# **1.5 Getchar and putchar**

***int c;***

***c = getchar();*** get input for 1 character at a time and save it in c variable

***putchar();*** prints all characters that are being saved in c after hitting enter

*printf("%d", c);* print character as ASCII-number

*printf(“%s”, s);* print string (multiple characters)

**EOF:** equal to int -1 -> not equal to any character. Call EOF with ctrl+z

Print characters:

1. int c = getchar(); assume x = 65 //=letter A
2. printf("%c", c)

OR printf("%c", 65); / printf("%c",´A´)

OR putchar(x);

Define a string:

char string1[5] = "Hello";

    printf("%s", string1);

Define an int array:

int numbers[] = {0, 1, 2, 3};

//get size of int array

size\_t len = sizeof(numbers) / sizeof(int);

//get decimal value of digit

    if(s[i] >= '0' && s[i] <= '9')

        hex = s[i] - '0'; //convert char to int

VSCODE

Run program: ctrl+alt+n (Shortcut name: „Run Code“)

Cancel program: Bin Icon in Terminal (Shortcut name: „Stop Code Run“)

Output in terminal: Settings -> „run in terminal“ -> Check „run in terminal“-option

Put comment Shortcut: Ctrl + Shift + C

# **Binary system & range of data types**

Ein Bild, das Text, Screenshot, Schrift, Dokument enthält.

Automatisch generierte Beschreibung

Binary system

Convert binary to decimal: <https://www.youtube.com/watch?v=kTcpd4ef2lU>

Convert decimal to binary: <https://youtu.be/rsxT4FfRBaM>

Data types

Range of int explained: <https://www.youtube.com/watch?v=zxb8DvLUqcM>

# Range of all data types: https://youtu.be/b0KEMSdrBDI

Signed vs. unsigned numbers

<https://www.youtube.com/watch?v=lP4xtbFgmhQ>

<https://www.youtube.com/watch?v=aHvHKv9BTZg>

# **2.3/2.7 Constants & Hexadecimal numbers**

Enums: <https://youtu.be/9QdJExC2AVg>

An enumerated type is a user defined type which is used to assign names to integral constants because names are easier to handle in program.

**Syntax:***enum bool { false, true };*

Hexadecimal numbers:

Convert hexadecimal to decimal: <https://youtu.be/1tHgs0mrZ5I?si=7hM-vBRUGpxuQSYh>

Convert decimal to hexadecimal: <https://youtu.be/uVpQ9pPskNI?si=g-LWSzs2FE_aEyH0>

# **2.12 Precedence and Order of Evaluation** Ein Bild, das Text, Screenshot, Zahl, Schrift enthält. Automatisch generierte Beschreibung

# **3.8 Goto and Labels**

**Syntax:**

if(disasteer)

goto error;

error: … (label)

error2: … (label)

# **4.6 Static variables**

External static variables: Invisible outside of the file in which it is declared

Internal static variables maintain their values in their respective scope rather than coming and going each time the function is called. A static variable is initialized only the first time the block is entered.

# **5.1 Pointers**

The unary operator & gives the address of an object, so the statement

int \*p = &c;

\*p = 0; //c is now 0

assigns the address of c to the variable p, and p is said to "point to" c.

Pointer arguments enable a function to access and change objects in the function that called it.

void swap(int \*a, int \*b); //function arguments

swap(&x, &y); //call function with adresses