

Software Engineering

Assignment 2

Student Details

Name: Krunal Rank

Adm. No: U18CO081

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.

```
#include <stdio.h>

int globalVar = 5;

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

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

```
krhero@arc-warden:/media/krhero/0FB812900FB81290/BTech/Assignments/4th_Year/SE/Assignment_2$ splint ./1.c
Splint 3.1.2 --- 20 Feb 2018

1.c: (in function f)
1.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
```

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.

```
#include <stdio.h>

int globalVar;

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

```

    return globalVar;
}

```

```

krhero@arc-warden:/media/krhero/0FB812900FB81290/BTech/Assignments/4th_Year/SE/Assignment_2$ splint ./2.c
Splint 3.1.2 --- 20 Feb 2018

2.c: (in function main)
2.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)
2.c:3:5: Variable exported but not used outside 2: 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

```

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.)

```

#include <stdio.h>
int a;

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

```

```

krhero@arc-warden:/media/krhero/0FB812900FB81290/BTech/Assignments/4th_Year/SE/Assignment_2$ splint ./3.c
Splint 3.1.2 --- 20 Feb 2018

3.c: (in function main)
3.c:7:6: Undef global a used before definition
  An rvalue is used that may not be initialized to a value on some execution
  path. (Use -usedef to inhibit warning)
3.c:2:5: Variable exported but not used outside 3: a
  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

```

4. Write a C program having structure as global variable. This structure can have more than two fields. Except for 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)

```
#include <stdio.h>

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

int main()
{
    /*@ unused @*/ struct TempStruct t1 = {.y = 0, .z = 1};
    return 0;
}
```

```
krhero@arc-warden:/media/krhero/0FB81290FB81290/BTech/Assignments/4th_Year/SE/Assignment_2$ splint ./4.c
Splint 3.1.2 --- 20 Feb 2018
```

```
4.c: (in function main)
4.c:10:40: Initializer block for t1 has 2 fields, but struct TempStruct has 3
           fields: <error>, <error>
           Initializer does not set every field in the structure. (Use -fullinitblock to
           inhibit warning)
```

```
Finished checking --- 1 code warning
```