

Summary of Lesson 3

Operators

Operators which can be found also in Max/MSP

for calculation

+ - * / %

for comparison

> < >= <= == != && ||

Operators which can be not found in Max/MSP

for calculation

= += -= *= /= %= ++ --

- a += b a = a+b;
- a++ a += 1; a = a + 1;
- a++ and ++a is different expresion

Priority of operations

- There are priorities among operations (e.g. multiply -> add)
- With () parenthesis, you can force to change the priority

lesson3_1.c

```
#include <stdio.h>
/* += */
int main(void)
{
    int age = 26;
    age += 5;
    printf("five years later, I will be %d years old", age);
    return 0;
}
```

lesson3_2.c

```
#include <stdio.h>
/* increment */
int main(void)
{
    int age = 26;
    age++;
    printf("next years, I will be %d years old",age);
    return 0;
}
```

```
}
```

lesson3_3.c

```
#include <stdio.h>
/* when is it excuted */
int main(void)
{
    int age = 26;
    printf("this years, I became %d years old\n", age++);
    printf("next year, I will be %d years old\n", age);
    printf("2 years later, I will be %d years old\n", ++age);
    return 0;
}
```

lesson3_4.c

```
#includue <stdio.h>
/* priority test */
int main(void)
{
    int num;
    num = 2 + 5 * 3;
    printf("without parenthesis %d\n", num);
    num = (2 + 5) * 3;
    printf("with parenthesis %d", num);
    return 0;
}
```

Control Structure

What's control Structure?

- With Control Sturcture, you can make a **fork** and **loop** in your program
- Keywords, **if**, **else**, **else if**, **switch**, **default**, **do**, **while**, **for**, **? is necessary** for control structure
- **if** is like a **gate** object in Max/MSP
- **while**, **for** is like a **uzi** object in Max/MSP
- you can **nest** several control structures

if()

- put a number in the parenthesis next to keyword **if**
- if the number is more than 0(**true**), the content in the following {} parenthesis will be **executed**
- if the number is 0 or less than 0(**false**), the content in the following {} will be **skipped**.
- Dont write semicolon ; after if statment. it's not correct.

else

- if the condition of **if()** is false, the the content of parenthesis after **else** will be executed
- must be declared just after a parenthesis {} of if

else if()

- if the parameter of **if** is **false** and the parameter of else if is true, the content in the following parenthesis will be executed
- you can declare several **else if** at the same time

lesson3_5.c

```
#include <stdio.h>
/* if test */
int main(void)
{
    if(1)
    {
        printf("Hell is filled with amatuer musicians");
    }
    if(0)
    {
        printf("Hell is filled with composers without punctuality");
    }
    return 0;
}
```

lesson3_6.c

```
#include <stdio.h>
/* else test */
int main(void)
{
    if(0)
    {
        printf("Hell is filled with amatuer musicians");
    }
    else
    {
        printf("Hell is filled with composers without punctuality");
    }
    return 0;
}
```

lesson3_7.c

```
/* else if test */
#include <stdio.h>
int main(void)
{
```

```

    if(0)
    {
        printf("Hell is filled with amatuer musicians");
    }
    else if(1)
    {
        printf ("Hell is filled with microsoft products");
    }
    else
    {
        printf("Hell is filled with composers without punctuality");
    }
    return 0;
}

```

lesson3_8.c

```

#include <stdio.h>
/* first intelignce in your C program */
int main(void)
{
    float money = 2.8;
    if(money >= 3.0)
    {
        printf("I can take the tram.");
    }
    else
    {
        printf("I have to walk.");
    }
    return 0;
}

```

lesson3_9.c

```

#include <stdio.h>
/* smarter */
int main(void)
{
    float money = 2.8;
    short halbtax = 1;

    if(money >= 3.0)
    {
        printf("I can take the tram.");
    }
    else if( halbtax && money >= 2.0)
    {

```

```

        printf("I can take the tram.");
    }
    else
    {
        printf("I have to walk.");
    }
    return 0;
}

```

lesson3_10.c

```

#include <stdio.h>
/* What Thomas Peter thought, nested control structure */
int main(void)
{
    float money = 2.8;
    short halbtax = 0, generalAbonament = 1;

    if(generalAbonament)
    {
        printf("I can take the tram.");
    }
    else
    {
        printf("Oh.. I lost my G.A.\n");
        if(money >= 3.0)
        {
            printf("I can take the tram.");
        }
        else if(halbtax == 1 && money >= 2.0)
        {
            printf("I can take the tram.");
        }
        else
        {
            printf("I have to walk.");
        }
    }
    return 0;
}

```