Листинг показаний gdb и изменения ошибок.

Показания gdb в терминале WSL2 Ubuntu:

raison@WIN-4SUTO50B1V5:/mnt/c/Users/User/Desktop/Учёба/Фундаментальная информатика/Labs/lab10$ g++ -std=c++17 -g fileForDebbug.cpp

fileForDebbug.cpp: In function ‘int main()’:

fileForDebbug.cpp:5:13: error: ‘Input’ was not declared in this scope

5 | cout << Input a and b << endl;

| ^~~~~

fileForDebbug.cpp:7:5: error: expected initializer before ‘cin’

7 | cin << a << b;

| ^~~

fileForDebbug.cpp:9:11: error: ‘b’ was not declared in this scope

9 | c = a/b + a/0 + b/(a/0);

| ^

fileForDebbug.cpp:9:16: warning: division by zero [-Wdiv-by-zero]

9 | c = a/b + a/0 + b/(a/0);

| ~^~

fileForDebbug.cpp:9:25: warning: division by zero [-Wdiv-by-zero]

9 | c = a/b + a/0 + b/(a/0);

| ~^~

fileForDebbug.cpp:10:5: error: ‘calc’ was not declared in this scope; did you mean ‘calloc’?

10 | calc(c);

| ^~~~

| calloc

raison@WIN-4SUTO50B1V5:/mnt/c/Users/User/Desktop/Учёба/Фундаментальная информатика/Labs/lab10$ g++ -std=c++17 -g fileForDebbug.cpp

raison@WIN-4SUTO50B1V5:/mnt/c/Users/User/Desktop/Учёба/Фундаментальная информатика/Labs/lab10$ ls

a.exe fileForDebbug.cpp 'Приложение к лабораторной работе №10.docx'

a.out 'Отчёт по лабораторной работе №10.docx' 'Список специально допущенных ошибок.txt'

raison@WIN-4SUTO50B1V5:/mnt/c/Users/User/Desktop/Учёба/Фундаментальная информатика/Labs/lab10$ gdb a.out

GNU gdb (Ubuntu 12.1-0ubuntu1~22.04) 12.1

Copyright (C) 2022 Free Software Foundation, Inc.

License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>

This is free software: you are free to change and redistribute it.

There is NO WARRANTY, to the extent permitted by law.

Type "show copying" and "show warranty" for details.

This GDB was configured as "x86\_64-linux-gnu".

Type "show configuration" for configuration details.

For bug reporting instructions, please see:

<https://www.gnu.org/software/gdb/bugs/>.

Find the GDB manual and other documentation resources online at:

<http://www.gnu.org/software/gdb/documentation/>.

For help, type "help".

Type "apropos word" to search for commands related to "word"...

Reading symbols from a.out...

(gdb) help

List of classes of commands:

aliases -- User-defined aliases of other commands.

breakpoints -- Making program stop at certain points.

data -- Examining data.

files -- Specifying and examining files.

internals -- Maintenance commands.

obscure -- Obscure features.

running -- Running the program.

stack -- Examining the stack.

status -- Status inquiries.

support -- Support facilities.

text-user-interface -- TUI is the GDB text based interface.

tracepoints -- Tracing of program execution without stopping the program.

user-defined -- User-defined commands.

Type "help" followed by a class name for a list of commands in that class.

Type "help all" for the list of all commands.

Type "help" followed by command name for full documentation.

Type "apropos word" to search for commands related to "word".

Type "apropos -v word" for full documentation of commands related to "word".

Command name abbreviations are allowed if unambiguous.

(gdb) list 1

1 #include <iostream>

2 #include <string>

3 #include <vector>

4 using namespace std;

5

6 void calc(int c)

7 {

8 return;

9 }

10

(gdb) list main

7 {

8 return;

9 }

10

11 int main()

12 {

13 cout << " Input a and b " << endl;

14 int a, b;

15 cin >> a >> b;

16 string c;

(gdb) break 16

Breakpoint 1 at 0x13b0: file fileForDebbug.cpp, line 16.

(gdb) run

Starting program: /mnt/c/Users/User/Desktop/Учёба/Фундаментальная информатика/Labs/lab10/a.out

[Thread debugging using libthread\_db enabled]

Using host libthread\_db library "/lib/x86\_64-linux-gnu/libthread\_db.so.1".

Input a and b

4 0

Breakpoint 1, main () at fileForDebbug.cpp:16

16 string c;

(gdb) next 1

17 int c1 = a/b;

(gdb) next

Program received signal SIGFPE, Arithmetic exception.

0x00005555555553c9 in main () at fileForDebbug.cpp:17

17 int c1 = a/b;

(gdb) next

Program terminated with signal SIGFPE, Arithmetic exception.

The program no longer exists.

(gdb) run

Starting program: /mnt/c/Users/User/Desktop/Учёба/Фундаментальная информатика/Labs/lab10/a.out

[Thread debugging using libthread\_db enabled]

Using host libthread\_db library "/lib/x86\_64-linux-gnu/libthread\_db.so.1".

Input a and b

4 0

Breakpoint 1, main () at fileForDebbug.cpp:16

16 string c;

(gdb) step

17 int c1 = a/b;

(gdb) step

Program received signal SIGFPE, Arithmetic exception.

0x00005555555553c9 in main () at fileForDebbug.cpp:17

17 int c1 = a/b;

(gdb) step

Program terminated with signal SIGFPE, Arithmetic exception.

The program no longer exists.

(gdb) run

Starting program: /mnt/c/Users/User/Desktop/Учёба/Фундаментальная информатика/Labs/lab10/a.out

[Thread debugging using libthread\_db enabled]

Using host libthread\_db library "/lib/x86\_64-linux-gnu/libthread\_db.so.1".

Input a and b

4 0

Breakpoint 1, main () at fileForDebbug.cpp:16

16 string c;

(gdb) set var b = 1

(gdb) print b

$1 = 1

(gdb) next

17 int c1 = a/b;

(gdb) print c1

$2 = 0

(gdb) next

18 calc(c1);

(gdb) print c1

$3 = 4

(gdb) ptype c1

type = int

(gdb) ptype c

type = std::string

(gdb) step

calc (c=4) at fileForDebbug.cpp:8

8 return;

(gdb) backtrance

Undefined command: "backtrance". Try "help".

(gdb) backtrace

#0 calc (c=4) at fileForDebbug.cpp:8

#1 0x00005555555553de in main () at fileForDebbug.cpp:18

(gdb) next

9 }

(gdb) backtrace

#0 calc (c=4) at fileForDebbug.cpp:9

#1 0x00005555555553de in main () at fileForDebbug.cpp:18

(gdb) next

main () at fileForDebbug.cpp:19

19 vector<int> v = {1, 2, 3};

(gdb) backtrace

#0 main () at fileForDebbug.cpp:19

(gdb) set var b = 4

(gdb) next

20 cout << v[b] << endl;

(gdb) next

0

21 return 0;

(gdb) print v[4]

$4 = 0

(gdb) print v[5]

$5 = 0

(gdb) print v[10000]

$6 = 0

(gdb) print v[-1]

$7 = 0

(gdb) continue

Continuing.

[Inferior 1 (process 90) exited normally]

(gdb) next

The program is not being run.

(gdb) quit

raison@WIN-4SUTO50B1V5:/mnt/c/Users/User/Desktop/Учёба/Фундаментальная информатика/Labs/lab10$ g++ -std=c++17 -g fileForDebbug.cpp

raison@WIN-4SUTO50B1V5:/mnt/c/Users/User/Desktop/Учёба/Фундаментальная информатика/Labs/lab10$ gdb a.out

GNU gdb (Ubuntu 12.1-0ubuntu1~22.04) 12.1

Copyright (C) 2022 Free Software Foundation, Inc.

License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>

This is free software: you are free to change and redistribute it.

There is NO WARRANTY, to the extent permitted by law.

Type "show copying" and "show warranty" for details.

This GDB was configured as "x86\_64-linux-gnu".

Type "show configuration" for configuration details.

For bug reporting instructions, please see:

<https://www.gnu.org/software/gdb/bugs/>.

Find the GDB manual and other documentation resources online at:

<http://www.gnu.org/software/gdb/documentation/>.

For help, type "help".

Type "apropos word" to search for commands related to "word"...

Reading symbols from a.out...

(gdb) next

The program is not being run.

(gdb) run

Starting program: /mnt/c/Users/User/Desktop/Учёба/Фундаментальная информатика/Labs/lab10/a.out

[Thread debugging using libthread\_db enabled]

Using host libthread\_db library "/lib/x86\_64-linux-gnu/libthread\_db.so.1".

Input a and b

4 0

b is zero, please reinput b

0

b is zero, please reinput b

-1

b is incorrect, please reinput b from 0 to 2

10

b is incorrect, please reinput b from 0 to 2

1

2

[Inferior 1 (process 106) exited normally]

(gdb) quit

raison@WIN-4SUTO50B1V5:/mnt/c/Users/User/Desktop/Учёба/Фундаментальная информатика/Labs/lab10$ exit

Изначальный вариант программы:

#include <iostream>

using namespace std;

int main()

{

    cout << Input a and b << endl;

    int a, b

    cin << a << b;

    string c;

    c = a/b + a/0 + b/(a/0);

    calc(c);

    return 0;

}

Изменение ошибок:

Формат отображения:

<номер ошибки> <строка с ошибкой>

<номер ошибки> <исправленная строка/добавленная строка>

1. cout << Input a and b << endl;

1. cout << " Input a and b " << endl;

2.  int a, b

2. int a, b;

3. cin << a << b;

3. cin >> a >> b;

4. string c;

4. #include <string>

5. c = a/b + a/0 + b/(a/0);

5. c = a/b;

6. c = a/b;

6. int c1 = a/b;

7. calc(c1);

7. void calc(int c){ return; }

Исправленный вариант программы:

#include <iostream>

#include <string>

using namespace std;

void calc(int c)

{

    return;

}

int main()

{

    cout << " Input a and b " << endl;

    int a, b;

    cin >> a >> b;

    string c;

    int c1 = a/b;

    calc(c1);

    return 0;

}

Программа после добавления новых ошибок:

#include <iostream>

#include <string>

#include <vector>

using namespace std;

void calc(int c)

{

    return;

}

int main()

{

    cout << " Input a and b " << endl;

    int a, b;

    cin >> a >> b;

    string c;

    int c1 = a/b;

    calc(c1);

    vector<int> v = {1, 2, 3};

    cout << v[b] << endl;

    return 0;

}

Программа с исправленными новыми ошибками:

#include <iostream>

#include <string>

#include <vector>

using namespace std;

void calc(int c)

{

    return;

}

int main()

{

    cout << " Input a and b " << endl;

    int a, b;

    cin >> a >> b;

    string c;

    while(b==0)

    {

        cout << "b is zero, please reinput b" << endl;

        cin >> b;

    }

    int c1 = a/b;

    calc(c1);

    vector<int> v = {1, 2, 3};

    while ((b<0)||(b>=v.size()))

    {

        cout << "b is incorrect, please reinput b from 0 to " << v.size()-1 << endl;

        cin >> b;

    }

    cout << v[b] << endl;

    return 0;

}