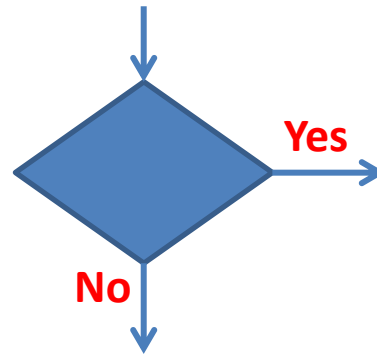
```
printf [format] [value1] [value2] ...
```
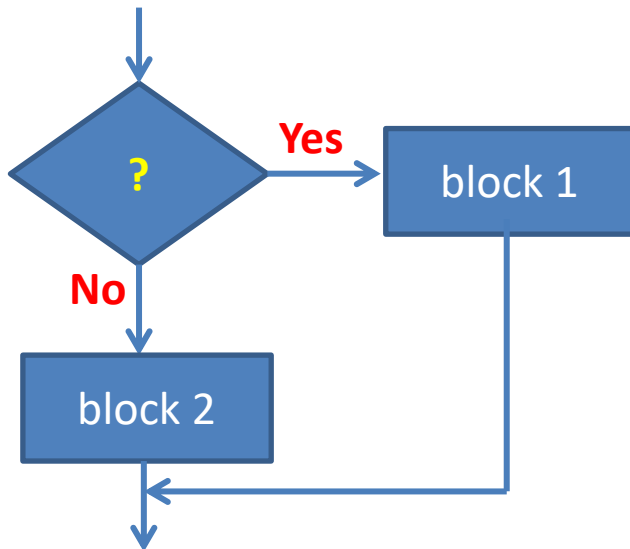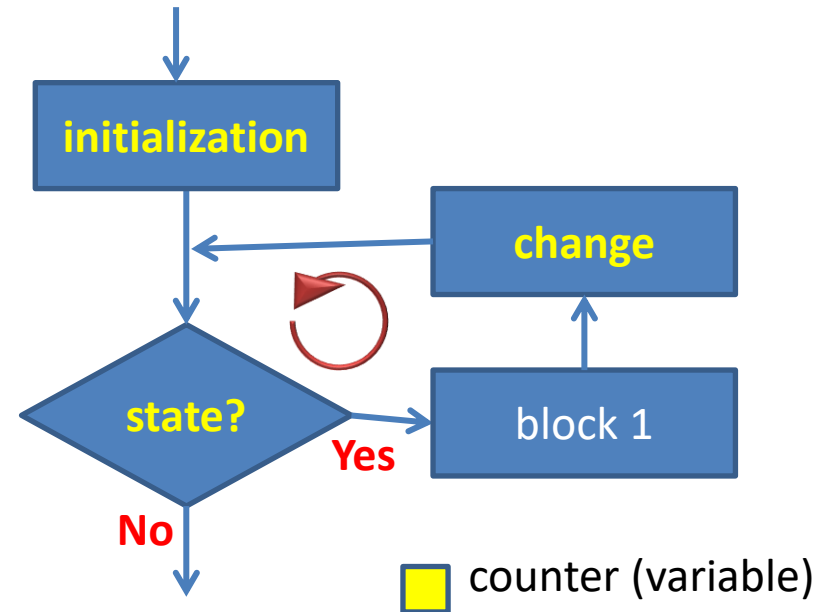
New Subject

➢ **Bash**

Decision Block

Typical use of decision block

Conditional block execution (conditions)

Cyclic block execution (loops)

counter (variable)

Content

- ➢ **Decision block**
  - **conditions, cycles**

- ➢ **Decision making**
  - ➢ **The return value of the process**
    - **exit command**
  - ➢ **Test command**
    - **comparison operators, logical operators**
    - **simplified notation**

- ➢ **Conditions**

- ➢ **Loops: while/until**