

Lab 3.2.11.1 Big numbers

Objectives

Familiarize the student with:

- Big integer numbers
- Simple integer computations
- Conditional statements
- Printing on screen

Scenario

The most popular, human-readable way to write an IP (to be precise, IPv4) is to write 4 numbers separated with dots (i.e. 127.0.0.1). But it can also be written as one 32-bit number. To get this form, you must multiply all the parts of the IP number by powers of 256 ($256*256*256$, $256*256$, 256 and 1 - don't use precomputed versions). Write a program that asks for 4 numbers and then checks if these numbers are more than or equal to 0 and less than or equal to 255. Next, the program should write both forms of the IP address: human-readable and 32-bit number. Use the unsigned long *int* type; to print it, use the "%lu" format in *printf*. If any of the address parts don't meet the given criteria ($0 \leq x \leq 255$) then print only this simple error message: "Incorect IP Address.". Your version of the program must print the same result as the expected output.

```
#include <stdio.h>

int main()
{
    /* your code */
    return 0;
}
```

Example input

```
127
0
0
1
```

Example output

```
Human readable IP address is: 127.0.0.1
IP address as a 32-bit number: 2130706433
```

Example input

```
192
168
1
1
```

Example output

```
Human readable IP address is: 192.168.1.1
IP address as a 32-bit number: 3232235777
```

Example input

```
1
268
1
1
```

Example output

Incorrect IP Address.