# Assignment 5: Implement a Recursive File Search Program in C

Create a C program that performs a recursive search for a **specified file or directory** within the current directory. The program should be capable of identifying files & directories.

A single `.c` file named `filesearch.c` that compiles into an executable. When run, this program should accept a single argument: the name of the file/directory/link to find.

## Functionality Requirements:

1. The core function should be named `search_directory`. It must recursively search the current working directory for the target specified by the user.
2. If the target is found, the program should print the absolute path to the target and its type (file, directory, or link).
3. If the target is not found, the program should output an appropriate message stating that the target was not found.
4. Your program must compile with the standard `gcc` compiler with no additional flags.
5. Ensure that your code includes comments explaining the purpose and logic of your implementation.

## Testing Your Program:

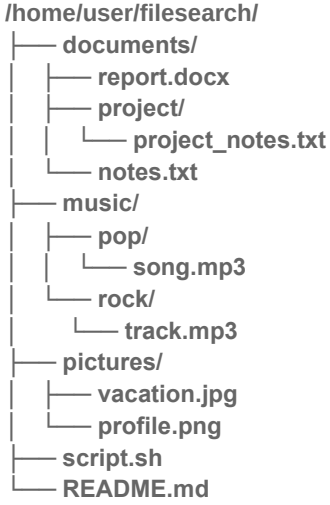
After compiling your `filesearch.c` into an executable, it will be tested by passing a target name as an argument. For example:

```bash
./filesearch "example.txt"
```

**Note:**
You are expected to handle any errors gracefully, such invalid inputs. Your program should not crash under any circumstances.
Ensure your code is well-organized, commented, and adheres to C programming best practices.

# Example Usage

Consider the below directory structure . Currently we are running the script from the /home/user/filesearch/




**Input-1**
./filesearch report.docx
**output-1:**
File found: /home/user/filesearch/documents/report.docx

**Input-2**
./filesearch project
**output-2:**
Directory found: /home/user/filesearch/documents/project

**Input-3**
./filesearch mtl458.c
**output-3:**
The target 'mtl458.c' was not found in the current directory.