CSP 740, CSE, IIT Jammu

Software Engineering at BTech III (6^{th} semester)
Lab Assignment No 2

SPRING Semester 2018-19

Instructions:

1. *The date of submission:* 12^{th} *February 2019. For every 24 hours of delayed submission after the deadline, 10 marks will be deducted from the maximum marks of the assignment, without any exception, whatsoever may be the scapegoat.*

2. *This and the previous Splint Assignment - viva on 14th after which final marks also will be given in the lab turn the same day.*

3. ***Maximum Points 100.***

1. Write a C program that uses splint and flags as many errors as possible from the list of all the errors shown below:

   - Dereferencing a possibly null pointer;
   - Using possibly undefined storage or returning storage that is not properly defined ;
   - Type mismatches, with greater precision and flexibility than provided by C compilers;
   - Violations of information hiding;
   - Memory management errors including uses of dangling references and memory leaks;
   - Dangerous aliasing ;
   - Modifications and global variable uses that are inconsistent with specified interfaces ;
   - Problematic control flow such as likely infinite loops, fall through cases or incomplete switches, and suspicious statements;
   - Buffer overflow vulnerabilities ;
   - Dangerous macro implementations or invocations and Violations of customized naming conventions.

2. In the program that you have written in the Problem#2, either correct the errors where ever possible or use appropriate annotations to circumvent the errors displayed by Splint.

3. Analyze the program code viz. *SplintMiniProject.c* uploaded. Run Splint on the program without -strict option. Enlist and briefly discuss each error in the format of a table as shown below: i.e. Sr No, ErrorName, Brief Explanation of the error. Now modify the code and try to correct each error. Try to resolve as many errors as possible. [Hint: You must get at least 48 code warnings]

SrNo	Error Name	Brief Explanation
...	...	...
...	...	...

4. Analyze the program code viz. *SplintMiniProject.c* uploaded. Now, run Splint on the program with -strict option. Enlist and briefly discuss each error in the form of a table i.e. Sr No, ErrorName, Brief Explanation of the error. [Hint: You must get at least 425 code warnings]