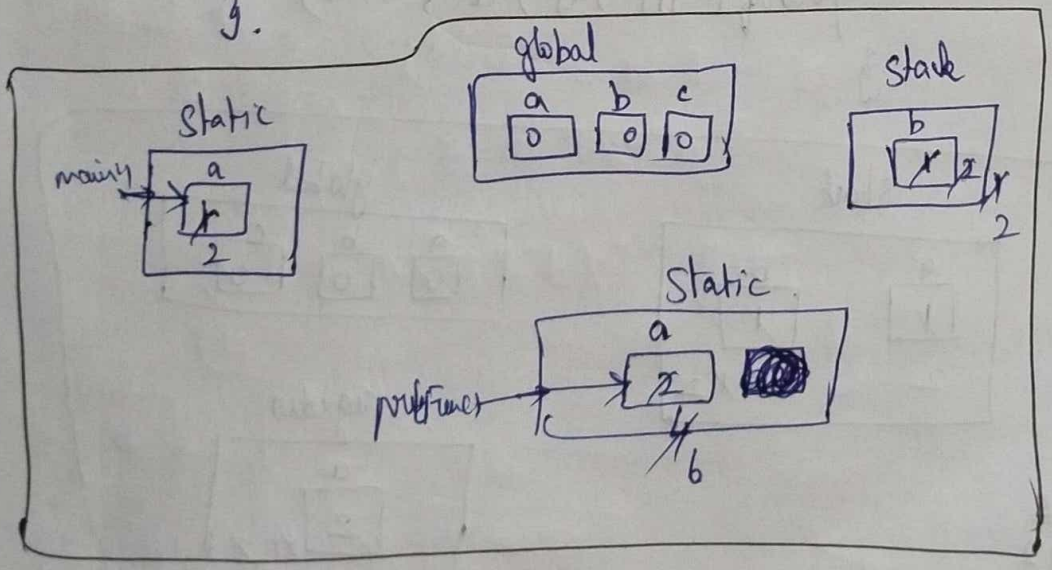
C_147 => Storage classes - Gate Questions

Question ①

```
int a,b,c=0;
void prtFun(void);
int main()
{
  static int a=1;
  prtFun();
  a+=1;
  prtFun();
  printf("\n %d %d ", a, b, c);
}
void prtFun(void)
{
  static int a=2;
  int b=1;
  a+= ++b;
  printf("\n %d %d ", a, b);
}
```

o/p
4 2
6 2
2 0

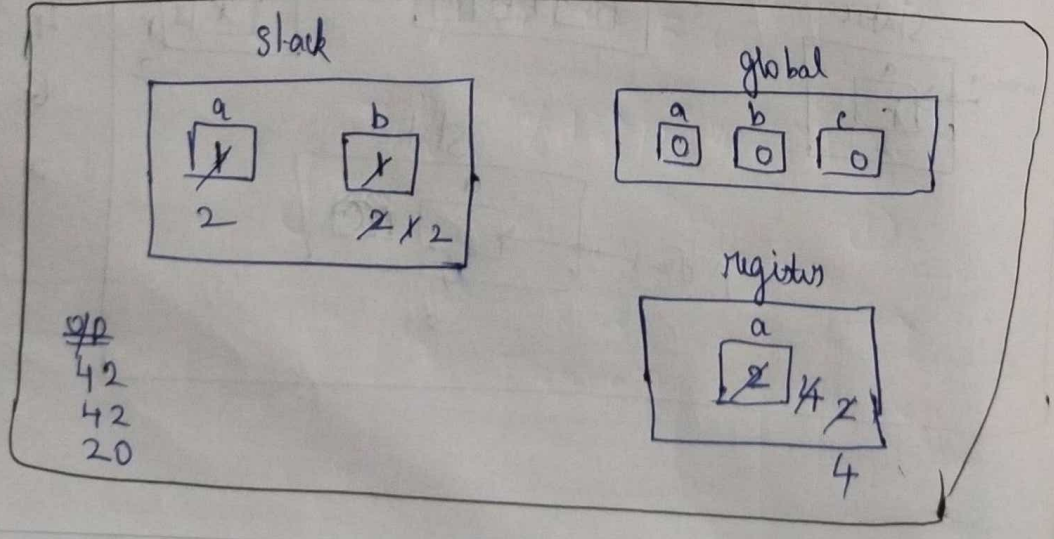


o/p
4 2
6 2
2 0

Question ②

O/P 4 2
4 2
2 0

```
int a,b,c=0;
void prtFun(void);
int main()
{
  auto int a=1;
  prtFun();
  a+=1;
  prtFun();
  printf("\n %d %d", a,b);
}
void prtFun(void)
{
  register int a=2;
  int b=1;
  a+= ++b;
  printf("\n %d %d", a,b);
}
```



Question ③

O/P: Linker error

```
int i=5;
int main()
{
  extern int j;
  printf("%d %d", i, j);
  int j=10;
  return 0;
}
```

→ This is not memory allocation of 'j'; this is only declaration of 'j' with keyword extern which tells compiler to search for 'j' outside of main() block. Now here outside of main() block we do not have 'j'; so the compiler will give this problem to linker which links the value of error. So For this program we get linker error.

Question ④

```
int main()
{
  extern int i;
  printf("%d", i);
  {
    int i=10;
    printf("%d", i);
  }
  return 0;
}
```

→ Outside of main() block we do not have 'i' hence we get linker error

Question (5)

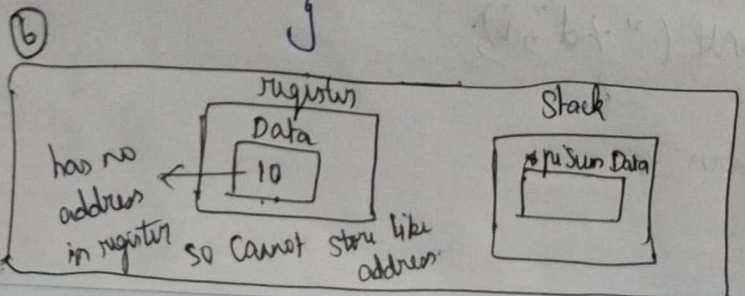
```
int i = 5; j=10;
int main()
{
    extern int i; j=1;
    printf("%d", i); ⇒ 5 (1)
    {
        extern int j;
        printf("%d", j); ⇒ ? (1)
    }
    return 0;
}
```

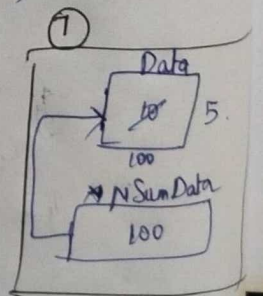
Question (6) & (7)

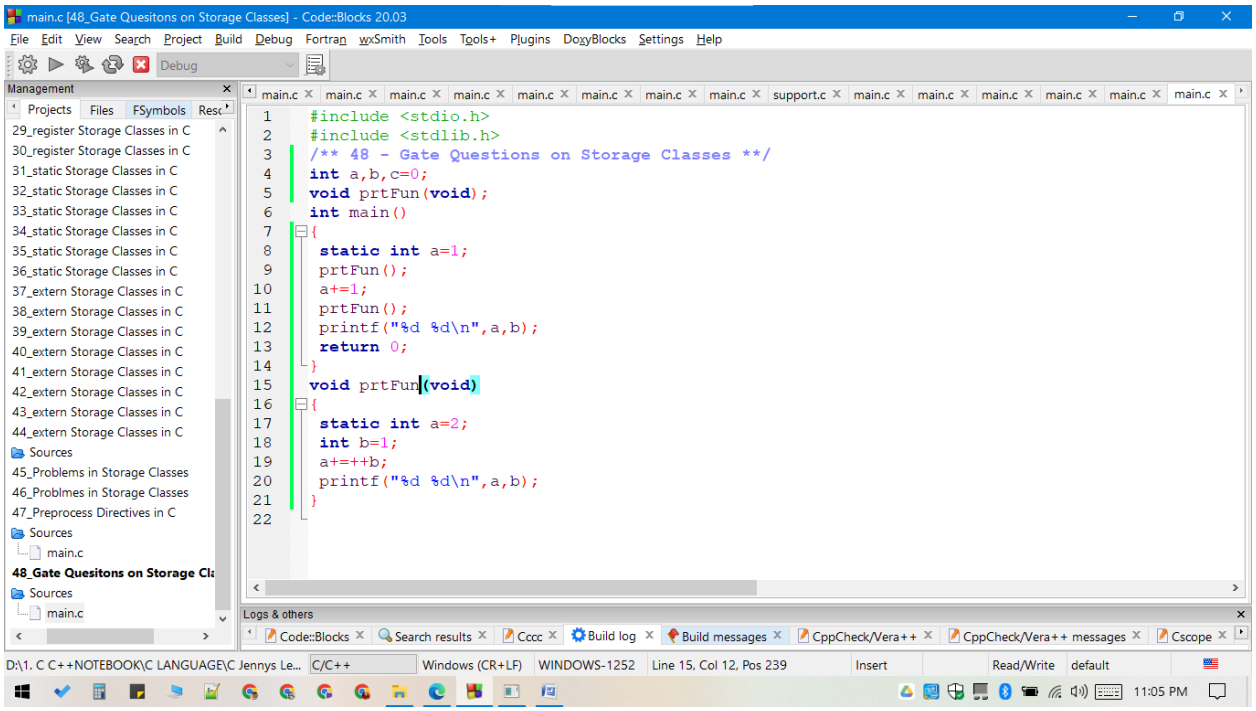
```
int main()
{
auto register int Data = 10;
    int *piSumData = NULL;
    piSumData = &Data;
    *piSumData = 5;
    printf("%d", *piSumData);
}
```

(6) O/P: register — Error

(7) O/P: auto — 5






main.c [48_Gate Quesitons on Storage Classes] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
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29_register Storage Classes in C
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31_static Storage Classes in C
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Sources
45_Problems in Storage Classes
46_Problmes in Storage Classes
47_Preprocess Directives in C
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main.c
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main.c
1 #include <stdio.h>
2 #include <stdlib.h>
3 /** 48 - Gate Questions on Storage Classes **/
4 int a,b,c=0;
5 void prtFun(void);
6 int main()
7 {
8 static int a=1;
9 prtFun();
10 a+=1;
11 prtFun();
12 printf("%d %d\n",a,b);
13 return 0;
14 }
15 void prtFun(void)
16 {
17 static int a=2;
18 int b=1;
19 a+=++b;
20 printf("%d %d\n",a,b);
21 }
22
Logs & others
Code::Blocks Search results Cccc Build log Build messages CppCheck/Vera++ CppCheck/Vera++ messages Cscope
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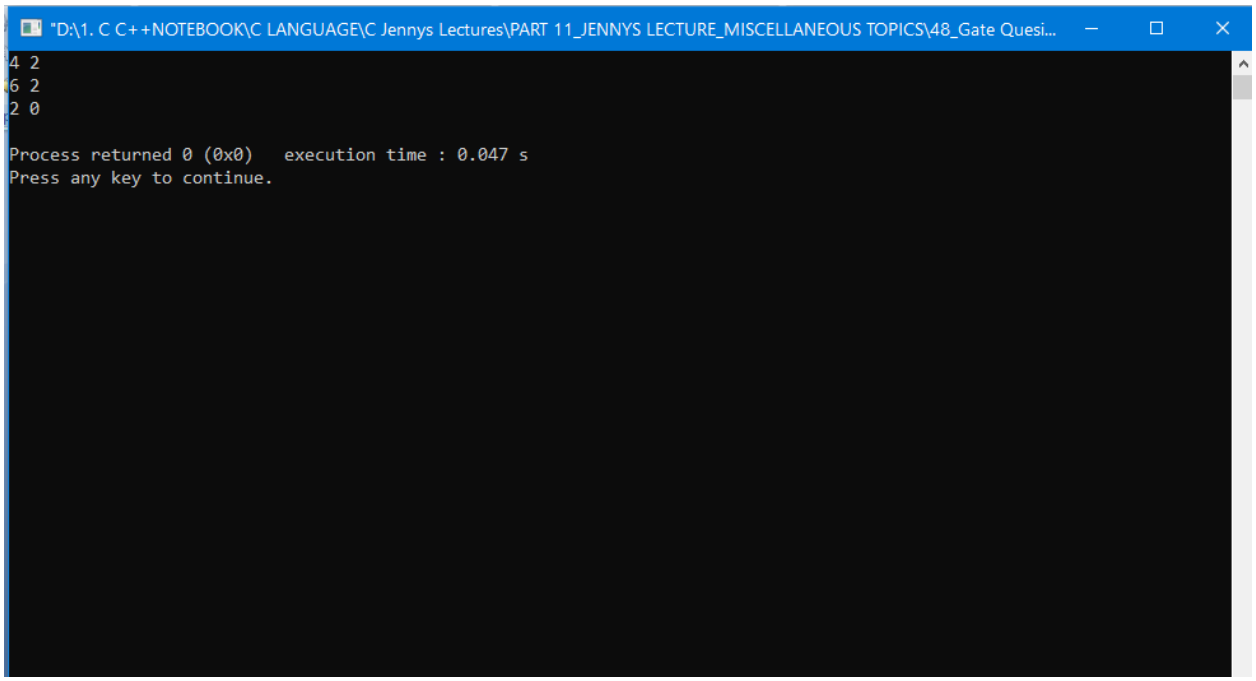
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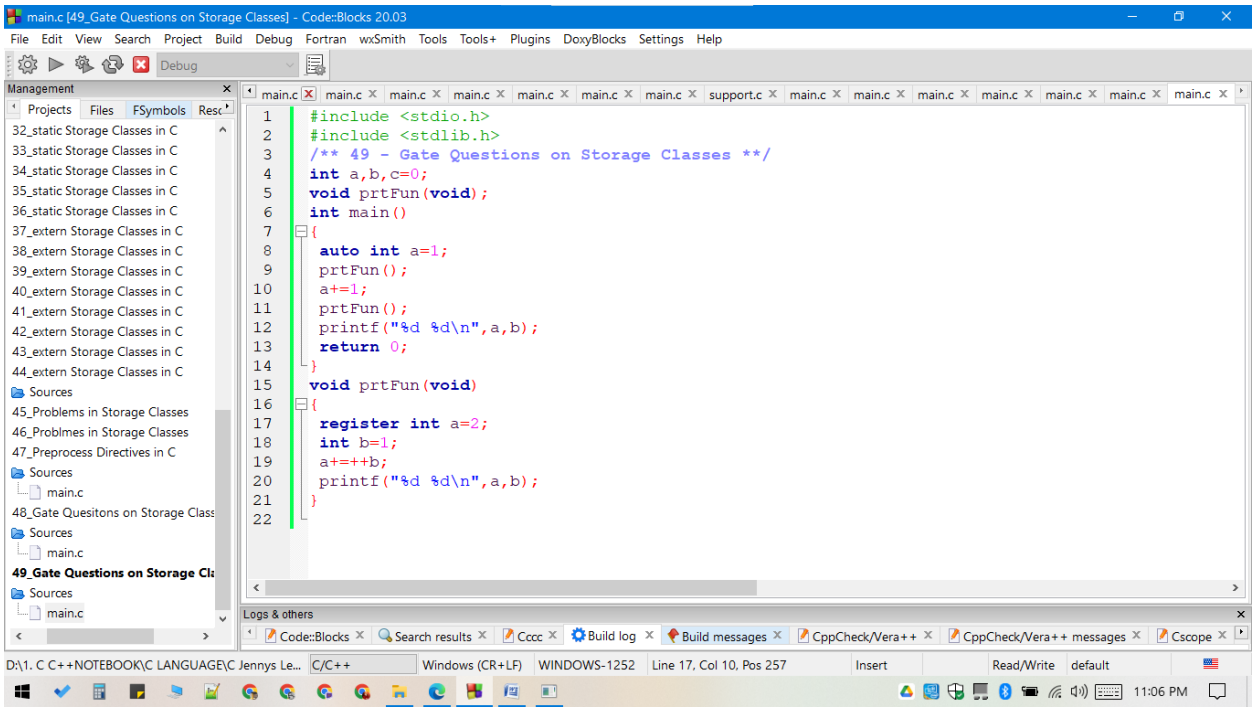
Process returned 0 (0x0) execution time : 0.047 s
Press any key to continue.


main.c [49_Gate Questions on Storage Classes] - Code::Blocks 20.03
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Sources
main.c
1 #include <stdio.h>
2 #include <stdlib.h>
3 /** 49 - Gate Questions on Storage Classes **/
4 int a,b,c=0;
5 void prtFun(void);
6 int main()
7 {
8 auto int a=1;
9 prtFun();
10 a+=1;
11 prtFun();
12 printf("%d %d\n",a,b);
13 return 0;
14 }
15 void prtFun(void)
16 {
17 register int a=2;
18 int b=1;
19 a+=++b;
20 printf("%d %d\n",a,b);
21 }
22
Logs & others
Code::Blocks Search results Cccc Build log Build messages CppCheck/Vera++ CppCheck/Vera++ messages Cscope
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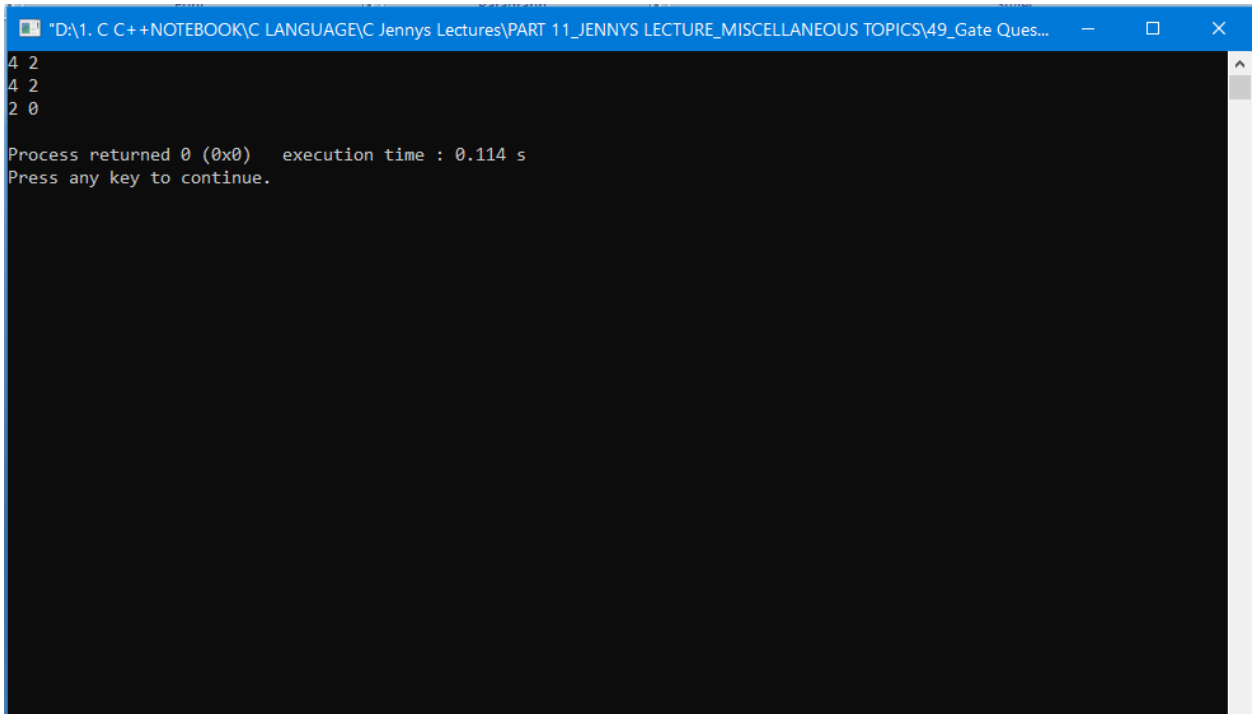
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2 0
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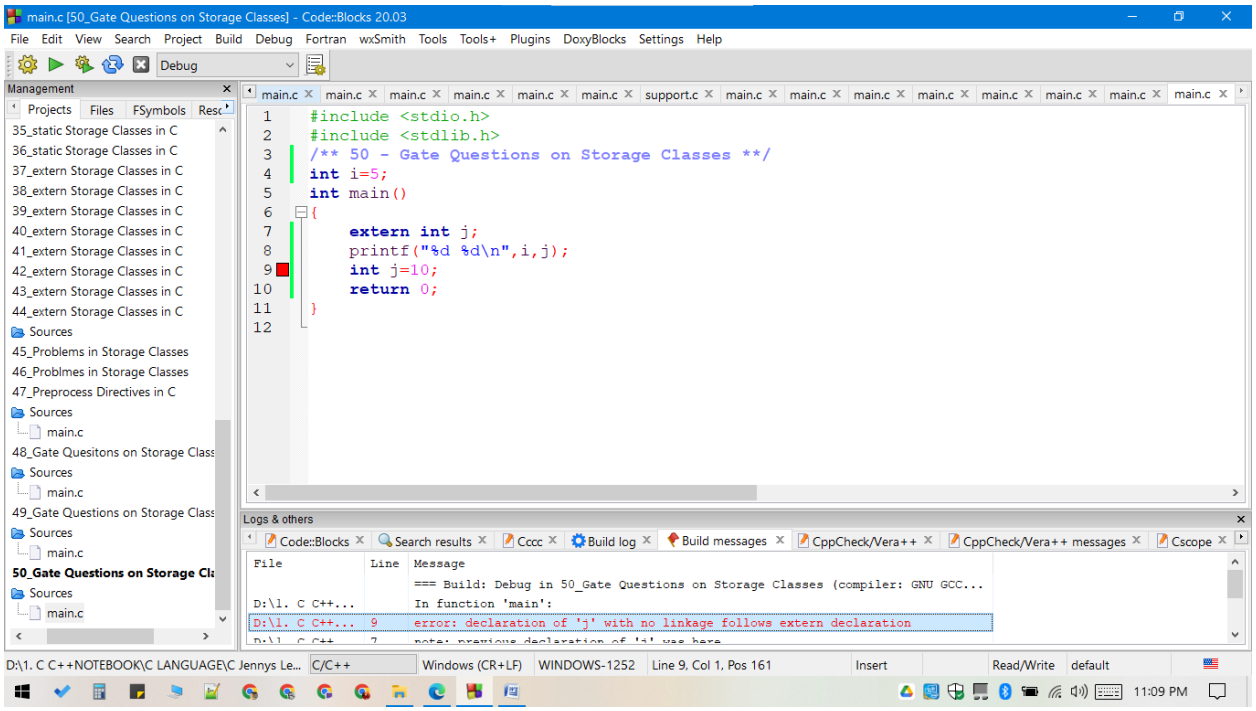
main.c [50_Gate Questions on Storage Classes] - Code::Blocks 20.03
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35_static Storage Classes in C
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main.c
1 #include <stdio.h>
2 #include <stdlib.h>
3 /** 50 - Gate Questions on Storage Classes **/
4 int i=5;
5 int main()
6 {
7 extern int j;
8 printf("%d %d\n",i,j);
9 int j=10;
10 return 0;
11 }
12
Logs & others
Code::Blocks Search results Cccc Build log Build messages CppCheck/Vera++ CppCheck/Vera++ messages Cscope
File Line Message
=== Build: Debug in 50_Gate Questions on Storage Classes (compiler: GNU GCC...
D:\1. C C++... In function 'main':
D:\1. C C++... 9 error: declaration of 'j' with no linkage follows extern declaration
D:\1. C C++... 7 note: previous declaration of 'j' was here
D:\1. C C++NOTEBOOK\C LANGUAGE\C Jennys Le... C/C++ Windows (CR+LF) WINDOWS-1252 Line 9, Col 1, Pos 161 Insert Read/Write default
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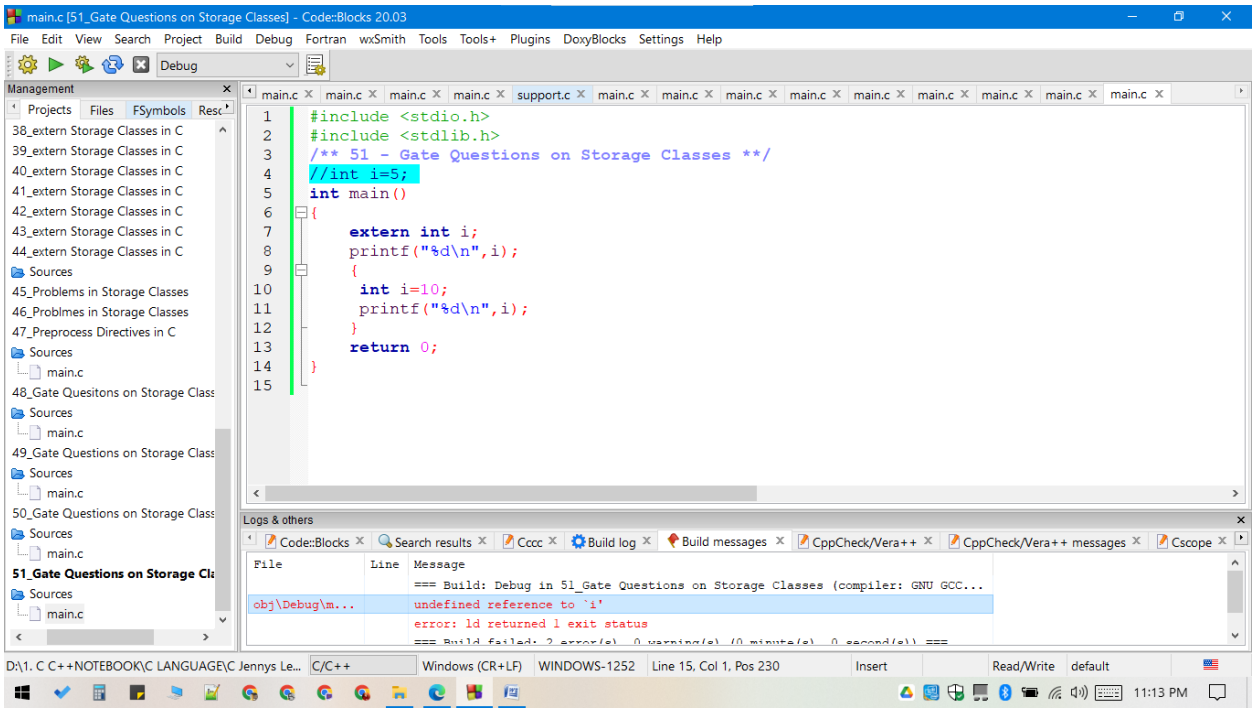
main.c [51_Gate Questions on Storage Classes] - Code::Blocks 20.03
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1 #include <stdio.h>
2 #include <stdlib.h>
3 /** 51 - Gate Questions on Storage Classes **/
4 //int i=5;
5 int main()
6 {
7 extern int i;
8 printf("%d\n",i);
9 {
10 int i=10;
11 printf("%d\n",i);
12 }
13 return 0;
14 }
15
Logs & others
Code::Blocks Search results Cccc Build log Build messages CppCheck/Vera++ CppCheck/Vera++ messages Cscope
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=== Build: Debug in 51_Gate Questions on Storage Classes (compiler: GNU GCC...
obj\Debug\m... undefined reference to `i'
error: ld returned 1 exit status
D:\1. C C++NOTEBOOK\C LANGUAGE\C Jennys Le... C/C++ Windows (CR+LF) WINDOWS-1252 Line 15, Col 1, Pos 230 Insert Read/Write default
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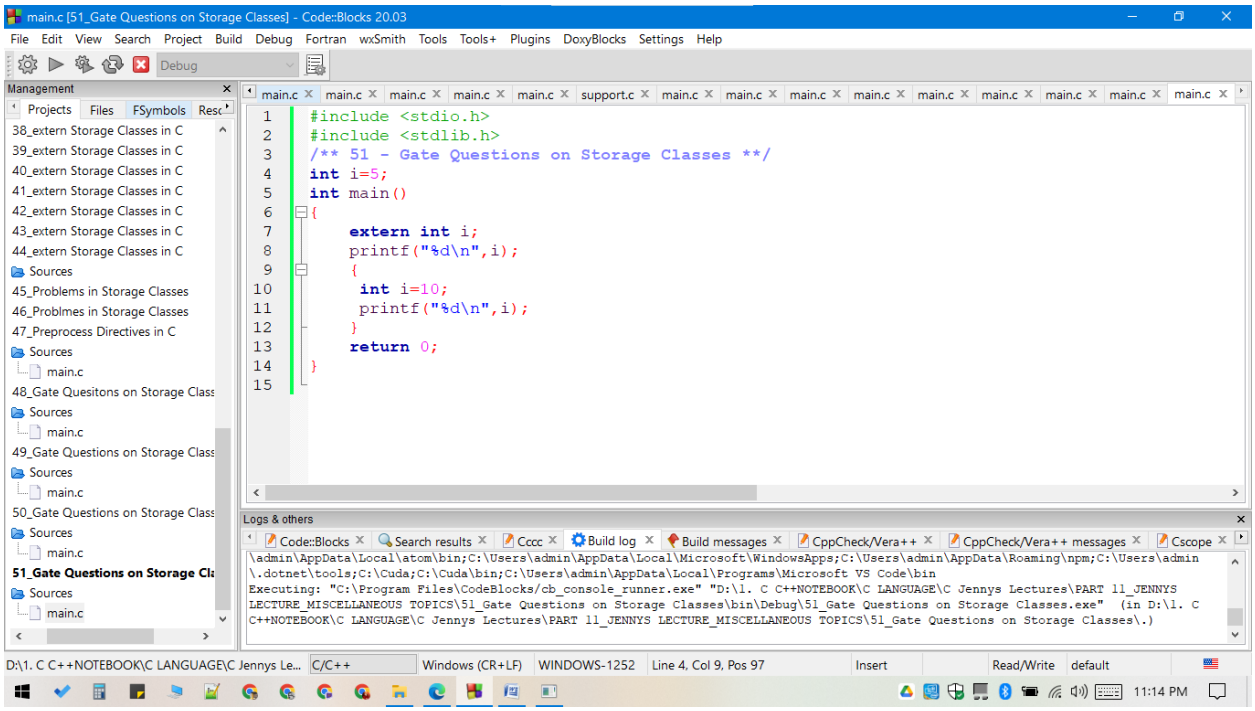
main.c [51_Gate Questions on Storage Classes] - Code::Blocks 20.03
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main.c
#include <stdio.h>
#include <stdlib.h>
/** 51 - Gate Questions on Storage Classes **/
int i=5;
int main()
{
extern int i;
printf("%d\n",i);
{
int i=10;
printf("%d\n",i);
}
return 0;
}
Logs & others
Code::Blocks Search results Cccc Build log Build messages CppCheck/Vera++ CppCheck/Vera++ messages Cscope
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Executing: "C:\Program Files\CodeBlocks/cb_console_runner.exe" "D:\1. C C++NOTEBOOK\C LANGUAGE\C Jennys Lectures\PART 11_JENNYS
LECTURE_MISCELLANEOUS TOPICS\51_Gate Questions on Storage Classes\bin\Debug\51_Gate Questions on Storage Classes.exe" (in D:\1. C
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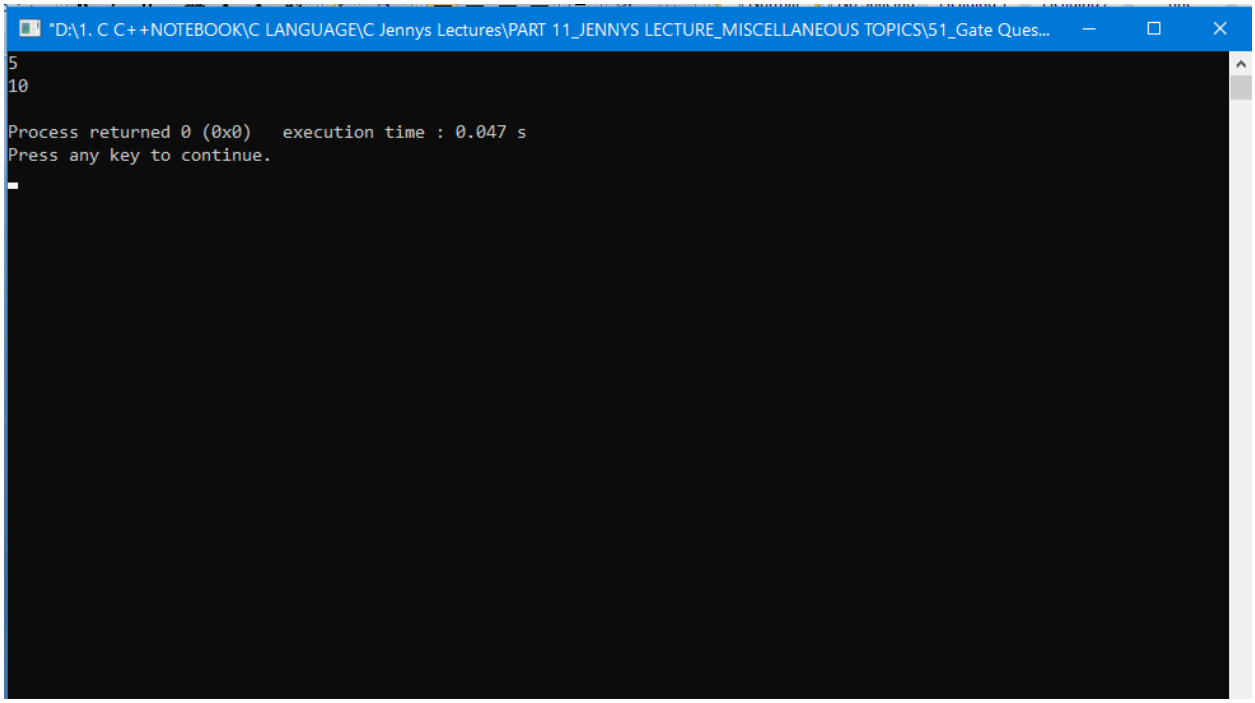
"D:\1. C C++NOTEBOOK\C LANGUAGE\C Jennys Lectures\PART 11_JENNYS LECTURE_MISCELLANEOUS TOPICS\51_Gate Ques...
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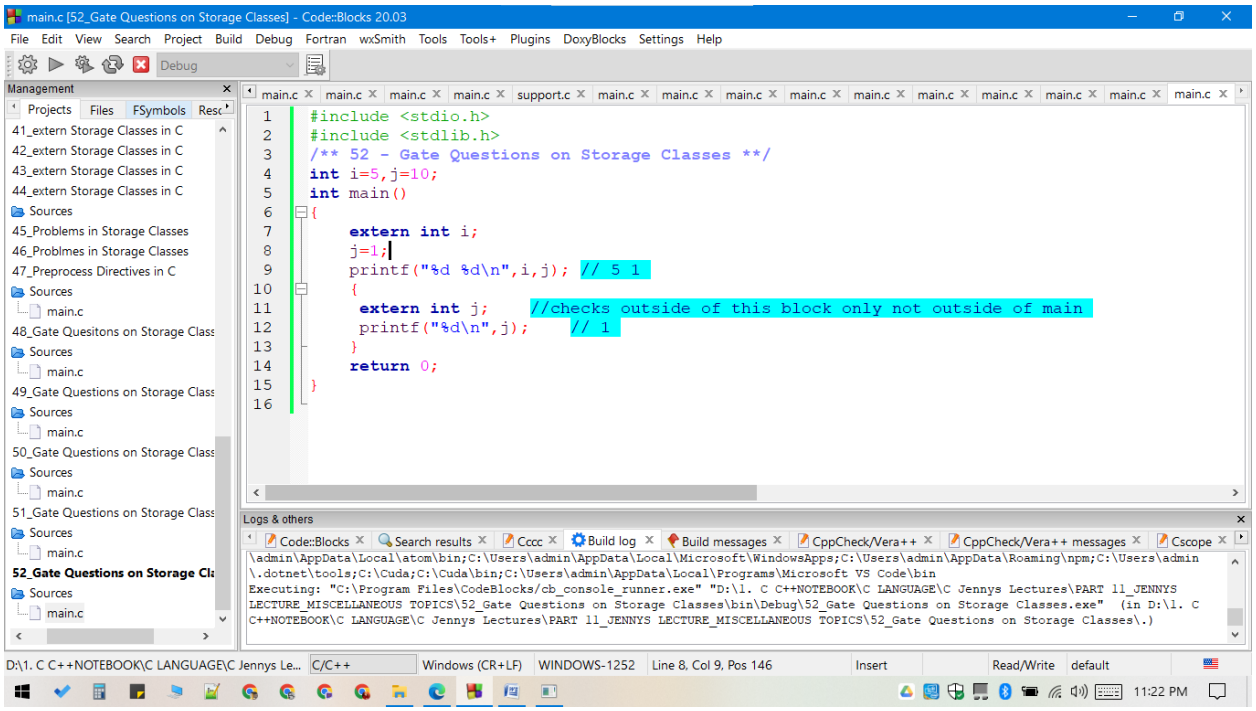
Process returned 0 (0x0) execution time : 0.047 s
Press any key to continue.


main.c [52_Gate Questions on Storage Classes] - Code::Blocks 20.03
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41_extern Storage Classes in C
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1 #include <stdio.h>
2 #include <stdlib.h>
3 /** 52 - Gate Questions on Storage Classes **/
4 int i=5,j=10;
5 int main()
6 {
7 extern int i;
8 j=1;
9 printf("%d %d\n",i,j); // 5 1
10 {
11 extern int j; //checks outside of this block only not outside of main
12 printf("%d\n",j); // 1
13 }
14 return 0;
15 }
16
Logs & others
Code::Blocks Search results Cccc Build log Build messages CppCheck/Vera++ CppCheck/Vera++ messages Cscope
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Executing: "C:\Program Files\CodeBlocks/cb_console_runner.exe" "D:\1. C C++NOTEBOOK\C LANGUAGE\C Jennys Lectures\PART 11_JENNYS
LECTURE_MISCELLANEOUS TOPICS\52_Gate Questions on Storage Classes\bin\Debug\52_Gate Questions on Storage Classes.exe" (in D:\1. C
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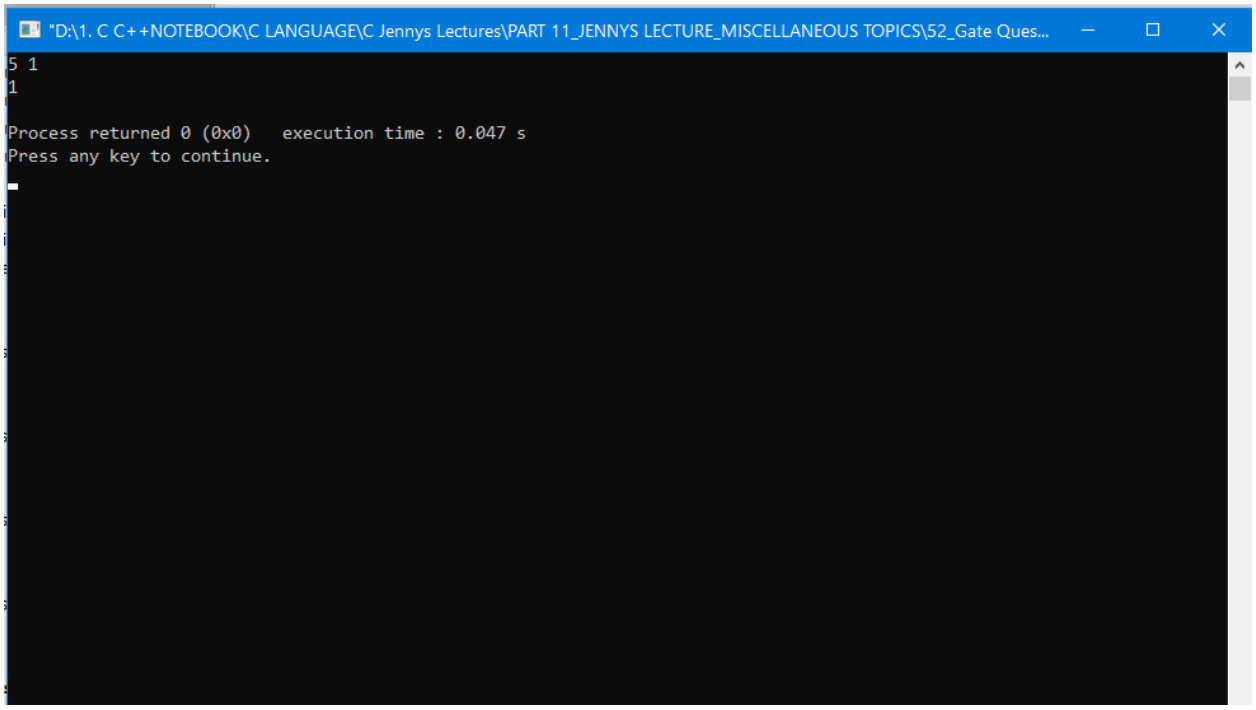
"D:\1. C C++NOTEBOOK\C LANGUAGE\C Jennys Lectures\PART 11_JENNYS LECTURE_MISCELLANEOUS TOPICS\52_Gate Ques...
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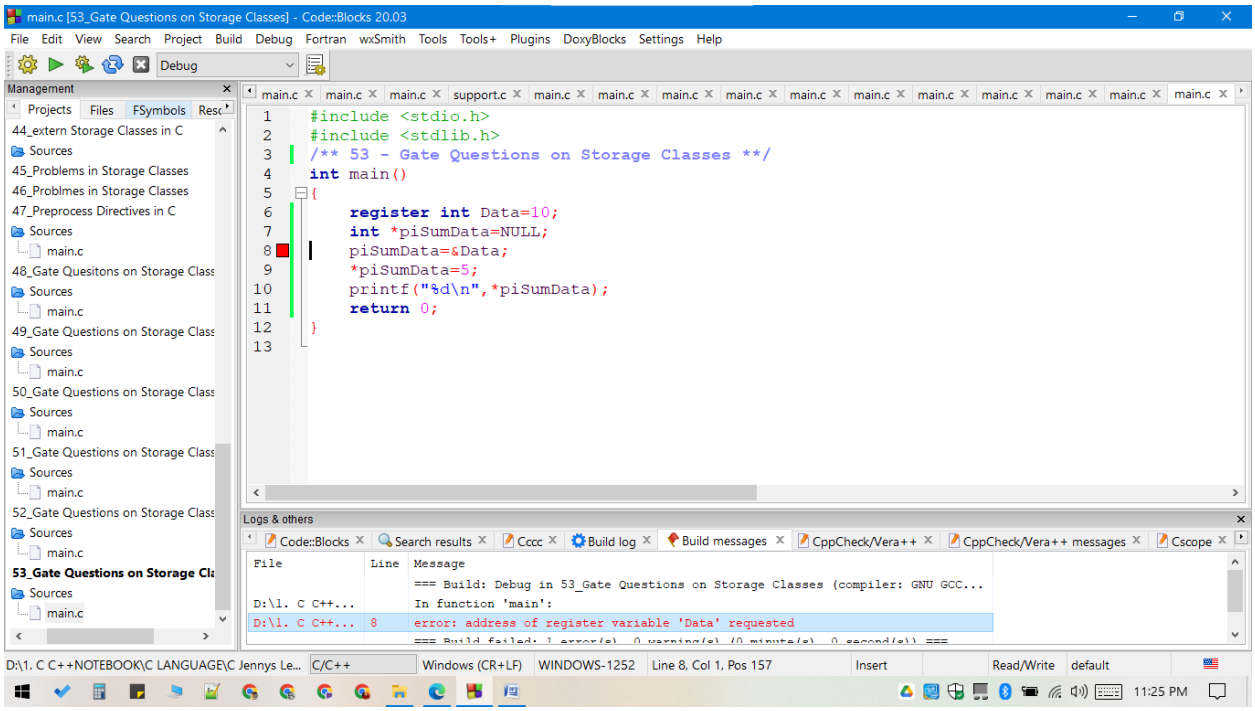
Process returned 0 (0x0) execution time : 0.047 s
Press any key to continue.


main.c [53_Gate Questions on Storage Classes] - Code::Blocks 20.03
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46_Problmes in Storage Classes
47_Preprocess Directives in C
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49_Gate Questions on Storage Class
50_Gate Questions on Storage Class
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Sources
main.c
1 #include <stdio.h>
2 #include <stdlib.h>
3 /** 53 - Gate Questions on Storage Classes **/
4 int main()
5 {
6 register int Data=10;
7 int *piSumData=NULL;
8 piSumData=&Data;
9 *piSumData=5;
10 printf("%d\n",*piSumData);
11 return 0;
12 }
13
Logs & others
Code::Blocks Search results Cccc Build log Build messages CppCheck/Vera++ CppCheck/Vera++ messages Cscope
File Line Message
=== Build: Debug in 53_Gate Questions on Storage Classes (compiler: GNU GCC...
D:\1. C C++... In function 'main':
D:\1. C C++... 8 error: address of register variable 'Data' requested
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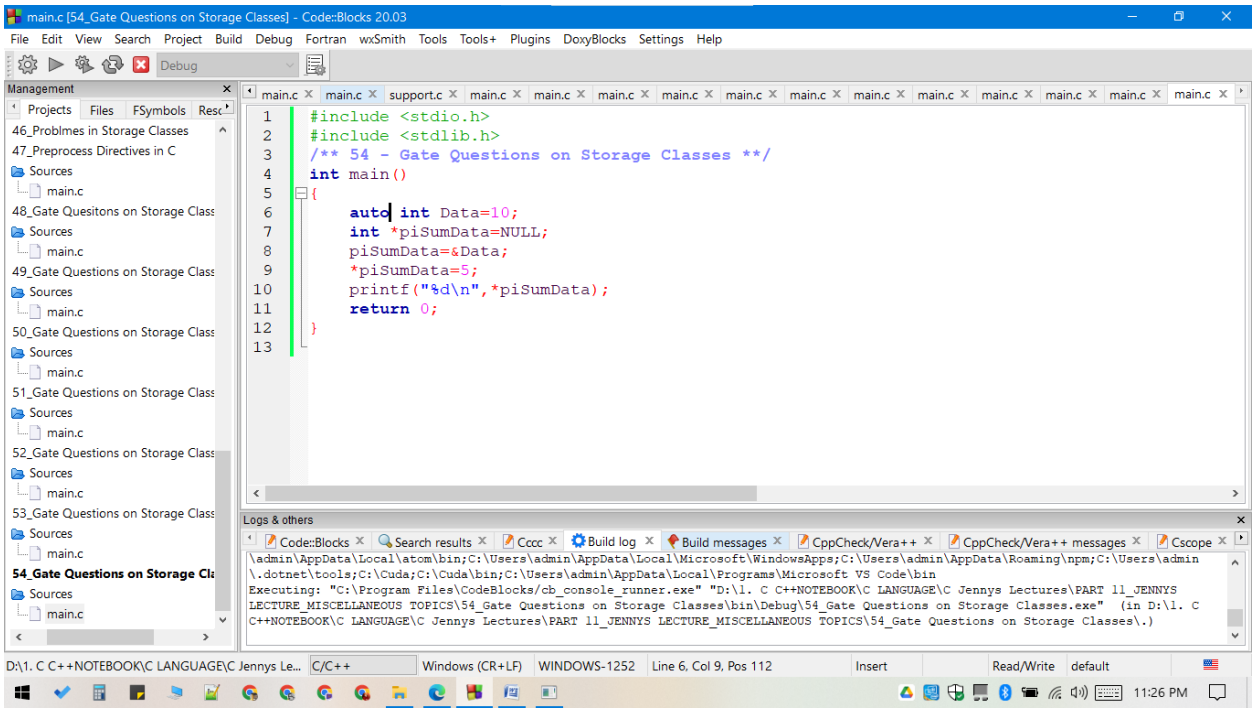
main.c [54_Gate Questions on Storage Classes] - Code::Blocks 20.03
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Sources
main.c
1 #include <stdio.h>
2 #include <stdlib.h>
3 /** 54 - Gate Questions on Storage Classes **/
4 int main()
5 {
6 auto int Data=10;
7 int *piSumData=NULL;
8 piSumData=&Data;
9 *piSumData=5;
10 printf("%d\n",*piSumData);
11 return 0;
12 }
13
Logs & others
Code::Blocks Search results Cccc Build log Build messages CppCheck/Vera++ CppCheck/Vera++ messages Cscope
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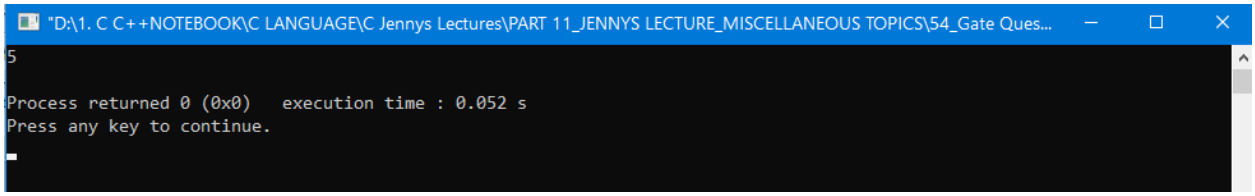
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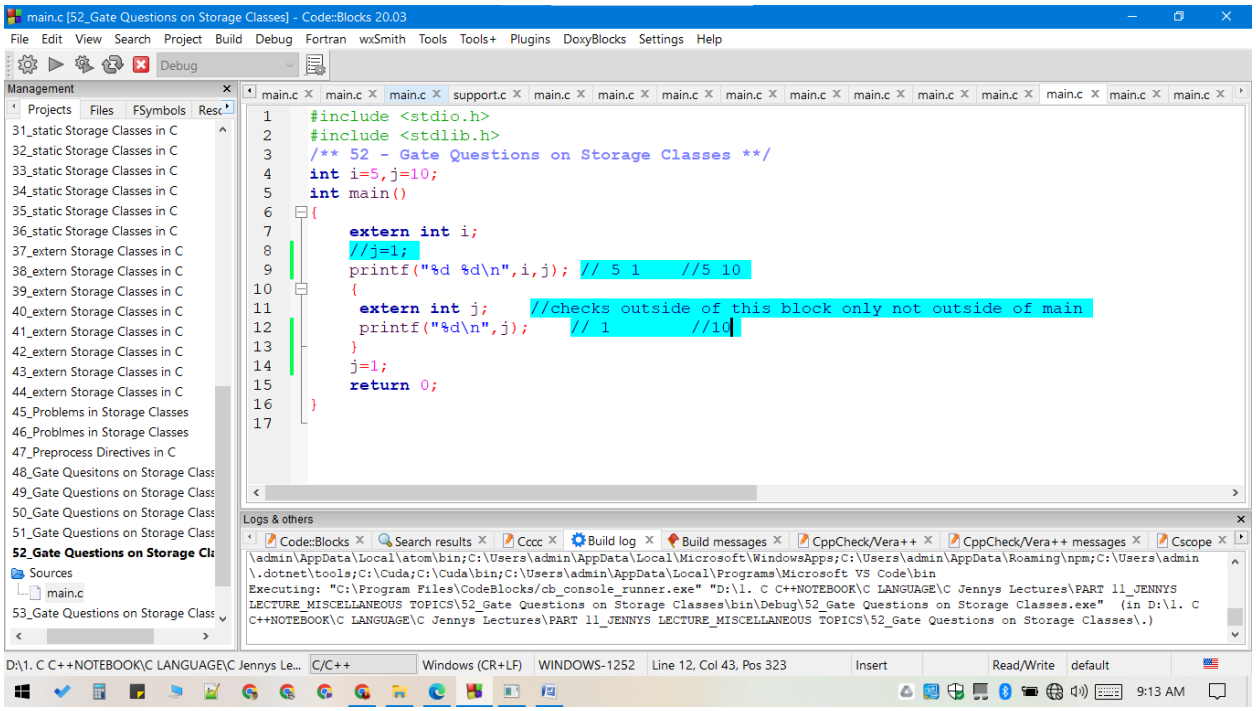
5
Process returned 0 (0x0) execution time : 0.052 s
Press any key to continue.


main.c [52_Gate Questions on Storage Classes] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Debug
Management
Projects Files FSymbols
31_static Storage Classes in C
32_static Storage Classes in C
33_static Storage Classes in C
34_static Storage Classes in C
35_static Storage Classes in C
36_static Storage Classes in C
37_extern Storage Classes in C
38_extern Storage Classes in C
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42_extern Storage Classes in C
43_extern Storage Classes in C
44_extern Storage Classes in C
45_Problems in Storage Classes
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47_Preprocess Directives in C
48_Gate Quesitons on Storage Class
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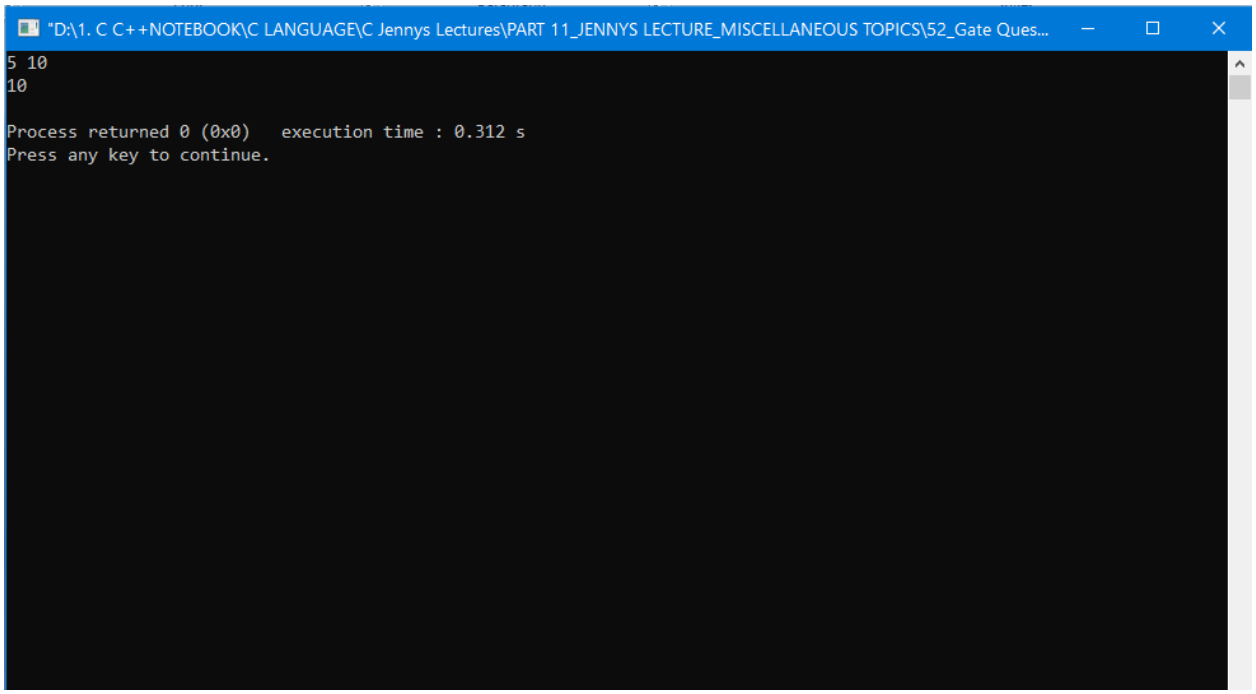
50_Gate Questions on Storage Class
51_Gate Questions on Storage Class
52_Gate Questions on Storage Cl
Sources
main.c
53_Gate Questions on Storage Class
main.c support.c
#include <stdio.h>
#include <stdlib.h>
/** 52 - Gate Questions on Storage Classes **/
int i=5,j=10;
int main()
{
extern int i;
//j=1;
printf("%d %d\n",i,j); // 5 1 //5 10
{
extern int j; //checks outside of this block only not outside of main
printf("%d\n",j); // 1 //10
}
j=1;
return 0;
}
Logs & others
Code::Blocks Search results Cccc Build log Build messages CppCheck/Vera++ CppCheck/Vera++ messages Cscope
\admin\AppData\Local\atom\bin;C:\Users\admin\AppData\Local\Microsoft\WindowsApps;C:\Users\admin\AppData\Roaming\npm;C:\Users\admin
\.dotnet\tools;C:\Cuda;C:\Cuda\bin;C:\Users\admin\AppData\Local\Programs\Microsoft VS Code\bin
Executing: "C:\Program Files\CodeBlocks/cb_console_runner.exe" "D:\1. C C++NOTEBOOK\C LANGUAGE\C Jennys Lectures\PART 11_JENNYS
LECTURE_MISCELLANEOUS TOPICS\52_Gate Questions on Storage Classes\bin\Debug\52_Gate Questions on Storage Classes.exe" (in D:\1. C
C++NOTEBOOK\C LANGUAGE\C Jennys Lectures\PART 11_JENNYS LECTURE_MISCELLANEOUS TOPICS\52_Gate Questions on Storage Classes\.)
D:\1. C C++NOTEBOOK\C LANGUAGE\C Jennys Le... C/C++ Windows (CR+LF) WINDOWS-1252 Line 12, Col 43, Pos 323 Insert Read/Write default
9:13 AM


"D:\1. C C++NOTEBOOK\C LANGUAGE\C Jennys Lectures\PART 11_JENNYS LECTURE_MISCELLANEOUS TOPICS\52_Gate Ques...
5 10
10
Process returned 0 (0x0) execution time : 0.312 s
Press any key to continue.