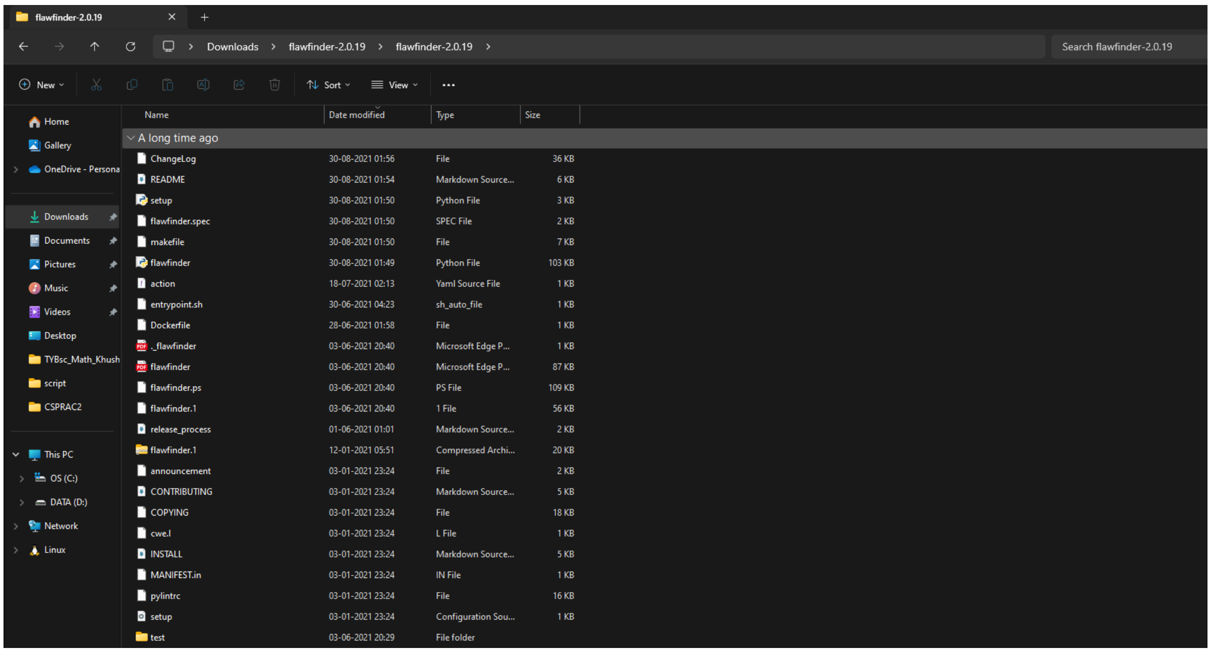
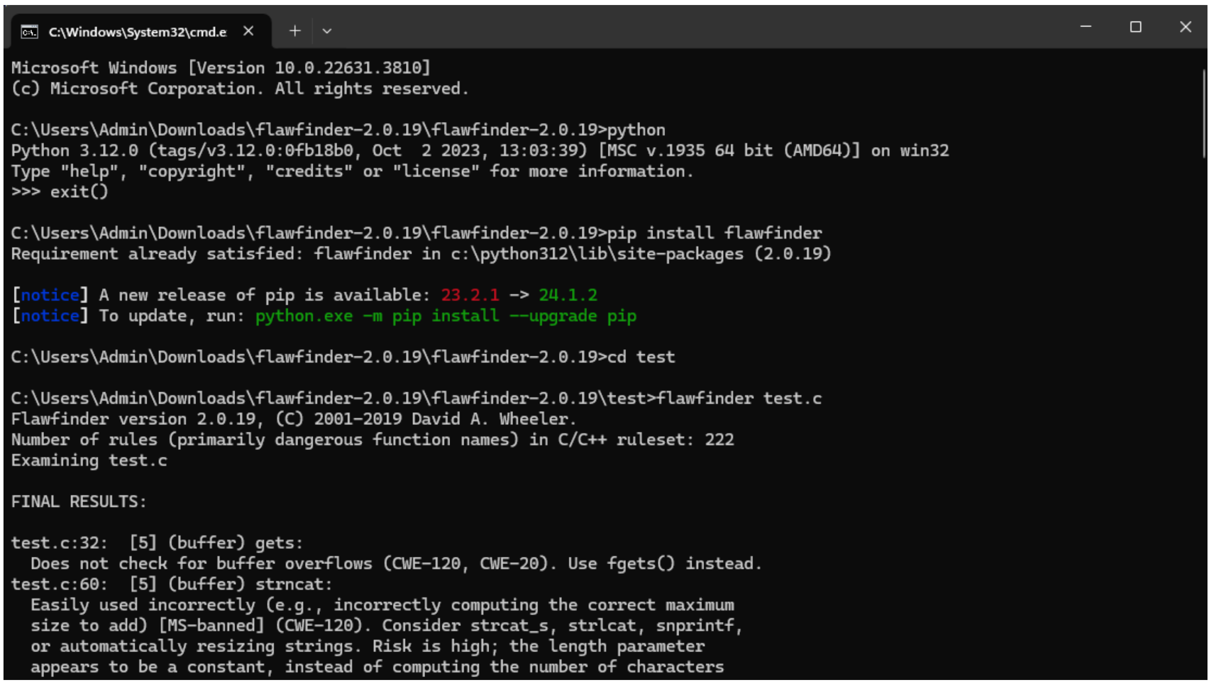
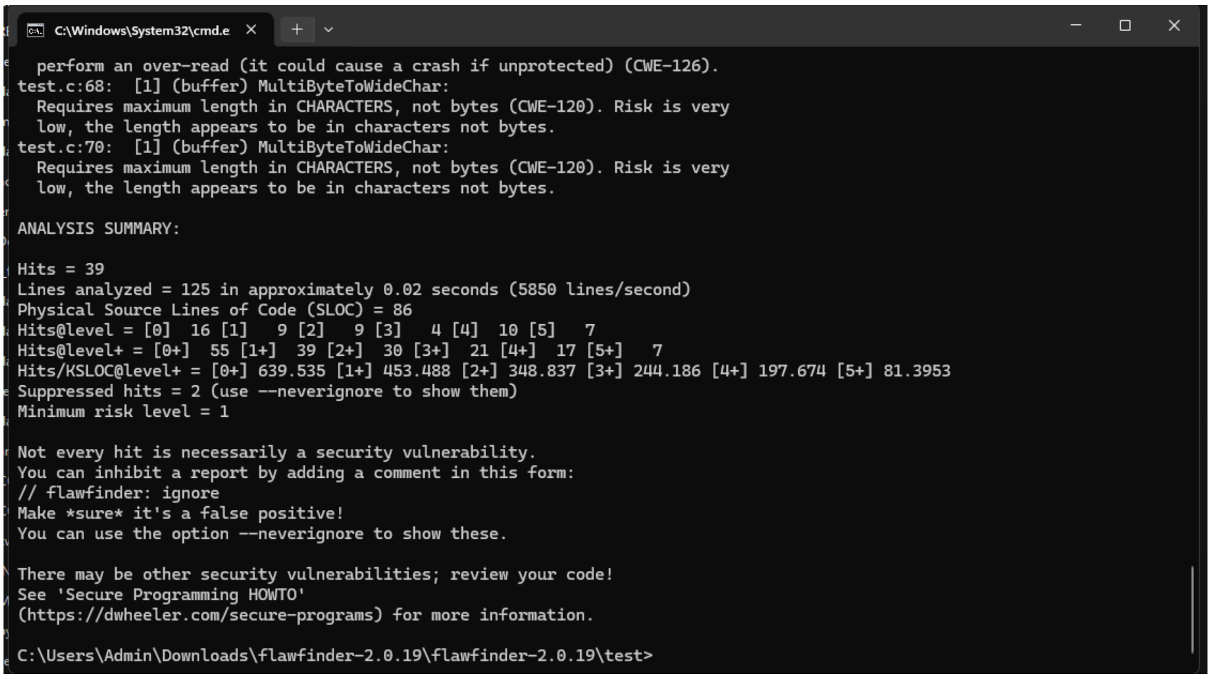
Suraj S. Kaduvetti M.Sc.ComputerScience F015 Practical 1



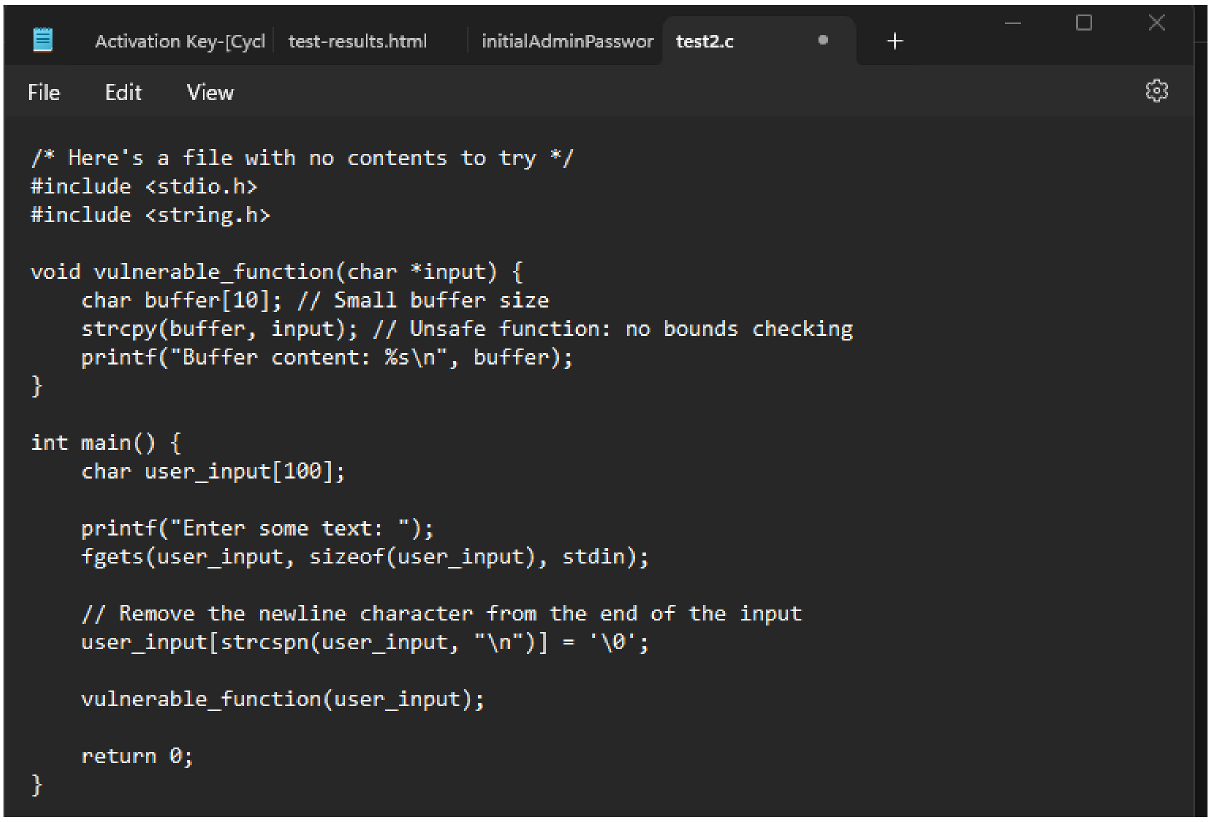
Name	Date modified	Type	Size
ChangeLog	30-08-2021 01:56	File	36 KB
README	30-08-2021 01:54	Markdown Source...	6 KB
setup	30-08-2021 01:50	Python File	3 KB
flawfinder.spec	30-08-2021 01:50	SPEC File	2 KB
makefile	30-08-2021 01:50	File	7 KB
flawfinder	30-08-2021 01:49	Python File	103 KB
action	18-07-2021 02:13	Yaml Source File	1 KB
entrypoint.sh	30-06-2021 04:23	sh_auto_file	1 KB
Dockerfile	28-06-2021 01:58	File	1 KB
._flawfinder	03-06-2021 20:40	Microsoft Edge P...	1 KB
flawfinder	03-06-2021 20:40	Microsoft Edge P...	87 KB
flawfinder.ps	03-06-2021 20:40	PS File	109 KB
flawfinder.1	03-06-2021 20:40	1 File	56 KB
release_process	01-06-2021 01:01	Markdown Source...	2 KB
flawfinder.1	12-01-2021 05:51	Compressed Archi...	20 KB
announcement	03-01-2021 23:24	File	2 KB
CONTRIBUTING	03-01-2021 23:24	Markdown Source...	5 KB
COPYING	03-01-2021 23:24	File	18 KB
cwe.l	03-01-2021 23:24	L File	1 KB
INSTALL	03-01-2021 23:24	Markdown Source...	5 KB
MANIFEST.in	03-01-2021 23:24	IN File	1 KB
pylintrc	03-01-2021 23:24	File	16 KB
setup	03-01-2021 23:24	Configuration Sou...	1 KB
test	03-06-2021 20:29	File folder	



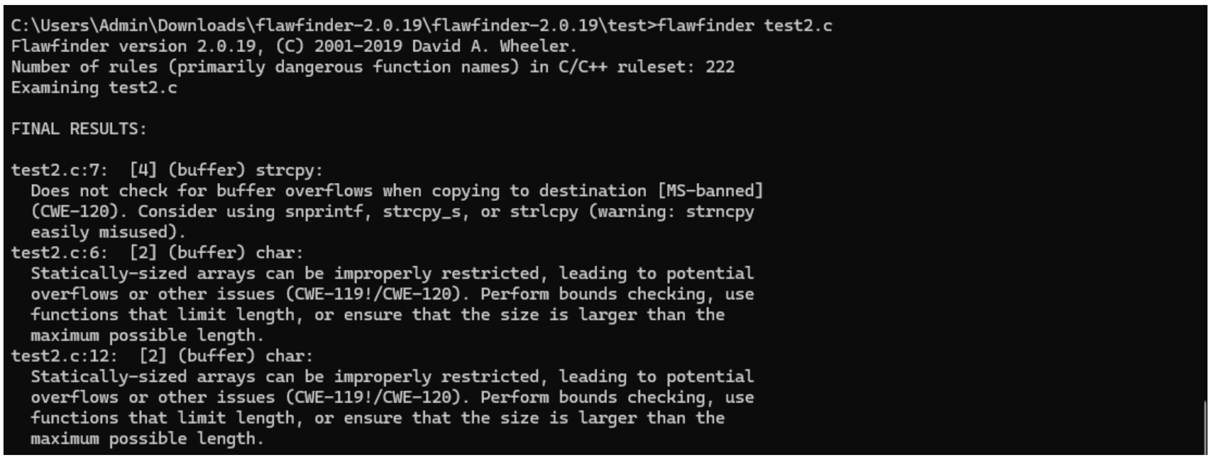
```
Microsoft Windows [Version 10.0.22631.3810]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Admin\Downloads\flawfinder-2.0.19\flawfinder-2.0.19>python
Python 3.12.0 (tags/v3.12.0:0fb18b0, Oct  2 2023, 13:03:39) [MSC v.1935 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> exit()

C:\Users\Admin\Downloads\flawfinder-2.0.19\flawfinder-2.0.19>pip install flawfinder
Requirement already satisfied: flawfinder in c:\python312\lib\site-packages (2.0.19)

[notice] A new release of pip is available: 23.2.1 -> 24.1.2
[notice] To update, run: python.exe -m pip install --upgrade pip

C:\Users\Admin\Downloads\flawfinder-2.0.19\flawfinder-2.0.19>cd test

C:\Users\Admin\Downloads\flawfinder-2.0.19\flawfinder-2.0.19\test>flawfinder test.c
Flawfinder version 2.0.19, (C) 2001-2019 David A. Wheeler.
Number of rules (primarily dangerous function names) in C/C++ ruleset: 222
Examining test.c

FINAL RESULTS:

test.c:32:  [5] (buffer) gets:
  Does not check for buffer overflows (CWE-120, CWE-20). Use fgets() instead.
test.c:60:  [5] (buffer) strncat:
  Easily used incorrectly (e.g., incorrectly computing the correct maximum
  size to add) [MS-banned] (CWE-120). Consider strcat_s, strlcat, snprintf,
  or automatically resizing strings. Risk is high; the length parameter
  appears to be a constant, instead of computing the number of characters
```



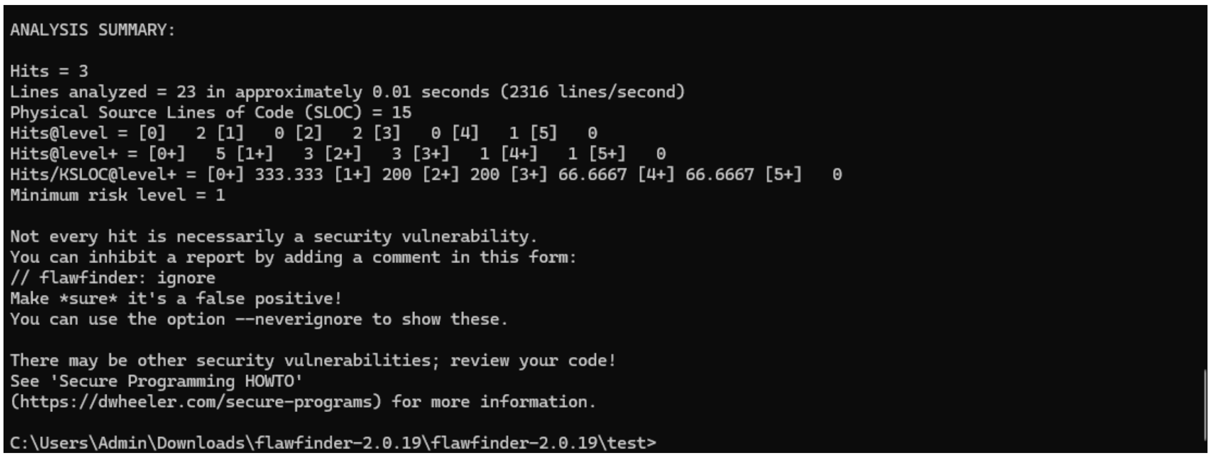
```
  perform an over-read (it could cause a crash if unprotected) (CWE-126).
test.c:68:  [1] (buffer) MultiByteToWideChar:
  Requires maximum length in CHARACTERS, not bytes (CWE-120). Risk is very
  low, the length appears to be in characters not bytes.
test.c:70:  [1] (buffer) MultiByteToWideChar:
  Requires maximum length in CHARACTERS, not bytes (CWE-120). Risk is very
  low, the length appears to be in characters not bytes.

ANALYSIS SUMMARY:

Hits = 39
Lines analyzed = 125 in approximately 0.02 seconds (5850 lines/second)
Physical Source Lines of Code (SLOC) = 86
Hits@level = [0]  16 [1]   9 [2]   9 [3]   4 [4]  10 [5]   7
Hits@level+ = [0+]  55 [1+]  39 [2+]  30 [3+]  21 [4+]  17 [5+]   7
Hits/KSLOC@level+ = [0+] 639.535 [1+] 453.488 [2+] 348.837 [3+] 244.186 [4+] 197.674 [5+] 81.3953
Suppressed hits = 2 (use --neverignore to show them)
Minimum risk level = 1

Not every hit is necessarily a security vulnerability.
You can inhibit a report by adding a comment in this form:
// flawfinder: ignore
Make *sure* it's a false positive!
You can use the option --neverignore to show these.

There may be other security vulnerabilities; review your code!
See 'Secure Programming HOWTO'
(https://dwheeler.com/secure-programs) for more information.

C:\Users\Admin\Downloads\flawfinder-2.0.19\flawfinder-2.0.19\test>
```



```c
/* Here's a file with no contents to try */
#include <stdio.h>
#include <string.h>

void vulnerable_function(char *input) {
    char buffer[10]; // Small buffer size
    strcpy(buffer, input); // Unsafe function: no bounds checking
    printf("Buffer content: %s\n", buffer);
}

int main() {
    char user_input[100];

    printf("Enter some text: ");
    fgets(user_input, sizeof(user_input), stdin);

    // Remove the newline character from the end of the input
    user_input[strcspn(user_input, "\n")] = '\0';

    vulnerable_function(user_input);

    return 0;
}
```



```
C:\Users\Admin\Downloads\flawfinder-2.0.19\flawfinder-2.0.19\test>flawfinder test2.c
Flawfinder version 2.0.19, (C) 2001-2019 David A. Wheeler.
Number of rules (primarily dangerous function names) in C/C++ ruleset: 222
Examining test2.c

FINAL RESULTS:

test2.c:7:  [4] (buffer) strcpy:
  Does not check for buffer overflows when copying to destination [MS-banned]
  (CWE-120). Consider using snprintf, strcpy_s, or strlcpy (warning: strncpy
  easily misused).
test2.c:6:  [2] (buffer) char:
  Statically-sized arrays can be improperly restricted, leading to potential
  overflows or other issues (CWE-119!/CWE-120). Perform bounds checking, use
  functions that limit length, or ensure that the size is larger than the
  maximum possible length.
test2.c:12:  [2] (buffer) char:
  Statically-sized arrays can be improperly restricted, leading to potential
  overflows or other issues (CWE-119!/CWE-120). Perform bounds checking, use
  functions that limit length, or ensure that the size is larger than the
  maximum possible length.
```



```
ANALYSIS SUMMARY:

Hits = 3
Lines analyzed = 23 in approximately 0.01 seconds (2316 lines/second)
Physical Source Lines of Code (SLOC) = 15
Hits@level = [0]   2 [1]   0 [2]   2 [3]   0 [4]   1 [5]   0
Hits@level+ = [0+]   5 [1+]   3 [2+]   3 [3+]   1 [4+]   1 [5+]   0
Hits/KSLOC@level+ = [0+] 333.333 [1+] 200 [2+] 200 [3+] 66.6667 [4+] 66.6667 [5+]   0
Minimum risk level = 1

Not every hit is necessarily a security vulnerability.
You can inhibit a report by adding a comment in this form:
// flawfinder: ignore
Make *sure* it's a false positive!
You can use the option --neverignore to show these.

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(https://dwheeler.com/secure-programs) for more information.

C:\Users\Admin\Downloads\flawfinder-2.0.19\flawfinder-2.0.19\test>
```
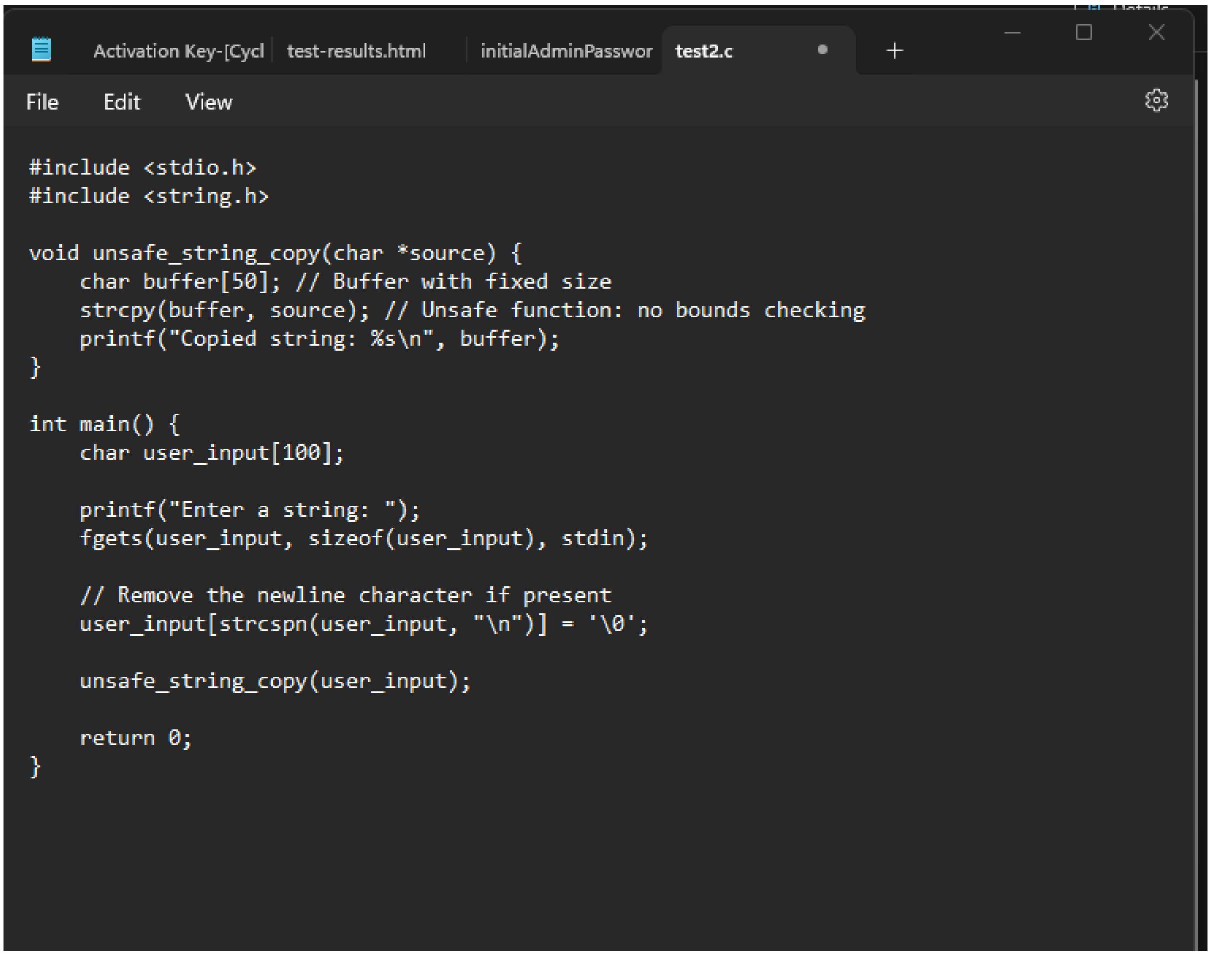
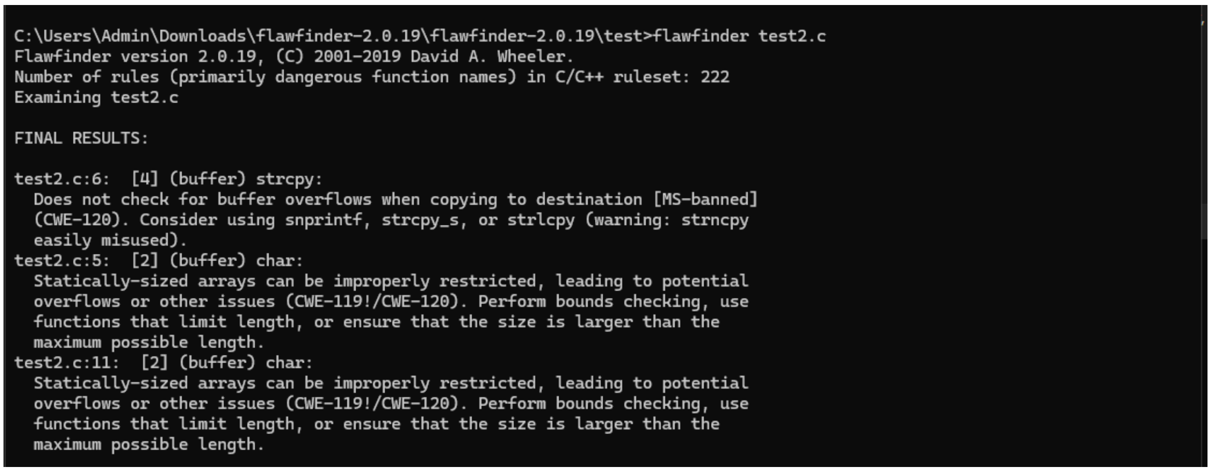
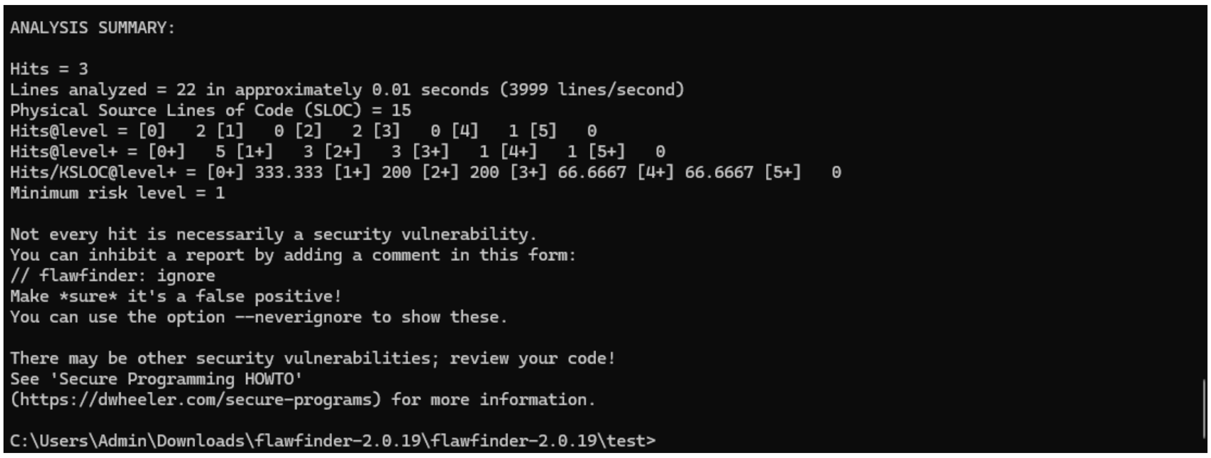



```c
#include <stdio.h>
#include <string.h>

void unsafe_string_copy(char *source) {
    char buffer[50]; // Buffer with fixed size
    strcpy(buffer, source); // Unsafe function: no bounds checking
    printf("Copied string: %s\n", buffer);
}

int main() {
    char user_input[100];

    printf("Enter a string: ");
    fgets(user_input, sizeof(user_input), stdin);

    // Remove the newline character if present
    user_input[strcspn(user_input, "\n")] = '\0';

    unsafe_string_copy(user_input);

    return 0;
}
```



```
C:\Users\Admin\Downloads\flawfinder-2.0.19\flawfinder-2.0.19\test>flawfinder test2.c
Flawfinder version 2.0.19, (C) 2001-2019 David A. Wheeler.
Number of rules (primarily dangerous function names) in C/C++ ruleset: 222
Examining test2.c

FINAL RESULTS:

test2.c:6:  [4] (buffer) strcpy:
  Does not check for buffer overflows when copying to destination [MS-banned]
  (CWE-120). Consider using snprintf, strcpy_s, or strlcpy (warning: strncpy
  easily misused).
test2.c:5:  [2] (buffer) char:
  Statically-sized arrays can be improperly restricted, leading to potential
  overflows or other issues (CWE-119!/CWE-120). Perform bounds checking, use
  functions that limit length, or ensure that the size is larger than the
  maximum possible length.
test2.c:11:  [2] (buffer) char:
  Statically-sized arrays can be improperly restricted, leading to potential
  overflows or other issues (CWE-119!/CWE-120). Perform bounds checking, use
  functions that limit length, or ensure that the size is larger than the
  maximum possible length.
```



```
ANALYSIS SUMMARY:

Hits = 3
Lines analyzed = 22 in approximately 0.01 seconds (3999 lines/second)
Physical Source Lines of Code (SLOC) = 15
Hits@level = [0]   2 [1]   0 [2]   2 [3]   0 [4]   1 [5]   0
Hits@level+ = [0+]   5 [1+]   3 [2+]   3 [3+]   1 [4+]   1 [5+]   0
Hits/KSLOC@level+ = [0+] 333.333 [1+] 200 [2+] 200 [3+] 66.6667 [4+] 66.6667 [5+]   0
Minimum risk level = 1

Not every hit is necessarily a security vulnerability.
You can inhibit a report by adding a comment in this form:
// flawfinder: ignore
Make *sure* it's a false positive!
You can use the option --neverignore to show these.

There may be other security vulnerabilities; review your code!
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(https://dwheeler.com/secure-programs) for more information.

C:\Users\Admin\Downloads\flawfinder-2.0.19\flawfinder-2.0.19\test>
```
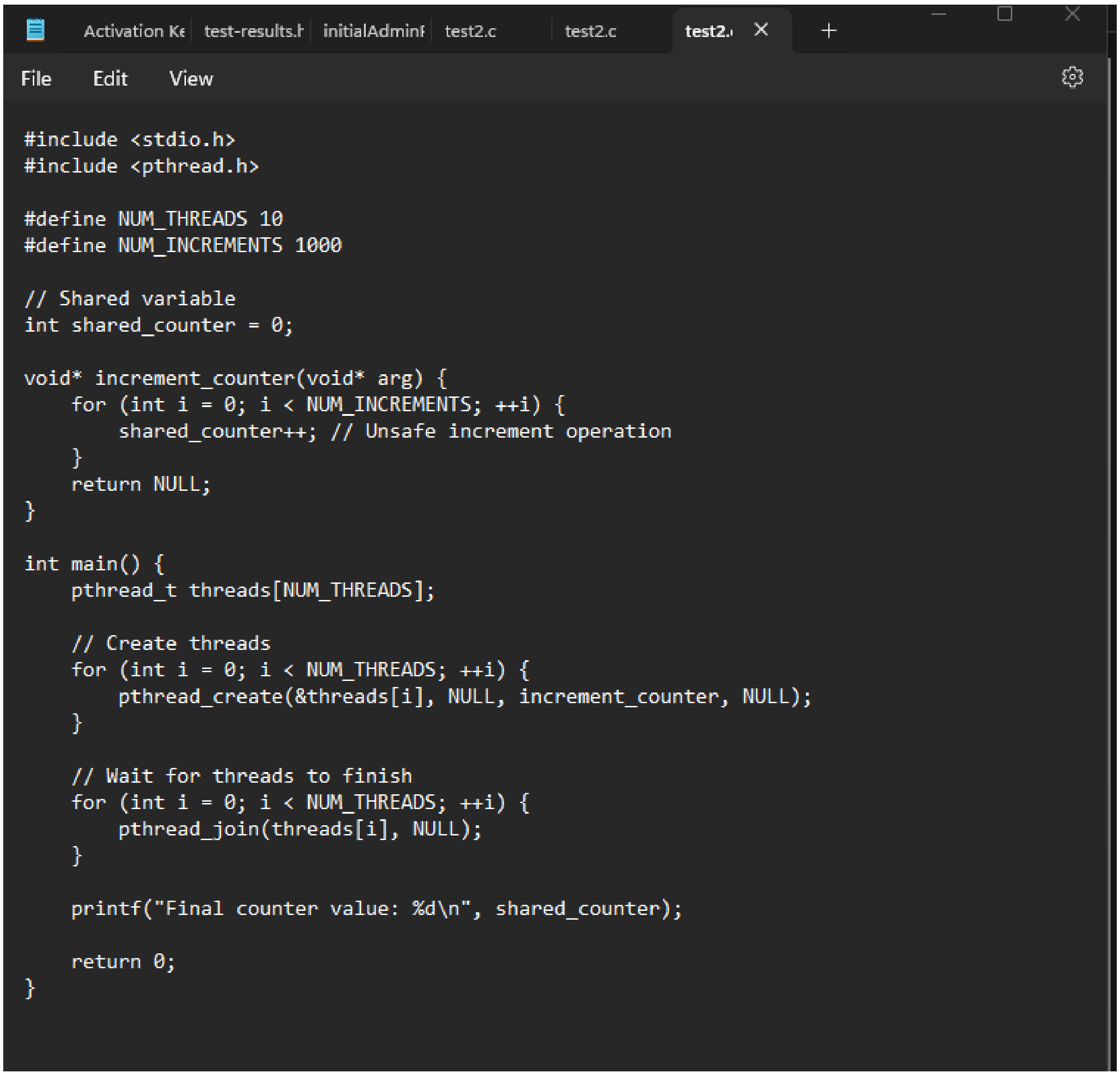
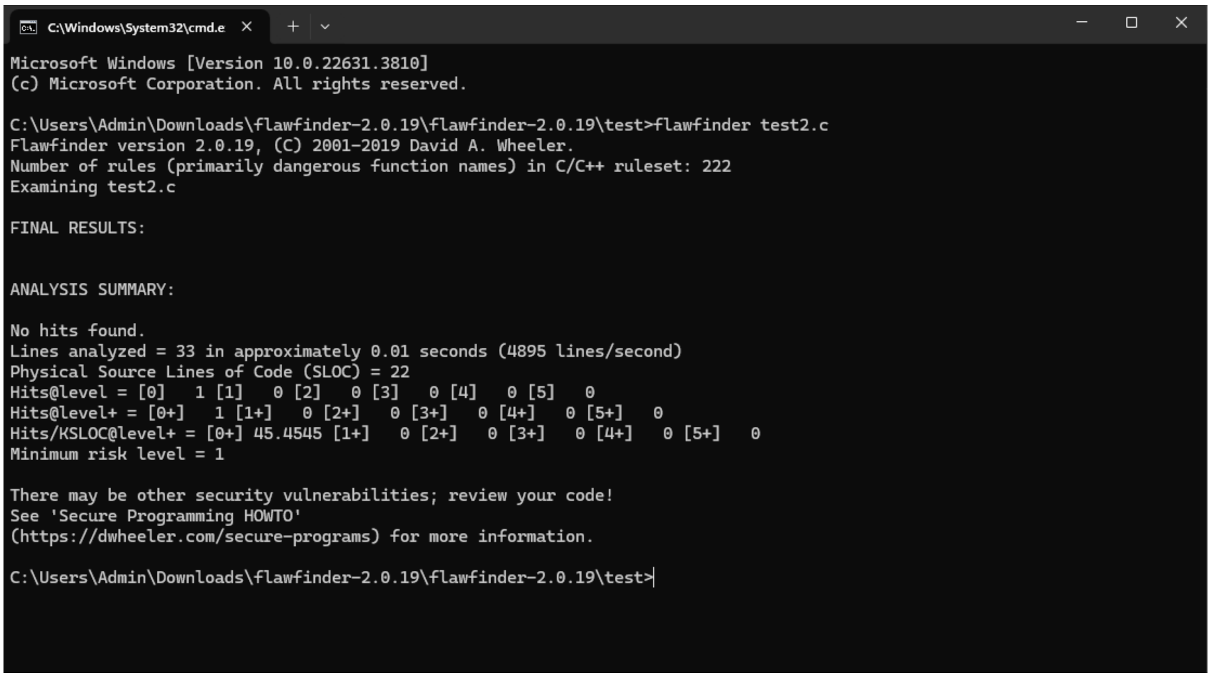



```c
#include <stdio.h>
#include <pthread.h>

#define NUM_THREADS 10
#define NUM_INCREMENTS 1000

// Shared variable
int shared_counter = 0;

void* increment_counter(void* arg) {
    for (int i = 0; i < NUM_INCREMENTS; ++i) {
        shared_counter++; // Unsafe increment operation
    }
    return NULL;
}

int main() {
    pthread_t threads[NUM_THREADS];

    // Create threads
    for (int i = 0; i < NUM_THREADS; ++i) {
        pthread_create(&threads[i], NULL, increment_counter, NULL);
    }

    // Wait for threads to finish
    for (int i = 0; i < NUM_THREADS; ++i) {
        pthread_join(threads[i], NULL);
    }

    printf("Final counter value: %d\n", shared_counter);

    return 0;
}
```

Suraj S. Kaduvetti M.Sc.ComputerScience F015 Practical 1



```
Microsoft Windows [Version 10.0.22631.3810]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Admin\Downloads\flawfinder-2.0.19\flawfinder-2.0.19\test>flawfinder test2.c
Flawfinder version 2.0.19, (C) 2001-2019 David A. Wheeler.
Number of rules (primarily dangerous function names) in C/C++ ruleset: 222
Examining test2.c

FINAL RESULTS:


ANALYSIS SUMMARY:

No hits found.
Lines analyzed = 33 in approximately 0.01 seconds (4895 lines/second)
Physical Source Lines of Code (SLOC) = 22
Hits@level = [0]   1 [1]   0 [2]   0 [3]   0 [4]   0 [5]   0
Hits@level+ = [0+]   1 [1+]   0 [2+]   0 [3+]   0 [4+]   0 [5+]   0
Hits/KSLOC@level+ = [0+] 45.4545 [1+]   0 [2+]   0 [3+]   0 [4+]   0 [5+]   0
Minimum risk level = 1

There may be other security vulnerabilities; review your code!
See 'Secure Programming HOWTO'
(https://dwheeler.com/secure-programs) for more information.

C:\Users\Admin\Downloads\flawfinder-2.0.19\flawfinder-2.0.19\test>
```