

Detalii legate de laborator

laborator API

-20% sau 40% din nota finala

prima parte: MPI

-folosim visual studio, MPI e o librerie

-4 laboratoare legate de MPI

-avem de facut probleme pe care le prezentam la laboratorul urmator (o saptamana de introducere in concept si dupa o saptamana in care prezentam)

a doua parte: thread-uri in C++ si STL

-ne alegem o tema dintr-o lista pe care o implementam cu MPI, thread-uri si STL paralel

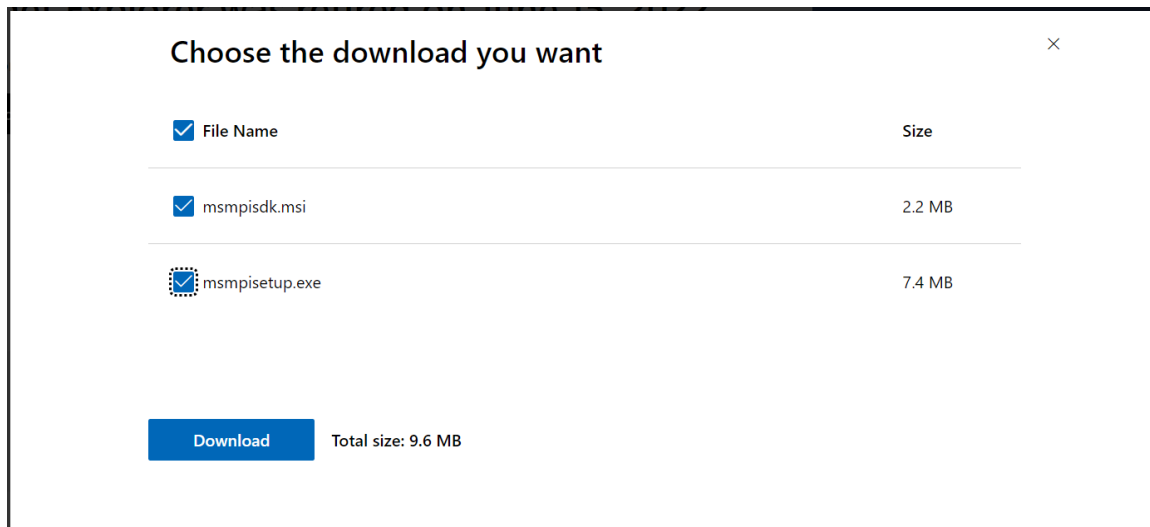
-daca vrem sa ne marim nota, putem sa prezentam mai multe laboratoare intr-o saptamana

-stabilim la inceput profesorul la care venim, nu putem sa venim la amandoi

Cum se face legatura intre libraria MPI si Visual Studio

-descarcam libraria MPI

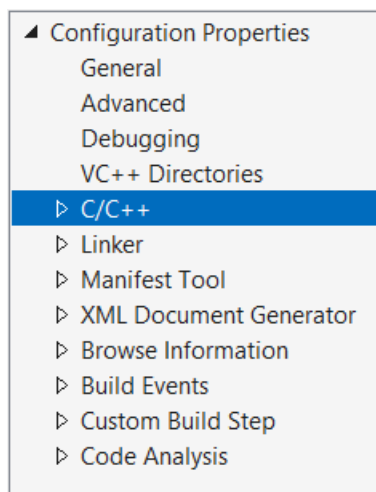
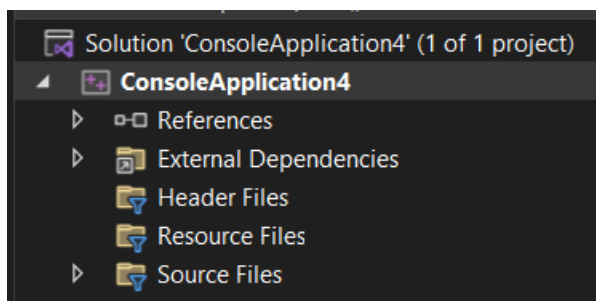
<https://www.microsoft.com/en-us/download/details.aspx?id=105289>



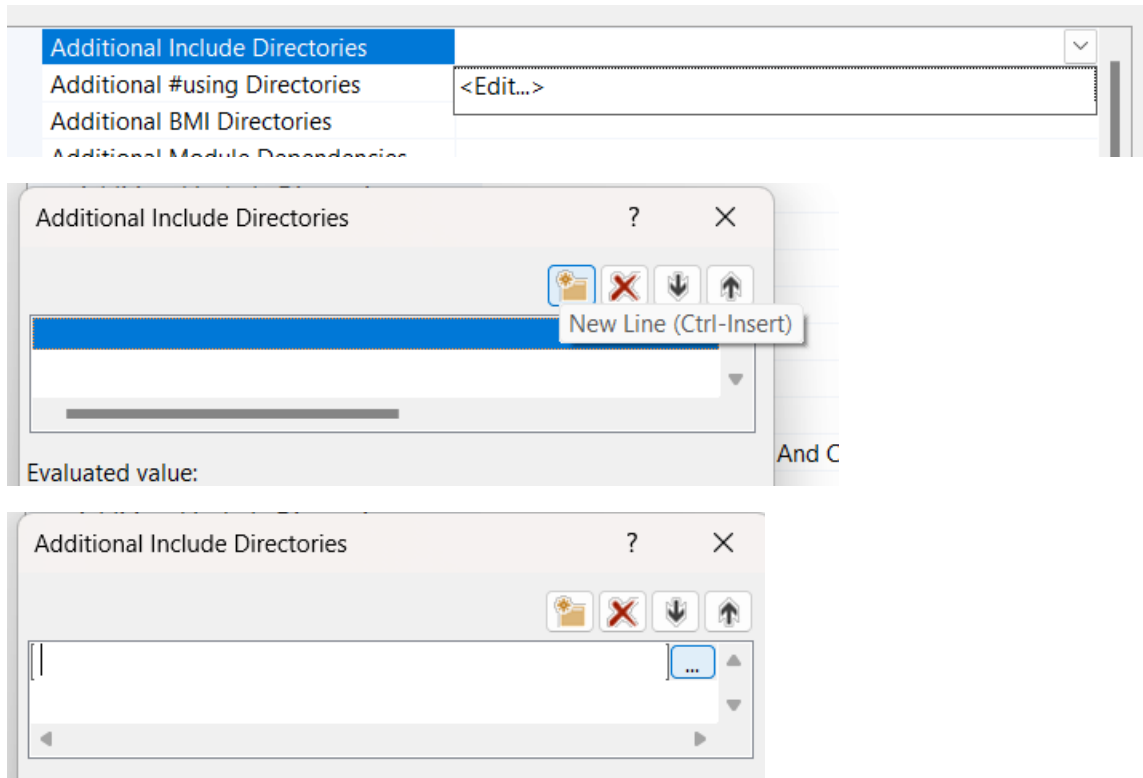
-dupa ce am descarcat, intram in downloads si le rulam pe amandoua

-cream un console application C++ in Visual Studio

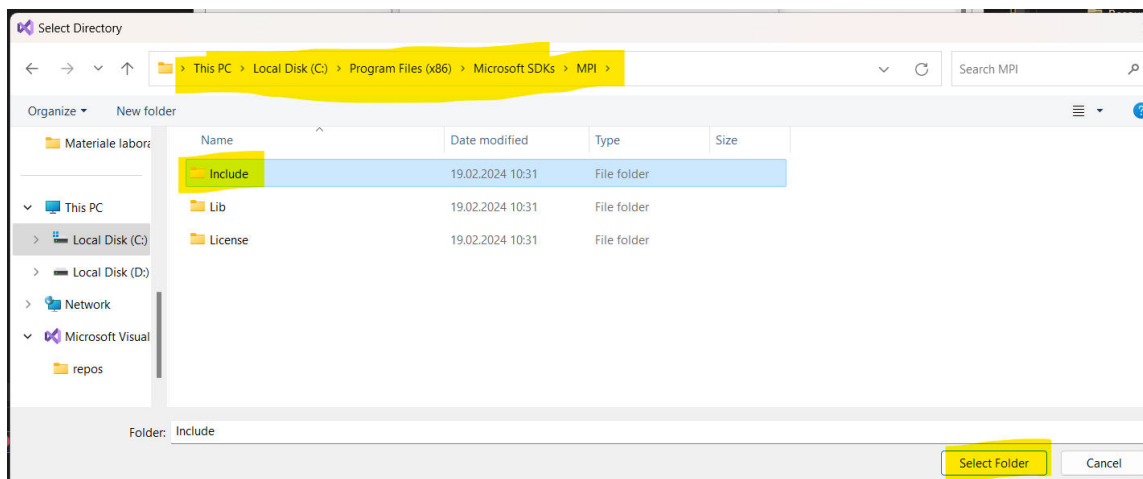
-click dreapta pe NUMELE PROIECTULUI, apoi Properties



-apasam pe Edit..., apoi New Line, apoi ...

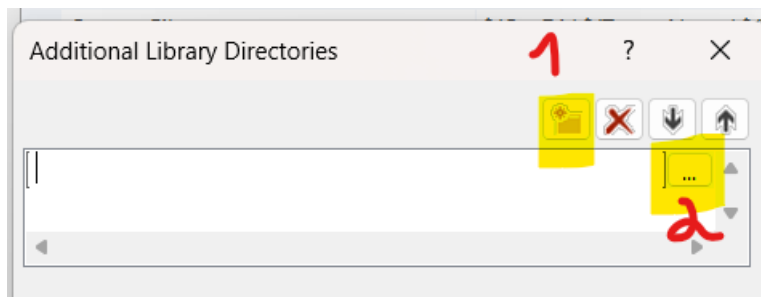
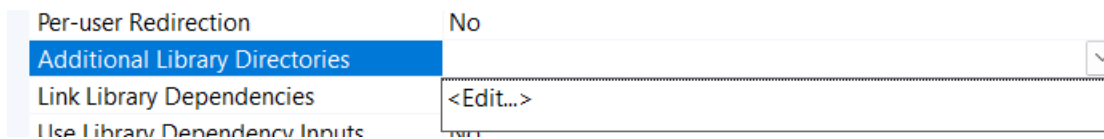
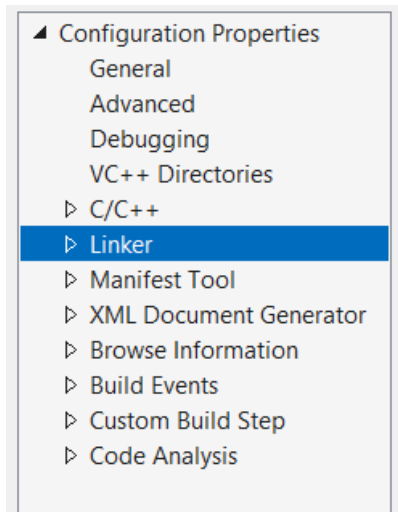


-selectam de la locatia aceasta fisierul include, apoi Select folder

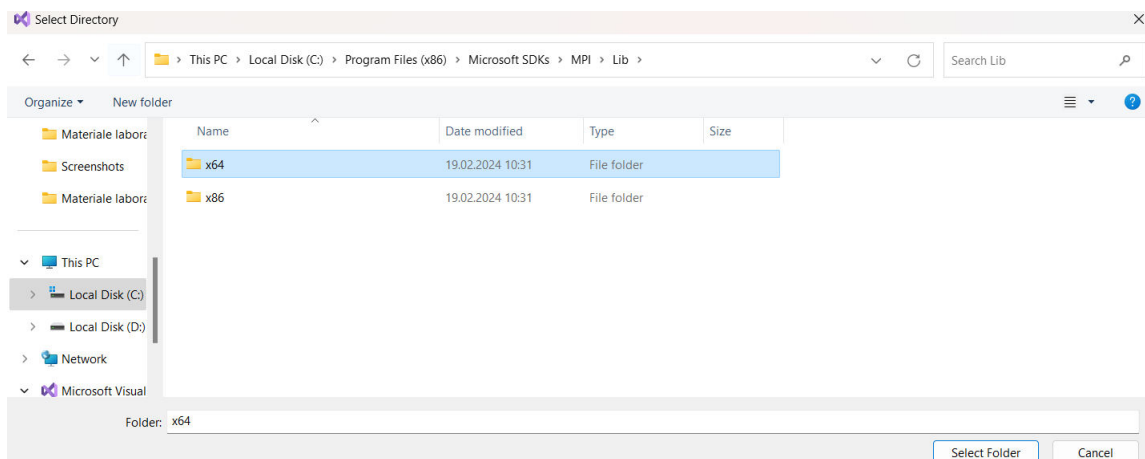


-apoi dam ok

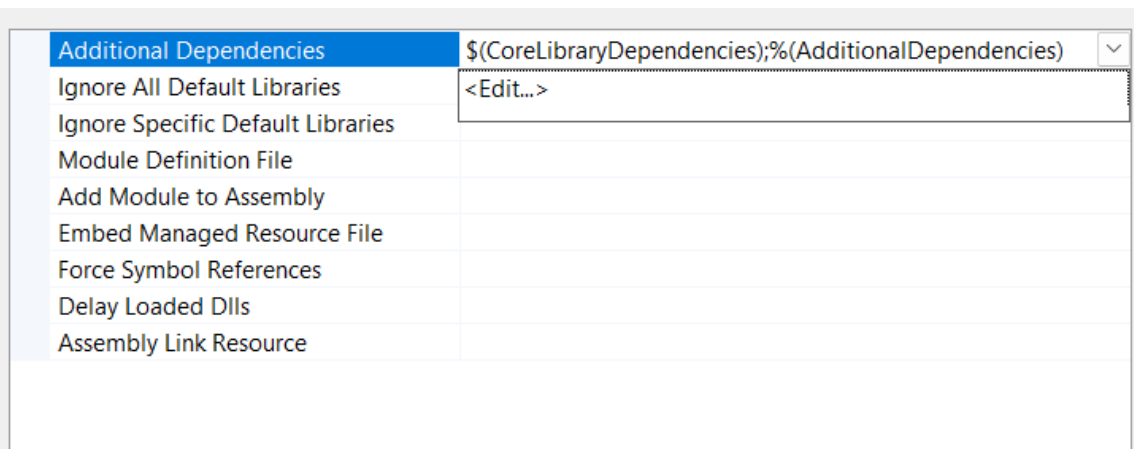
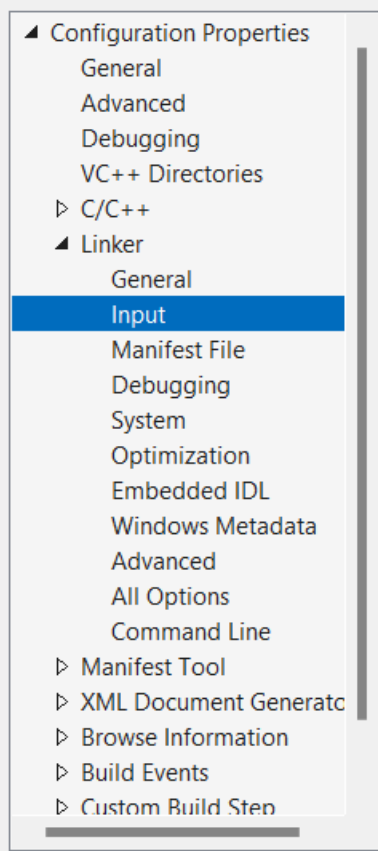
-tot la Properties selectam si Linker, dam pe Edit... la Additional Library Directions, apoi New Line si ...

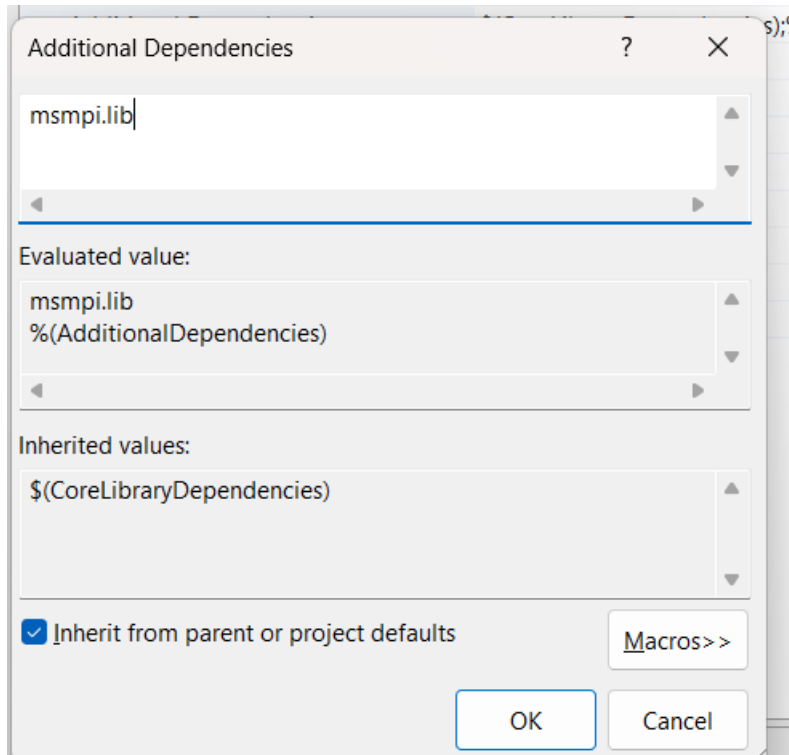


-selectam folderul de la locatia aleasa



-tot in Properties ne ducem aici





-adauga in program `#include "mpi.h"`

```
#include "mpi.h"
```

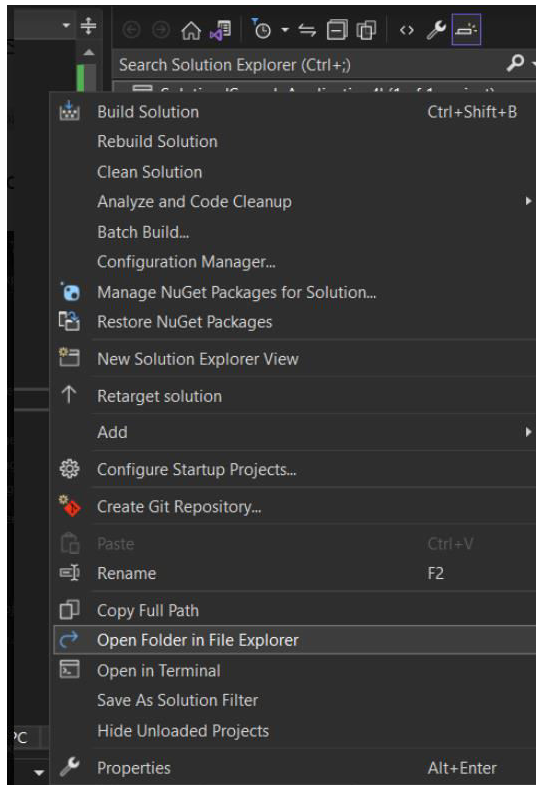
-daca dai un run si merge, inseamna ca ai adaugat cu succes libraria

Exemplu cu MPI

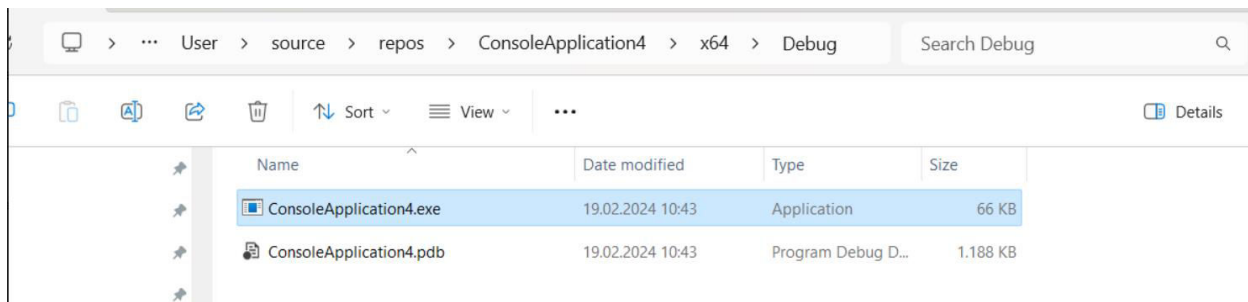
```
1
2 #include <iostream>
3 #include "mpi.h"
4
5 using namespace std;
6
7 int main()
8 {
9     MPI_Init(NULL, NULL);
10    cout << "Orice";
11
12    MPI_Finalize();
13    std::cout << "Hello World!\n";
14 }
15
16
```

Cum folosim command prompt pentru Debug

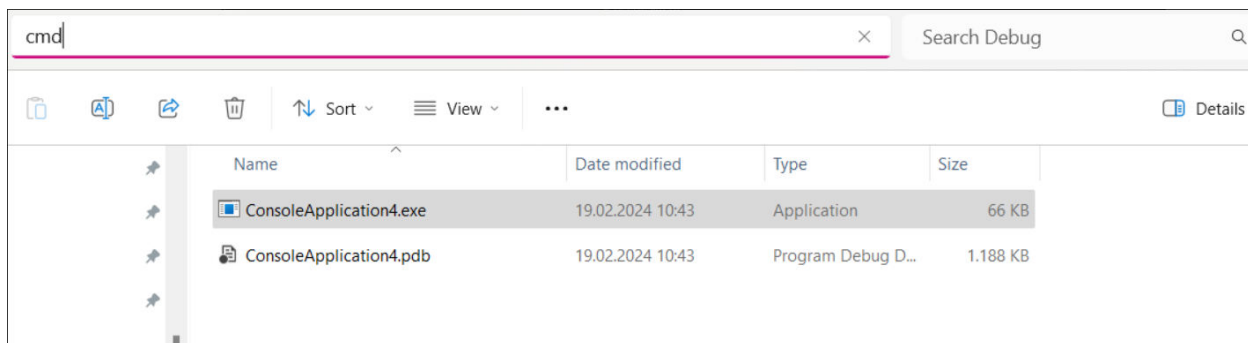
- avem codul scris, dam save (nu mai stiu sigur daca e obligatoriu sa salvezi)
- dupa ce am salvat, apasam click dreapta pe numele proiectului (in cazul de fata e ConsoleAppllication4) si selectam "Open Folder in File Explorer"



-mergem la calea x64/Debug, unde selectam cu un singur click .exe-ul



-dupa ce l-am selectat, scriem in bara cmd



-in cmd, avem urmatorul exemplu:


```
C:\Users\User\source\repos\ConsoleApplication4\x64\Debug>mpiexec -n 5 consoleapplication4
Hello World!
Hello World!
Hello World!
Hello World!
Hello World!

C:\Users\User\source\repos\ConsoleApplication4\x64\Debug>|
```