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# **prosh** The Productivity Shell

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# What is prosh?

- **prosh** stands for **productivity shell**
- It is a shell that supports user productivity by preventing users from getting distracted

# How does prosh work?

- It provides a **productivity mode**
- While activated, this productivity mode blocks distracting applications and websites

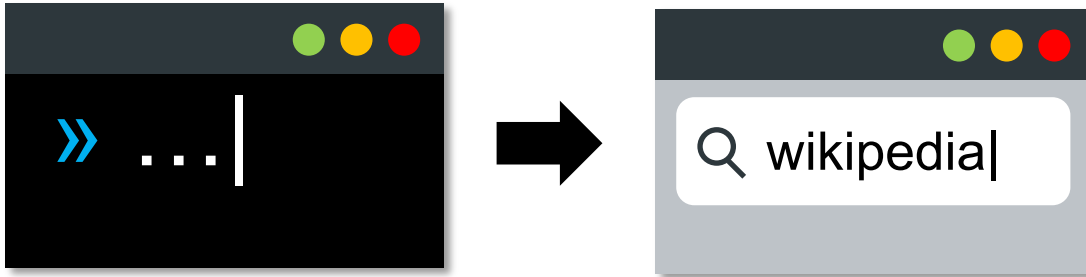
# Example

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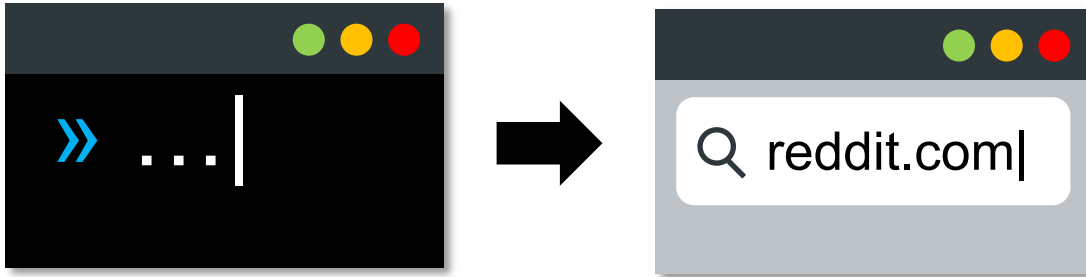
1. Start productivity mode

# Example



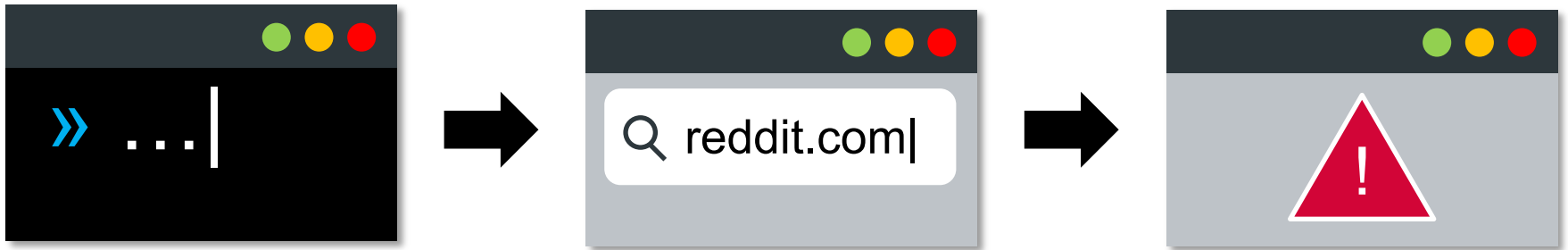
1. Start productivity mode
2. Work on your project

# Example



1. Start productivity mode
2. Work on your project
3. If you try to open a distracting app or website...

# Example



1. Start productivity mode
2. Work on your project
3. If you try to open a distracting app or website, you will receive an error



# Overall Program Structure



main.c



proshdom



productivity\_mode.c



productivity\_mode.h



blacklist\_manager.c

# Shell Implementation

- While loop which takes input
- Input then handled
- Readline library used for command history

```
init_blacklist();  
while (true) {  
    prompt = getcwd();  
    input = readline(prompt);  
    switch (get_command_ID(input)) {  
        case CD:  
            ...  
        case LS:  
            ...  
        ...  
    }  
}
```

# Shell Implementation

Change directory:

```
result = chdir(argument);  
  
if (result < 0)  
    print("error!")
```

List directory:

```
scandir(argument, &list_of_files);  
  
print_file_names(list_of_files);
```

File execution:

```
if (fork() == 0) {  
    execvp(file, arguments);  
} else {  
    wait(NULL);  
}
```

Gimmicks:

- Colored text
  - use special C strings
- “Hackified” welcome message
  - guess letters until correct

# Productivity Mode Implementation

- The productivity mode is a separate thread
- If a new window is created, the blocked processes are killed

```
while (running) {  
    if (new_UI_event) {  
        if (is_window_event) {  
            kill_blocked_processes();  
        }  
    }  
}
```

# Productivity Mode Implementation

- Blocked domains are stored in **/etc/hosts**
- Modifying the hosts file needs root permissions
- We therefore moved this part into a separate executable and run it with **sudo**



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**It's time  
for the demo!**