

# USB Device Detection Tool – Testing Report

**Tester:** Dragos

**Project:** USB Device Detection (CLI + GUI)

## Test Environment

- Operating System: Windows 10 / Windows 11
- Programming Language: C++
- Compiler: MinGW
- Hardware: Laptop
- Tested Devices:
  - USB Flash Drive 16 GB
  - USB Flash Drive 32 GB

The following components were tested:

- Console application (`main.cpp`)
- GUI application (`main_gui.cpp`)
- USB detection logic (`USBManager.h`)
- Detection of:
  - Connected USB devices
  - Drive letter
  - Volume label
  - File system type
  - Total space
  - Free space

## Test Cases and Observations

### Starting the Application with no USB inserted

Expected Result:

Application should show no USB devices or show empty list.

Observed Result:

- Console version prints "No USB devices found" or an empty list.
- GUI version shows an empty list.

## **Inserting One USB Flash Drive**

Expected Result:

Application should detect:

- Drive letter
- Volume name
- File system
- Total size
- Free space

Observed Result:

- Device is detected correctly
- All information is displayed in both console and GUI
- Sizes are displayed in GB and look correct

## **Inserting Multiple USB Devices**

Expected Result:

Application should list all connected USB drives.

Observed Result:

- All inserted USB devices are detected
- They are displayed correctly in a list
- Information is shown for each device

# **Problems**

## **Some USB Devices Were Not Detected**

Description:

Some USB flash drives were not appearing in the device list even though they were visible in Windows Explorer.

Cause:

The code was only scanning certain drive types and missed removable drives in some cases.

**Fix:**

The detection logic was updated to correctly check and include all removable devices.

### **Program Crashed When No USB Was Inserted**

**Description:**

When the program was started without any USB device connected, it sometimes crashed.

**Cause:**

The program tried to access an empty vector of devices.

**Fix:**

A check was added to handle the case when no devices are found.

### **GUI List Was Not Updating Correctly**

**Description:**

When clicking the Refresh button in the GUI, sometimes the old device list was not cleared and devices appeared duplicated.

**Cause:**

The list control was not being cleared before adding new items.

**Fix:**

The list is now cleared before reloading devices.