

Cairo university
Faculty of Computers and Information



Cairo University, Faculty of Artificial
Intelligence

CS231

Object Oriented Programming

Big real and Vole machine Static analysis

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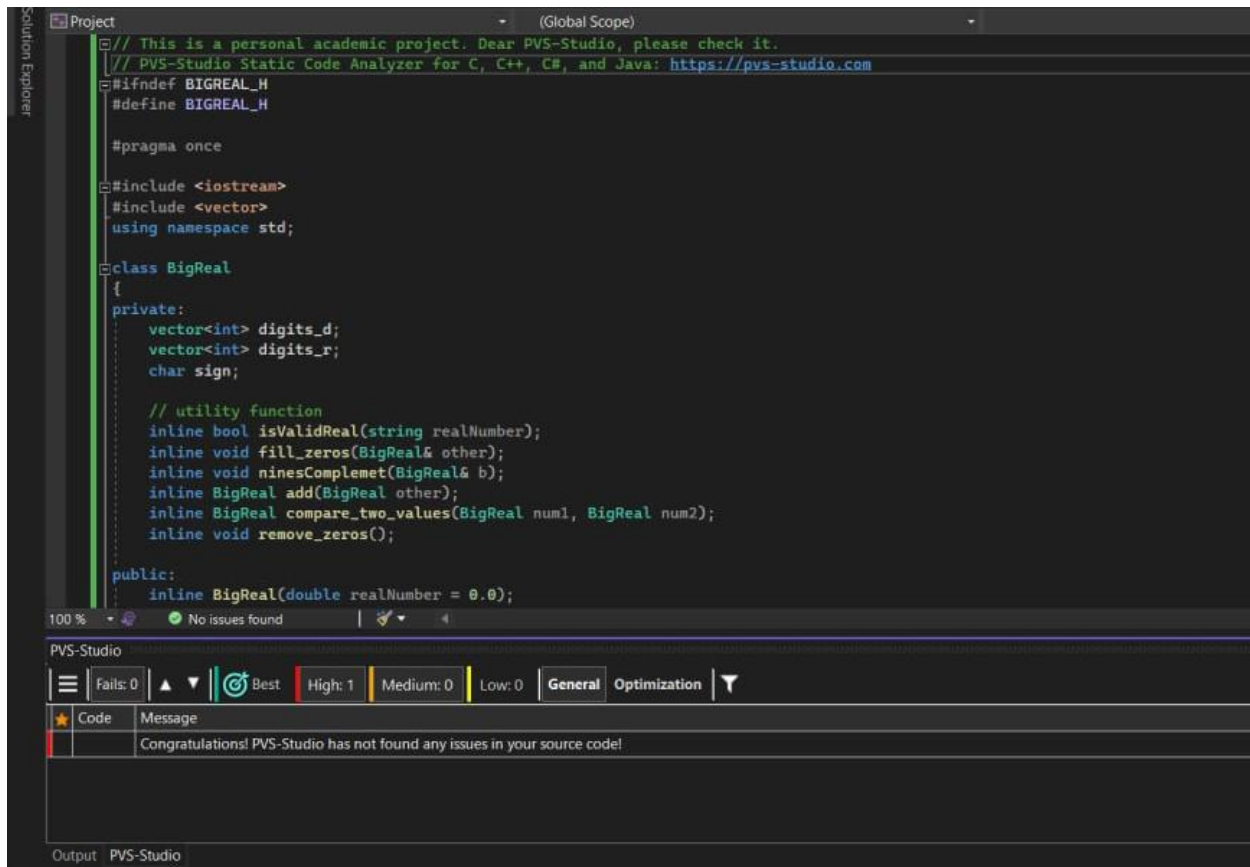
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Team members

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Static code Analysis and code quality [Big real]

Clear version of the code



The screenshot displays the PVS-Studio static code analysis interface. The main editor shows a C++ source file for a 'BigReal' class. The code is well-structured and clean, with no issues found by the analyzer. The interface includes a Solution Explorer on the left, a Project pane at the top, and a PVS-Studio status bar at the bottom. The status bar shows 'No issues found' and a 'Best' quality score. The output pane at the bottom displays a congratulatory message.

```
// This is a personal academic project. Dear PVS-Studio, please check it.
// PVS-Studio Static Code Analyzer for C, C++, C#, and Java: https://pvs-studio.com
#ifndef BIGREAL_H
#define BIGREAL_H

#pragma once

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

class BigReal
{
private:
    vector<int> digits_d;
    vector<int> digits_r;
    char sign;

    // utility function
    inline bool isValidReal(string realNumber);
    inline void fill_zeros(BigReal& other);
    inline void ninesComplemet(BigReal& b);
    inline BigReal add(BigReal other);
    inline BigReal compare_two_values(BigReal num1, BigReal num2);
    inline void remove_zeros();

public:
    inline BigReal(double realNumber = 0.0);
};
```

100 % No issues found

PVS-Studio

Fail: 0 Best High: 1 Medium: 0 Low: 0 General Optimization

Code	Message
	Congratulations! PVS-Studio has not found any issues in your source code!

Output PVS-Studio

Figure 1 Clean version of the code for Big real

Static code Analysis and code quality [Vole machine]

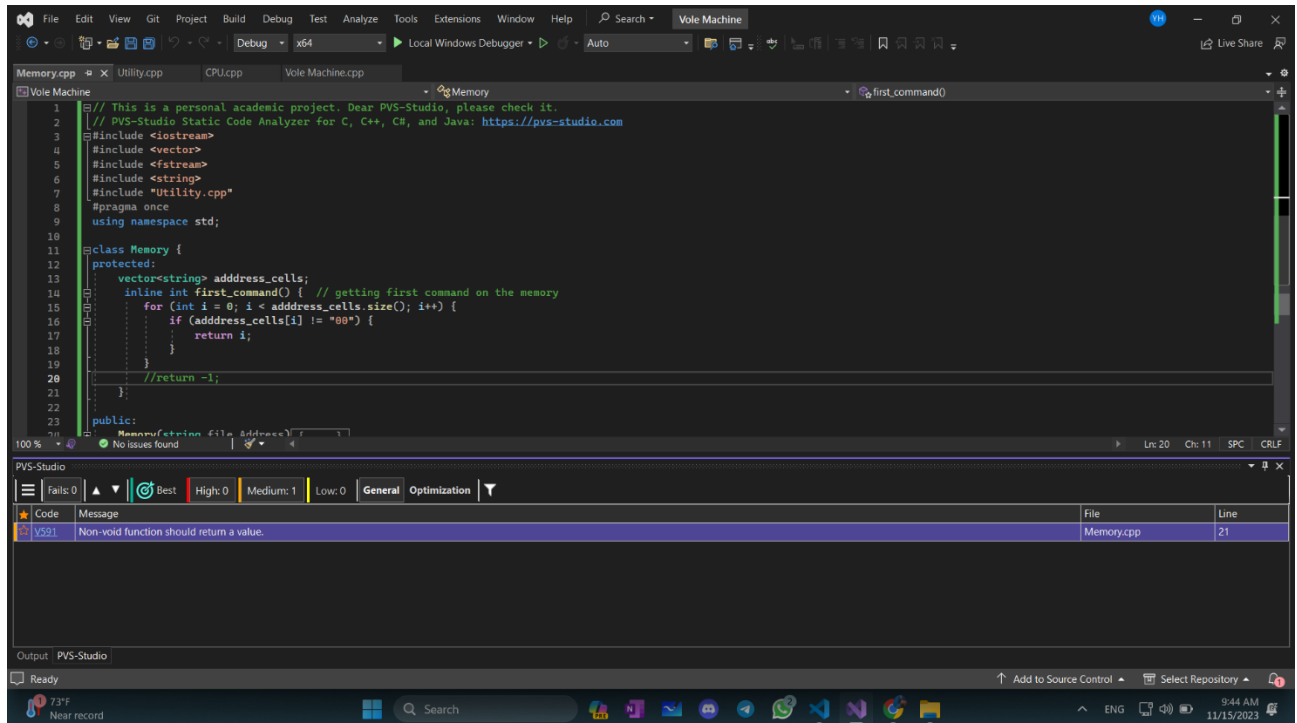


Figure 2 Some of the errors we have faced

Report for code analysis

User experience

The interface and user experience for the analyzing to -PVS tool – was very good with a friendly user experience interface and easy to use.

Important detected issues

- Multiple declarations for functions that is declared in the header file.
 - We have solved this problem with adding inline before the function as shown in the figure.
- Figuring out some logical errors while the workflow of the team till the final product.
- Data lose due to changing data types and masking.