Using address sanitizer (asan) to detect the memory access errors:   
  
address sanitizer or asan is an compiler feature in GCC and Clang that is able to detect the several memory access errors. It is available from the GCC version >=4.8 and can be used with both C and C++ codes.  
  
Below is the sample code to validate the usage of address sanitizer(asan).  
  
To build the code use the command:  
**# gcc -g -fsanitize=address <program\_name.c> -o <program\_name> -static-libasan**  
To execute the code use the command:  
# **./program\_name**  
  
clearly the address sanitizer(asan) detected the heap buffer overflow error then goes on to report where the write happened and where the memory was originally allocated.

