CSmith++: Table of Contents

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Compiler Tester: Manual

Run Compiler Tester

1. Install Python 3.4.4 or up link
2. Open the "CompilerTester" folder
3. Click the app.py
4. Open http://localhost:5555/

(Without installing the compilers and setting them in the environment "PATH" a full test **can't** be executed).

Definitions

Test

A Test is comprised from several steps:

1. Generation – generates code by calling the defined fuzzer.
2. Compiler Tests – compile and run the code on each compiler defined.
3. Evaluate – compare the compiler results.

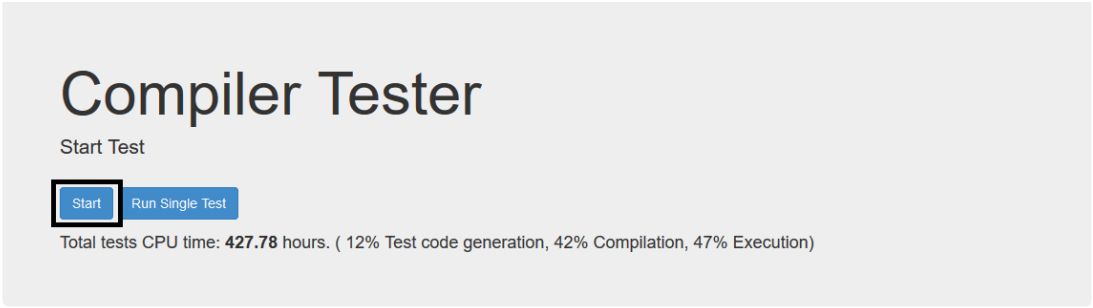
Compiler Test

The run of a single test on a specific complier

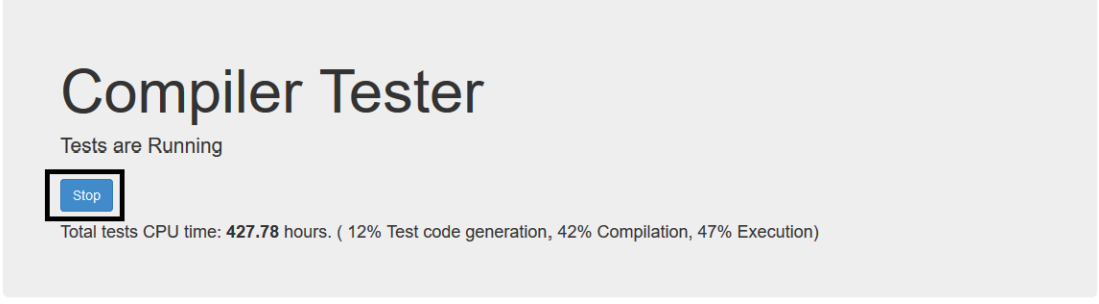
User Interface

Home Page

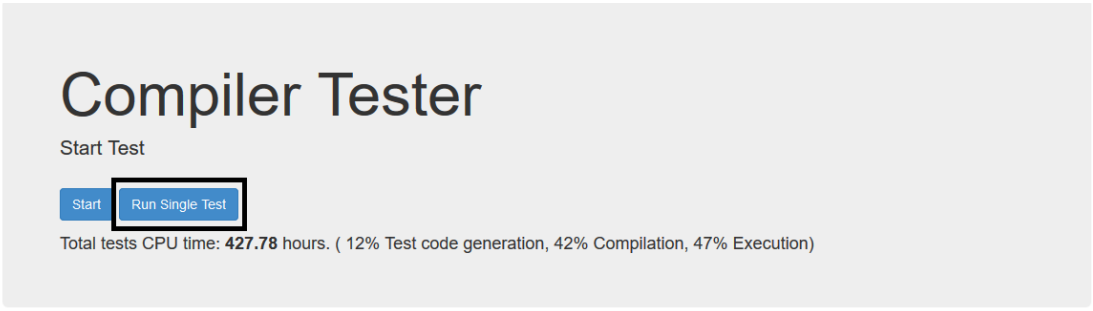
To run the compiler tester on a continues tests, click the "Start" button.



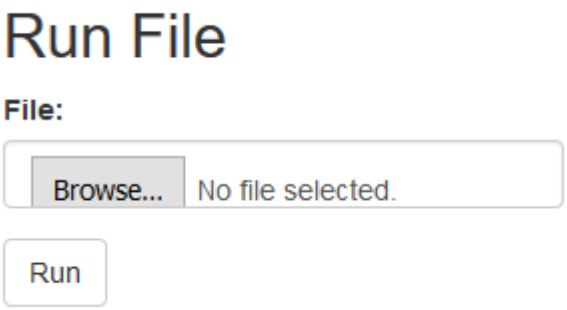
To stop the compiler tester, click the "Stop" button.



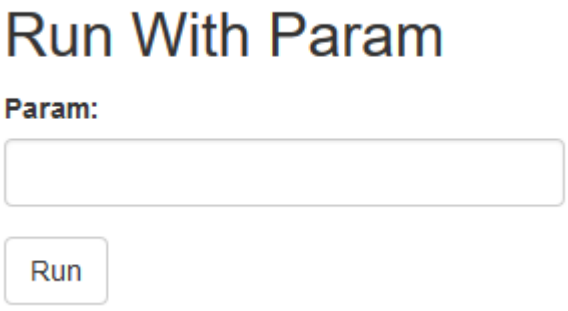
To run a single test, click the "Run Single Test" button.



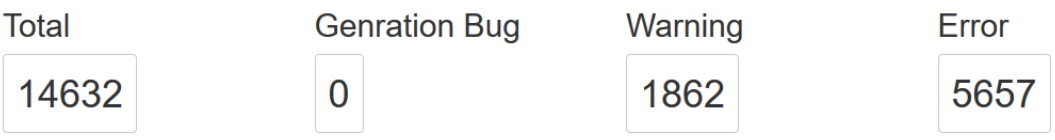
Create a test from a specific code file by selecting the file and clicking the "Run" button.



Run a test with parameter to the fuzzer by writing the parameter and clicking the "Run" button.

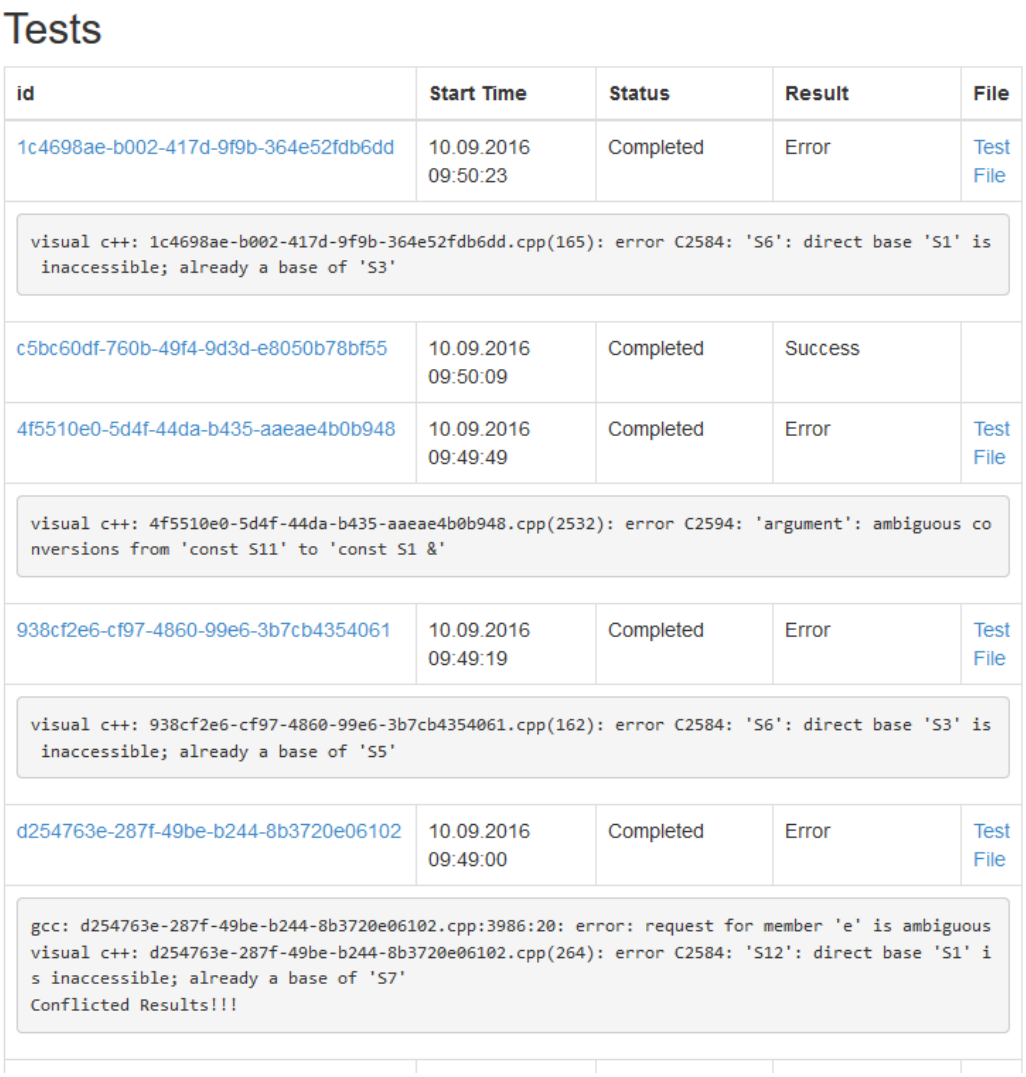


Open the "Tests" page with the corresponding status by clicking one of the following buttons.



Tests

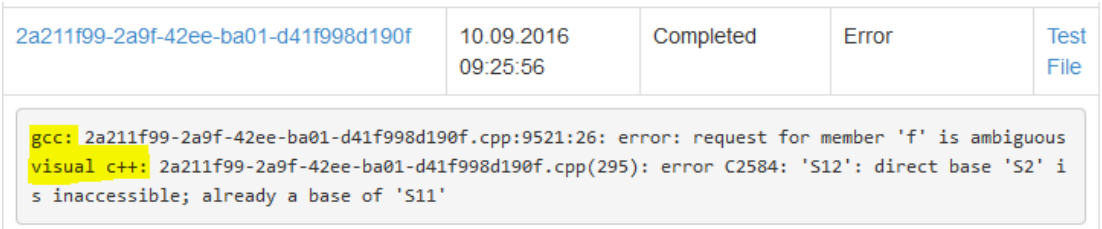
The tests and their data are presented in the "Tests" page.



Tests

id	Start Time	Status	Result	File
1c4698ae-b002-417d-9f9b-364e52fdb6dd	10.09.2016 09:50:23	Completed	Error	Test File
visual c++: 1c4698ae-b002-417d-9f9b-364e52fdb6dd.cpp(165): error C2584: 'S6': direct base 'S1' is inaccessible; already a base of 'S3'				
c5bc60df-760b-49f4-9d3d-e8050b78bf55	10.09.2016 09:50:09	Completed	Success	
4f5510e0-5d4f-44da-b435-aaeae4b0b948	10.09.2016 09:49:49	Completed	Error	Test File
visual c++: 4f5510e0-5d4f-44da-b435-aaeae4b0b948.cpp(2532): error C2594: 'argument': ambiguous conversions from 'const S11' to 'const S1 &'				
938cf2e6-cf97-4860-99e6-3b7cb4354061	10.09.2016 09:49:19	Completed	Error	Test File
visual c++: 938cf2e6-cf97-4860-99e6-3b7cb4354061.cpp(162): error C2584: 'S6': direct base 'S3' is inaccessible; already a base of 'S5'				
d254763e-287f-49be-b244-8b3720e06102	10.09.2016 09:49:00	Completed	Error	Test File
gcc: d254763e-287f-49be-b244-8b3720e06102.cpp:3986:20: error: request for member 'e' is ambiguous visual c++: d254763e-287f-49be-b244-8b3720e06102.cpp(264): error C2584: 'S12': direct base 'S1' is inaccessible; already a base of 'S7' Conflicted Results!!!				

When a compiler returns an error on a test, the first line that contains the word "error" is presented below the test.



2a211f99-2a9f-42ee-ba01-d41f998d190f	10.09.2016 09:25:56	Completed	Error	Test File
gcc: 2a211f99-2a9f-42ee-ba01-d41f998d190f.cpp:9521:26: error: request for member 'f' is ambiguous visual c++: 2a211f99-2a9f-42ee-ba01-d41f998d190f.cpp(295): error C2584: 'S12': direct base 'S2' is inaccessible; already a base of 'S11'				

When the compilers don’t agree on the test program result "Conflicted Results!!!" is presented.

ae9b312b-36eb-4446-80c5-95980b8fdb08	10.09.2016 05:51:39	Completed	Error	Test File

```
Conflicted Results!!!
```

On Error or Warning the test file is saved and can be presented by clicking the "Test File" link.

4010fe03-41e3-449c-853a-936e25591078	10.09.2016 06:30:58	Completed	Warning	Test File

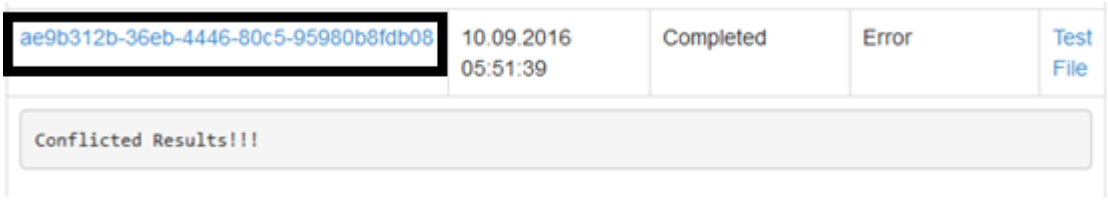
```
visual c++: 4010fe03-41e3-449c-853a-936e25591078.cpp(250): error C2280: 'S9::~S9(void)': attempti
ng to reference a deleted function
```

Compiler Tester Home Tests Compilers Query DB

Test File

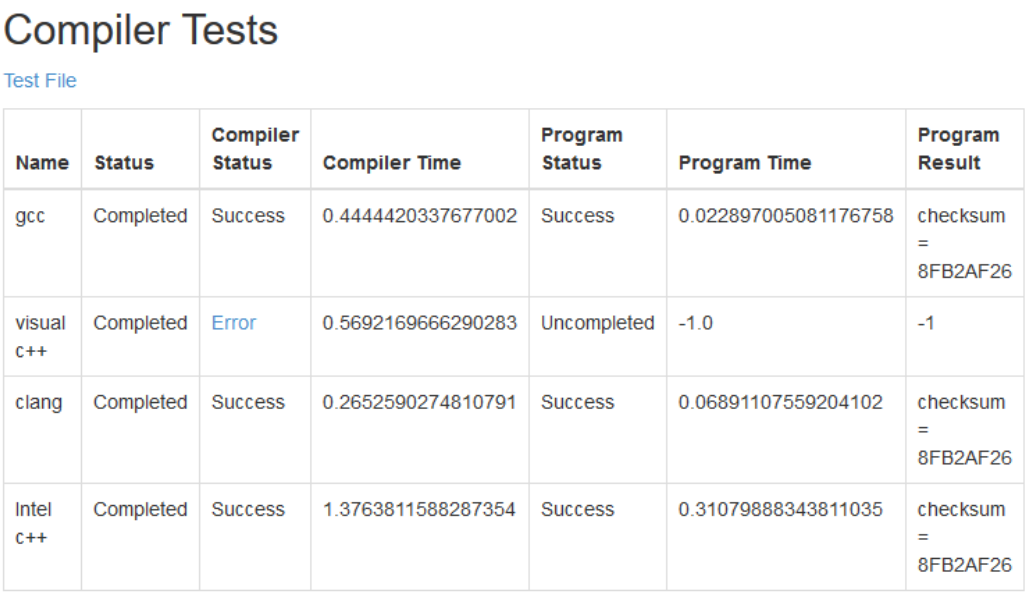
```
1       /*
2        * This is a RANDOMLY GENERATED PROGRAM.
3        *
4        * Generator: 2.3.0
5        * Options:   (none)
6        * Seed:      921782817
7        */
8
9       #include "csmith.h"
10
11
12      static long __undefined;
13
14
15      /* --- Class Declarations --- */
16
17      class S0;
18      class S1;
19      class S2;
20      class S3;
21      class S4;
22      class S5;
23      class S6;
24      class S7;
25      /* --- Class Definitions --- */
26      class S0 {
27
28      private:
29         int16_t  a = (-10L);
30         int32_t  f = 0x10D21DFEL;
```

A test's compiler tests can be presented by clicking the test id click



Compiler Tests

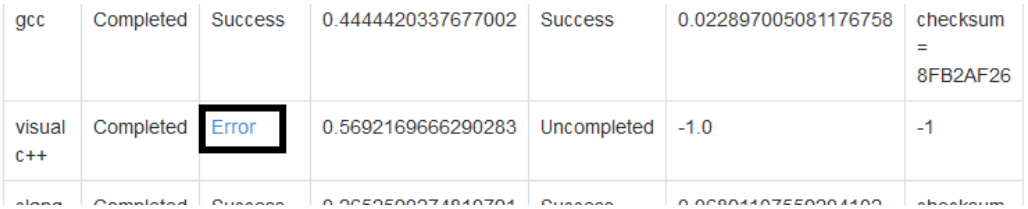
A test's compiler tests and their data are presented in the " Compiler Tests" page.



Name	Status	Compiler Status	Compiler Time	Program Status	Program Time	Program Result
gcc	Completed	Success	0.4444420337677002	Success	0.022897005081176758	checksum = 8FB2AF26
visual c++	Completed	Error	0.5692169666290283	Uncompleted	-1.0	-1
clang	Completed	Success	0.2652590274810791	Success	0.06891107559204102	checksum = 8FB2AF26
Intel c++	Completed	Success	1.3763811588287354	Success	0.31079888343811035	checksum = 8FB2AF26

Again the test file can be presented by clicking the "Test File" link.

On compiler error the error content can be presented by clicking the "Error".



Compiler Test Error

```
Microsoft (R) C/C++ Optimizing Compiler Version 19.00.24213.1 for x86
Copyright (C) Microsoft Corporation.  All rights reserved.

cl : Command line warning D9024 : unrecognized source file type '', object file assumed
8c5fef8a-7fae-45cf-955b-bbd2ad120155.cpp
8c5fef8a-7fae-45cf-955b-bbd2ad120155.cpp(73): error C2584: 'S3': direct base 'S1' is inaccessible;
already a base of 'S2'
8c5fef8a-7fae-45cf-955b-bbd2ad120155.cpp(39): note: see declaration of 'S1'
8c5fef8a-7fae-45cf-955b-bbd2ad120155.cpp(57): note: see declaration of 'S2'
8c5fef8a-7fae-45cf-955b-bbd2ad120155.cpp(129): error C2584: 'S6': direct base 'S0' is inaccessible;
 already a base of 'S5'
8c5fef8a-7fae-45cf-955b-bbd2ad120155.cpp(28): note: see declaration of 'S0'
8c5fef8a-7fae-45cf-955b-bbd2ad120155.cpp(116): note: see declaration of 'S5'
```

Compilers

The compilers and their data are presented in the "Compilers" page.

Compilers

id	Name	command
1	gcc	g++ -std=c++11 %s -w -m32 -o %s
2	visual c++	vcvars32.bat & cl %s /w /link /out:%s
3	clang	clang -std=c++11 %s -w -m32 -o %s
4	Intel c++	iclvars.bat intel64 & icl %s /w /link /out:%s

Query DB

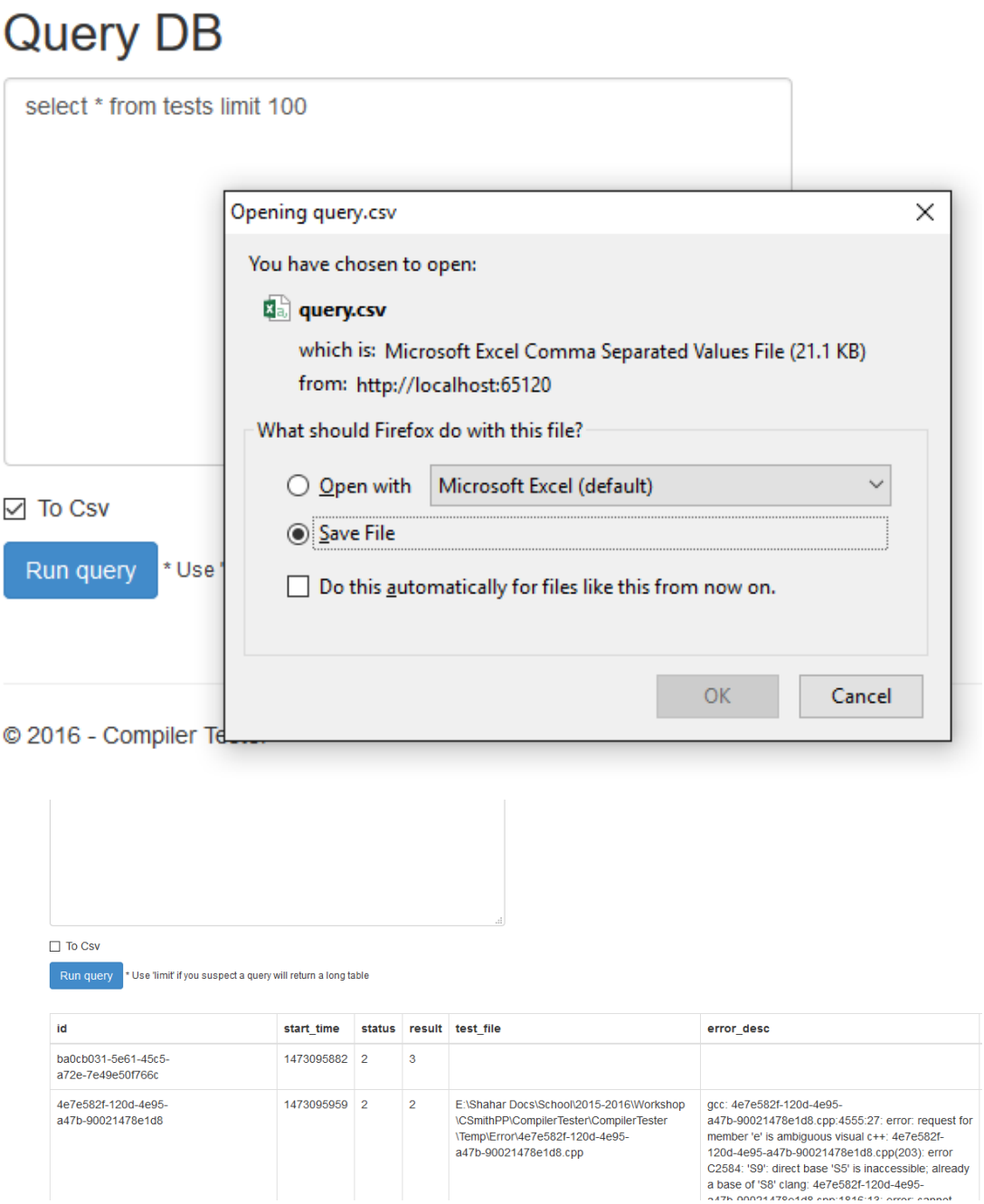
The DB can be queried in the query DB page.

Query DB

☐ To Csv

Run query * Use 'limit' if you suspect a query will return a long table

The query result is presented in csv format or in the page itself.



id	start_time	status	result	test_file	error_desc
ba0cb031-5e61-45c5-a72e-7e49e50f766c	1473095882	2	3		
4e7e582f-120d-4e95-a47b-90021478e1d8	1473095959	2	2	E:\Shahar Docs\School\2015-2016\Workshop \CSmithPP\CompilerTester\CompilerTester \Temp\Error\4e7e582f-120d-4e95-a47b-90021478e1d8.cpp	gcc: 4e7e582f-120d-4e95-a47b-90021478e1d8.cpp:4555:27: error: request for member 'e' is ambiguous visual c++: 4e7e582f-120d-4e95-a47b-90021478e1d8.cpp(203): error C2584: 'S9': direct base 'S5' is inaccessible; already a base of 'S8' clang: 4e7e582f-120d-4e95-