Lab 9

source code

ex 1.1

```cpp
#include<iostream>

float thebiggestfloat(float f1, float f2, float f3)
{
    if(f1 >= f2 && f1 >=f3)
        return f1;
    if(f2 >= f1 && f2 >=f3)
        return f2;
    return f3;
}

int main()
{
    float f[3][3] = {
        {1.0, 3.3, 0.3},
        {0.2, 9.99, 0.0},
        {123.11, 231.0, 0.9999}
    };
    for(int i = 0; i < 3; i++)
    {
        std::cout<<thebiggestfloat(f[i][0], f[i][1],f[i][2])<<std::endl;
    }
}
```

output:

3.3

9.99

231

ex 1.2

```cpp
#include<iostream>
using namespace std;

int x = 10; // added global variable

void pprint(int x) {
    cout << "1: " << x << endl;
    ++x;
    cout << "2: " << x << endl;
}

int main() {
    int x = 6;

    cout << "0: " << x << endl;
    pprint(x);
    cout << "3: " << x << endl;
}
```

output:

```
0: 6
1: 6
2: 7
3: 6
```

ex 1.3

```cpp
#include <iostream>

float clipping(float x)
{
    float min = -25;
    float max = 30;
    if(x > max)
        return max;
    if(x < min)
        return min;
    return x;
}

int main()
{
    double step = 0.10;
    for(double i = -30-step; i < 35.1; i+=step)
    {
        i > -step && i < step ? i = 0: 0;
        std::cout<<clipping(i)<<std::endl;
    }
}
```

ex 1.4

```cpp
#include<iostream>
using namespace std;

struct Complex{
    float re;
    float im;
};

Complex f(Complex* in){
    Complex result = {in->im, in->re};
    return result;
}

int main(){
    Complex in = {3, 4};
    Complex r = f(&in);

    cout << r.re << endl;
    cout << r.im << endl;
}
```

ex 1.5

```cpp
#include <iostream>

struct test
{
    int var1;
    int var2;
};

void setToZero(test *tab, size_t size)
{
    for (size_t i = 0; i < size; ++i)
    {
        tab[i].var1 = 0;
        tab[i].var2 = 0;
    }
}

int main()
{
    test tab1[1000];
    setToZero(tab1, 1000);
}
```

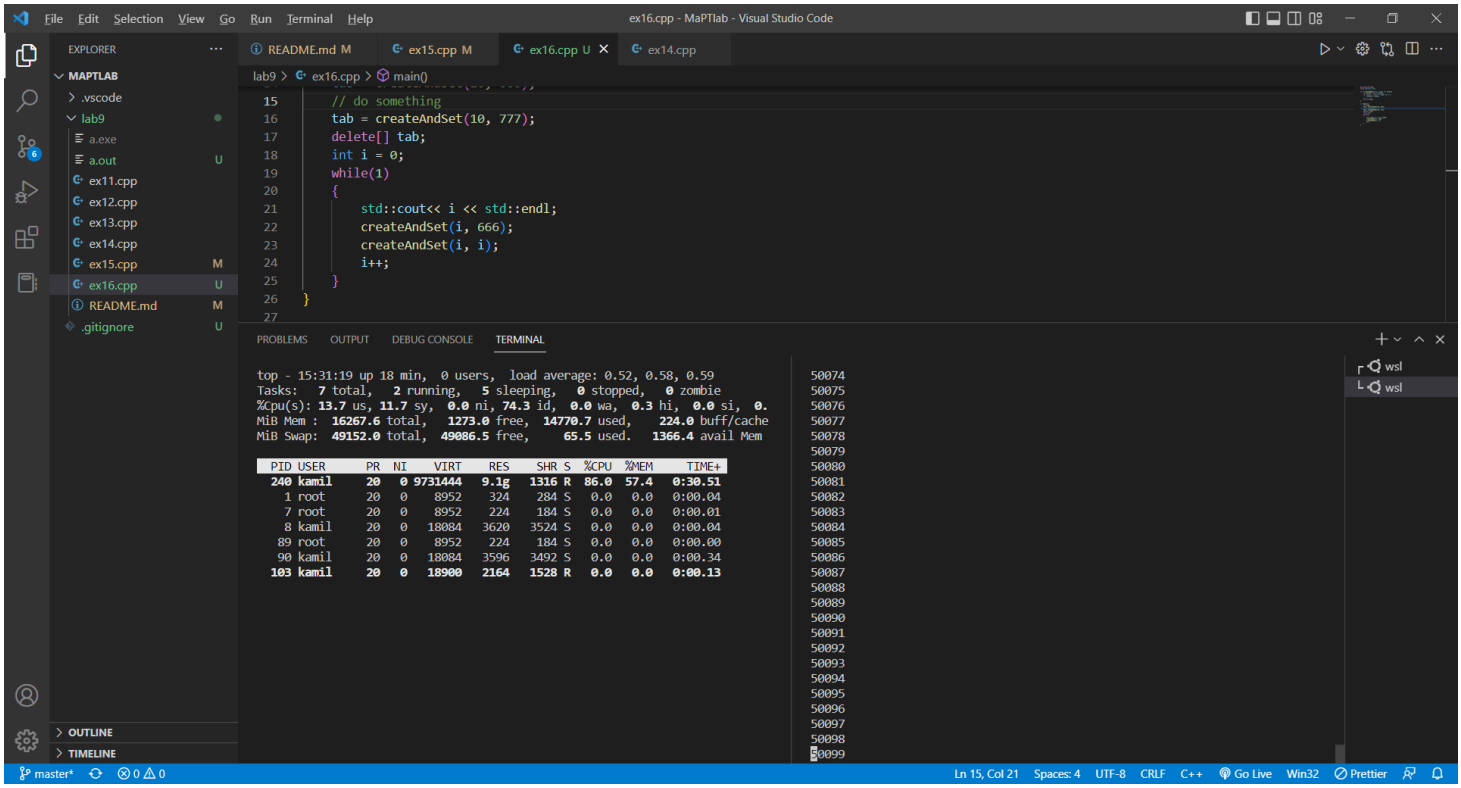
ex 1.6

```
#include<iostream>
using namespace std;

int *createAndSet(size_t size, int value){
    int *array = new int[size];
    for (size_t i = 0; i < size; ++i ) {
        array[i] = value;
    }
    return array;
}

int main(){
    int *tab;
    tab = createAndSet(10, 666);
    // do something
    tab = createAndSet(10, 777);
    delete[] tab;
    int i = 0;
    while(1)
    {
        std::cout<< i << std::endl;
        createAndSet(i, 666);
        createAndSet(i, i);
        i++;
    }
}
```

it took around 50k iterations to leave me with just around 1 GB of free memory


File Edit Selection View Go Run Terminal Help
ex16.cpp - MaPTlab - Visual Studio Code
EXPLORER
MAPTLAB
.vscode
lab9
a.exe
a.out
ex11.cpp
ex12.cpp
ex13.cpp
ex14.cpp
ex15.cpp
ex16.cpp
README.md
.gitignore
OUTLINE
TIMELINE
README.md M
ex15.cpp M
ex16.cpp U
ex14.cpp
lab9 > ex16.cpp > main()
// do something
tab = createAndSet(10, 777);
delete[] tab;
int i = 0;
while(1)
{
std::cout<< i << std::endl;
createAndSet(i, 666);
createAndSet(i, i);
i++;
}
}
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
top - 15:31:19 up 18 min, 0 users, load average: 0.52, 0.58, 0.59
Tasks: 7 total, 2 running, 5 sleeping, 0 stopped, 0 zombie
%Cpu(s): 13.7 us, 11.7 sy, 0.0 ni, 74.3 id, 0.0 wa, 0.3 hi, 0.0 si, 0.
MiB Mem : 16267.6 total, 1273.0 free, 14770.7 used, 224.0 buff/cache
MiB Swap: 49152.0 total, 49086.5 free, 65.5 used. 1366.4 avail Mem
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+
240 kamil 20 0 9731444 9.1g 1316 R 86.0 57.4 0:30.51
1 root 20 0 8952 324 284 S 0.0 0.0 0:00.04
7 root 20 0 8952 224 184 S 0.0 0.0 0:00.01
8 kamil 20 0 18084 3620 3524 S 0.0 0.0 0:00.04
89 root 20 0 8952 224 184 S 0.0 0.0 0:00.00
90 kamil 20 0 18084 3596 3492 S 0.0 0.0 0:00.34
103 kamil 20 0 18900 2164 1528 R 0.0 0.0 0:00.13
50074
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50087
50088
50089
50090
50091
50092
50093
50094
50095
50096
50097
50098
50099
wsl
wsl
master*
Ln 15, Col 21 Spaces: 4 UTF-8 CRLF C++ Go Live Win32 Prettier