

Visual studio solution

1 Visual Studio

The purpose of this document is to describe the steps to obtain a project in a Visual Studio 2010 solution. Visual Studio is an IDE : Integrated Development Environment. It means that it is a program which contains everything needed to create programs : a compiler, a text editor, a debugger, etc...

Visual Studio allows you to structure your codes with “solutions” in a logical manner. A “solution” is a file which contains several “projects”. A “project” is a file which configures the settings of 1 program, or 1 library. So a solution can be considered as a set of programs or libraries that must be compiled and which are grouped in a logical manner.

2 Creation of a project

To create the project of an application which would simulate a rational number :

- File → New → Project
- Choose “Win32” (on the left) and “Win32 Console Application” (on the right)
- Set the name of the project in the bottom part : **rational**
- Set the name of the solution just below : **Rational**
- Click on “OK”. In the new window, click on “Next” at the bottom, then, on the right, select “Empty Project” **DO NOT FORGET THAT!!!**
- Click on “Finish”

Note that the solution itself is automatically created when you create a new project. Now that the project is created, the files must be added.

3 Header file

To add a header file :

- In **rational** (on the left), right click on “Header Files”.
- Then click on “Add” → “New Item”.
- Choose on the left “Code” and on the right “Header File (.h)”
- Set the file name at the bottom : **rational.h**
- Click on “Add”.

We now fill the file **rational.h** :

```
#ifndef RATIONAL_H
#define RATIONAL_H

typedef struct _Rat Rat;

struct Rat
{
    int num_;
    int den_;
};

Rat rat_new(int num, int den);
double rat_double_get(Rat r);

#endif /* RATIONAL_H */
```

4 Source file

To add a source file :

- In **rational** (on the left), right click on “Source Files”.
- Then click on “Add” → “New Item”.
- Choose on the left “Code” and on the right “C++ File (.cpp)”
- Set the file name at the bottom : **rational.c**

We now fill the file **rational.c** :

```
#include "rational.h"

Rat rat_new(int num, int den)
{
    Rat r;

    r.num_ = num;
    r.den_ = den;

    return r;
}

double rat_double_get(Rat r)
{
    return (double)r.num / (double)r.den;
}
```

5 Structure on the hard disk

On the hard disk, the solution will be in the folder “C :/*****/Mes Documents/Visual Studio/Projects”. This folder will be called “project_folder” below. Here is the structure of the solution **Rational** (relevant subfolders and files) that will be created on the hard disk in “project_folder”. The italic files are those added in the previous sections, the bold ones are those generated by the compilation of the solution.

- Rational/
 - Debug/
 - **rational.exe**
 - rational/
 - *rational.h*
 - *rational.c*