

BROWSER EXTENSION TO BLOCK TRACKERS

INTERNSHIP PROJECT REPORT

1. Introduction

In today's digital world, many websites track user behavior using third-party scripts for advertisements and analytics. These trackers can affect user privacy and browsing performance.

This project focuses on building a **browser extension that blocks known tracking scripts**, thereby improving privacy and security for users.

The developed Chrome extension automatically blocks tracking domains and shows the number of blocked trackers through a simple popup interface.

2. Project Objective

The main objectives of this project are:

- To understand how browser extensions work
- To learn how tracking scripts operate on websites
- To block known tracker and advertisement domains
- To display analytics such as the number of blocked trackers
- To improve awareness of web privacy and security

3. Tools & Technologies Used

- **Programming Languages:** JavaScript, HTML, CSS
- **Browser:** Google Chrome
- **Extension Standard:** Manifest Version 3
- **Chrome APIs Used:**
 - declarativeNetRequest
 - storage
 - action

4. Project Architecture

The extension consists of the following components:

- **manifest.json** – Defines permissions, rules, and extension configuration
- **background.js** – Handles tracker blocking logic and counter updates
- **popup.html** – Displays blocked tracker count
- **popup.js** – Fetches and updates counter values
- **popup.css** – Styles the popup UI

5. Working Methodology

1. A predefined list of tracking domains is created
2. Chrome monitors outgoing network requests
3. Requests matching tracker domains are blocked automatically
4. Each blocked request increases a counter
5. The counter is stored using Chrome storage
6. The popup displays the total number of blocked trackers

This process runs silently in the background without affecting normal browsing.

6. Testing & Results

The extension was tested on popular websites such as **YouTube**. Results observed:

- Advertisement-related requests were blocked
- Console displayed ERR_BLOCKED_BY_CLIENT
- Popup correctly showed the number of blocked trackers
- Extension worked without affecting website usability

7. Screenshots Included

- Chrome Extensions page with extension enabled
- Developer Console showing blocked tracker requests
- Extension popup displaying blocked tracker count

8. Security & Privacy Considerations

- No personal data is collected
- No browsing history is stored
- All operations occur locally within the browser
- The extension improves user privacy by blocking trackers

9. Conclusion

The Browser Extension to Block Trackers successfully demonstrates how privacy-focused tools can be developed using browser APIs. This project provides a practical introduction to browser security and extension development, making it a valuable learning experience.