

SE LAB ASSIGNMENT-2

Question 1: Write a C program having some global variables that are declared but not used anywhere in the code. Run Splint for this C code and report the error generated.

Program:

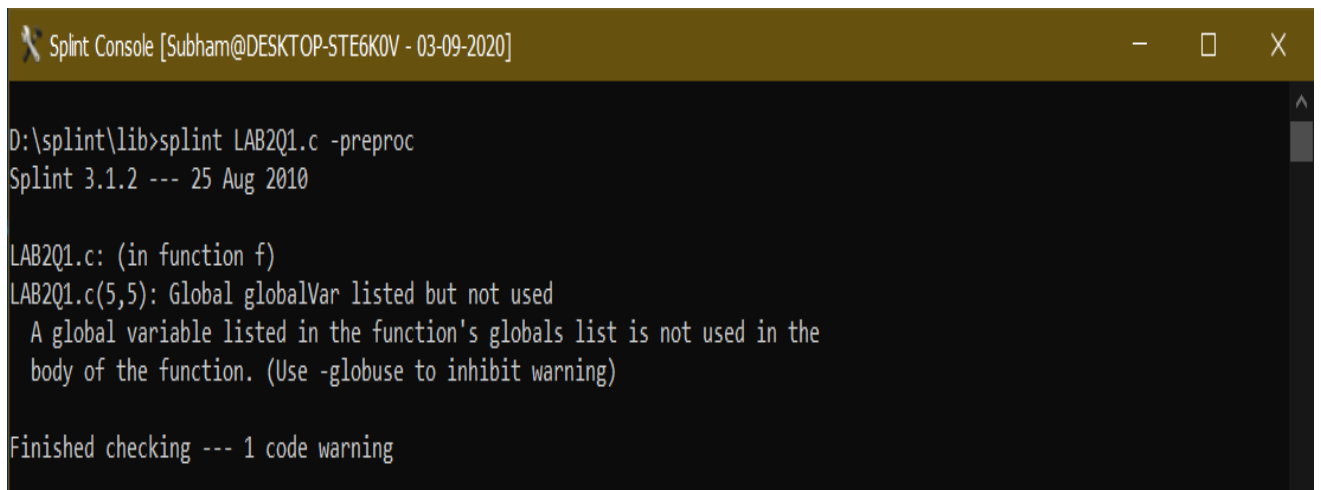
```
#include <stdio.h>

int globalVar = 5;

int f(void) /*@globals globalVar;@*/
{
    return 0;
}

int main()
{
    return 0;
}
```

Output:



```
Splint Console [Subham@DESKTOP-STE6K0V - 03-09-2020]

D:\splint\lib>splint LAB2Q1.c -preproc
Splint 3.1.2 --- 25 Aug 2010

LAB2Q1.c: (in function f)
LAB2Q1.c(5,5): Global globalVar listed but not used
  A global variable listed in the function's globals list is not used in the
  body of the function. (Use -globuse to inhibit warning)

Finished checking --- 1 code warning
```

Question 2: Write a C program having some global variables that are declared but not initialized. Return this uninitialized variable in the main function. Run Splint for this C code and report the error generated.

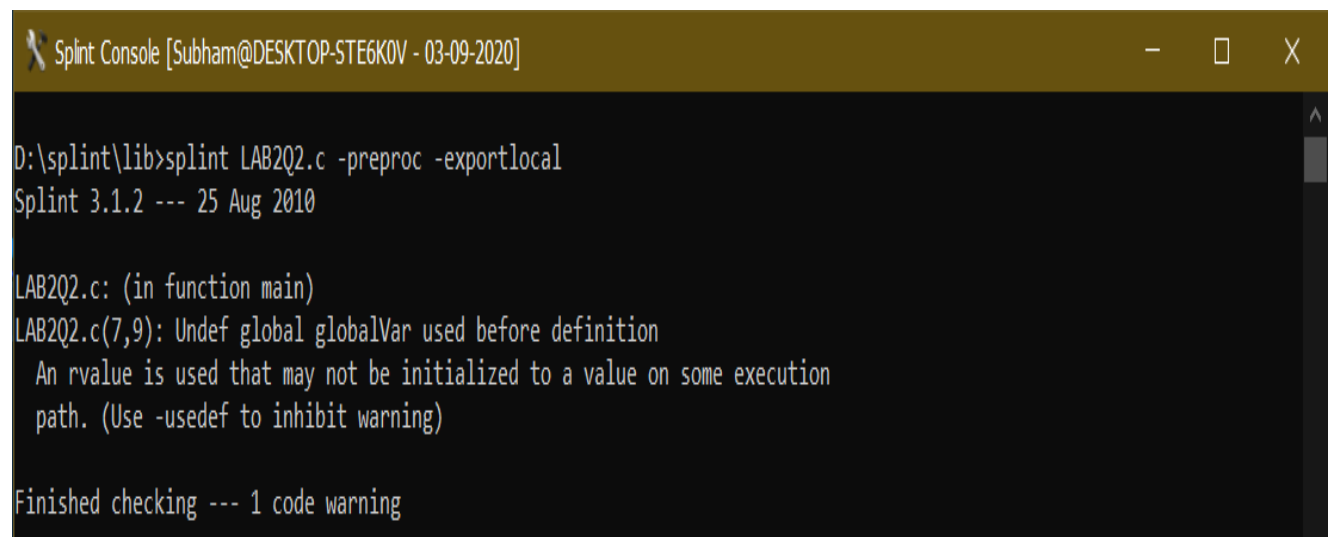
Program:

```
#include <stdio.h>

int globalVar;

int main() /*@globals undef globalVar @*/
{
    return globalVar;
}
```

Output:



```
Splint Console [Subham@DESKTOP-STE6K0V - 03-09-2020]

D:\splint\lib>splint LAB2Q2.c -preproc -exportlocal
Splint 3.1.2 --- 25 Aug 2010

LAB2Q2.c: (in function main)
LAB2Q2.c(7,9): Undef global globalVar used before definition
  An rvalue is used that may not be initialized to a value on some execution
  path. (Use -usedef to inhibit warning)

Finished checking --- 1 code warning
```

Question 3: Write a C program having some global variables that are declared but not initialized. Initialize some local variable using this uninitialized global variable. Run Splint for this C code and report the error generated. (For instance, assume global variable 'a' is declared as 'int' in the code. In the main function you can perform some operation such as 'int b =a'. This code should generate some error as the variable 'a' is not initialized in the code.)

Program:

```
#include <stdio.h>

int globalVar;

int main() /*@globals undef globalVar @*/
{
    int a;
    a = globalVar;
    return 0;
}
```

Output:



```
Splint Console [Subham@DESKTOP-STE6K0V - 03-09-2020]
D:\splint\lib>splint LAB2Q3.c -preproc
Splint 3.1.2 --- 25 Aug 2010

LAB2Q3.c: (in function main)
LAB2Q3.c(7,6): Undef global globalVar used before definition
  An rvalue is used that may not be initialized to a value on some execution
  path. (Use -usedef to inhibit warning)
LAB2Q3.c(2,5): Variable exported but not used outside LAB2Q3: globalVar
  A declaration is exported, but not used outside this module. Declaration can
  use static qualifier. (Use -exportlocal to inhibit warning)

Finished checking --- 2 code warnings
```

Question 4: Write a C program having structure as global variable. This structure can have more than two fields. Except one field, you can initialize values to all fields in the structure. Run Splint for this C code and report the error generated. (This code should generate error as you have one uninitialized field in structure)

Program:

```
#include <stdio.h>

struct Point
{
    int x, y, z;
};

int main()
{
    /*@ unused @*/ struct Point p1 = {.y = 0, .z = 1};
    return 0;
}
```

Output:



```
Splint Console [Subham@DESKTOP-STE6KOV - 03-09-2020]
D:\splint\lib>splint LAB2Q4.c -preproc
Splint 3.1.2 --- 25 Aug 2010

LAB2Q4.c: (in function main)
LAB2Q4.c(10,35): Initializer block for p1 has 2 fields, but struct Point has 3
                fields: <error>, <error>
    Initializer does not set every field in the structure. (Use -fullinitblock to
    inhibit warning)

Finished checking --- 1 code warning
```