AD-Blocker

Rohitsingh Karakoti[1], *Pranay Londhe*[2], *Muskan Sayyed*[3], *Mayank Parad*[4], *Vaishali Bodhale*[5]

[1,2,3,4]FinalYearStudents, DepartmentofComputerEngineering,VivekanandEducationSociety'sPolytechnic,Chembur,Mumbai,Maharashtra, India.
[5]Senior Project Mentor, Department of Computer Engineering, Vivekanand Education Society's Polytechnic, Chembur,Mumbai,Maharashtra, India

ABSTRACT

This Ad Blocker will be developed using Java, Kotlin, Python and other programming languages using Android Studio and basic web developing methods. This application will firstly block all the unwanted and fraud ads which usually interrupt us while working or while doing other stuff online. It will also block the malicious and other dangerous ads which are ready to attack our computers by hacking our spreading virus and may steal and affect our personal data in many ways. This Ad block application's default settings encourage the use of nonintrusive advertising rather than annoying, irrelevant ads. It will also help in disabling or clearing trackers from various websites to further ensure privacy and security

Keywords:SecurityApplication,AndroidApplication,AndroidStudio,SDK,SQL

Introduction

In this project we will be creating an Ad Blocker which will be helping us in blocking or removing annoying and highly interrupting ads which will make web surfing experience un-interrupting and great. This web/android application will help users get rid of ads that create a terrific web surfing experience. This application will block all unwanted and fraud ads which will if not will influence users in getting committed in various financial frauds. This application will block all the malicious and other dangerous ads which are always ready to attack user privacies or even damage the hardware/software of the machine. This application will encourage the use of nonintrusive advertising rather than annoying, irrelevant ads which will be implemented by its default settings and can be changed by wish. It will also help in disabling or clearing trackers from various websites to further ensure privacy and security

LiteratureReview

To summarize the topic briefly in short, Ad Blocker will be the kind of software which will firstly and basically block all the annoying and unwanted ads present on the computer screen we see while surfing on the internet like while reading a blog, news or learning something. It becomes a tedious job to surf online and our learning confidence decreases as we are attracted to these ads and cannot concentrate on the stuff we were doing. Not only unwanted ads but sometimes malicious and spam ads also pop up. So to deal with this situation we decided to create a software that would help users have an ad free experience and they will be able to surf on the internet without any unwanted interruptions. Our software would allow 'non-annoying' ads like the ones related to the topic they are searching online or are usually interested in. Our software will be having a very user-friendly interface where user can choose the options or settings like what type of ads to block, etc. We also guarantee total personal security and privacy with no illegally stealing of files or data present on the device. The motto behind developing this software is to eliminate human efforts and time in blocking ads and give them a great ad free experience online.

Experimental Setup

For this project HTML/CSS, JAVA, JavaScript and Kotlin programming language and for android application we have used Android Studio. For the database we have used SQL to store user details and item information. Their short information is noted below:

- **HTML and CSS**:- HTML is the standard markup language for web pages used for creation of website or web pages and Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML
- **JavaScript**:- JavaScript is a scripting or programming language that is used to implement complex features on web pages. Every time a web page does more than just sit there and display static information for you to look at, JavaScript allows it in displaying timely content updates, interactive maps, animated 2D/3D graphics, scrolling video jukeboxes, etc.
- **JAVA**:- Java is used as the server-side language for most back-end development projects, including those involving big data and Android development.

- **KOTLIN**:- Kotlin can be used for any kind of development, be it server-side, client-side web and Android. It allows developers to write more concise, expressive, and safer code.
- **SQL**:- SQL is used to communicate with a database. It can be used as Client-Server Language used for Back-End Development with Data Administration and Data Analysis

- **Proposed Details Methodology**
  - Developing the project was considered very important to get protection from trackers so after considering the scope and discussing with the group members we decided to create an ad blocker. First we decided to create a webpage where we can explain how to use our ad blocker and provide a link to download our ad blocker and after that we will create an app.
  - Then we will create a user interface for the user to use our website and app and then we will make our app in such a way that the user will have a convenient and efficient experience and we will also provide a review option for the users to give their reviews and opinions on how to improve our app.
  - After getting our project designed by group members and with guidance of our mentor we will be starting the development process of the actual project.
  - For webpages we will be using web development languages like **HTML**-used for creation of website or webpages, CSS-which can add design to the website or webpages, **JAVASCRIPT/PHP**-used for the website to be functionable. And for our application we will use **JAVA**-used as the server-side language for most back-end development, **KOTLIN**-used for functioning of the application, which will be implemented within **ANDROID STUDIO** or any other Development Software.
  - After getting our work done, we will perform several tests on our application and website to see if they are safe from being attacked, check if any bug appears and if it is vulnerable to any hacker.
  - So after launching process there is no problem in our app or site this is our methodology of the project there can be certain changes in case of any problem

- **What is Android Studio**

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems or as a subscription-based service in 2020. It is a replacement for the Eclipse Android Development Tools (E-ADT) as the primary IDE for native Android application development. Android Studio supports all the same programming languages of IntelliJ (and CLion) e.g. Java, C++, and more with extensions, such as Go and Android Studio 3.0 or later supports Kotlin and "all Java 7 language features and a subset of Java 8 language features that vary by platform version." External projects backport some Java 9 features. While IntelliJ states that Android Studio supports all released Java versions, and Java 12, it's not clear to what level Android Studio supports Java versions up to Java 12 (the documentation mentions partial Java 8 support). At least some new language features upto Java 12 are usable in Android.

- **What is Kotlin Programming Language**

Kotlin is a cross-platform, statically typed, general-purpose programming language with type inference. Kotlin is designed to interoperate fully with Java, and the JVM version of Kotlin's standard library depends on the Java Class Library, but type inference allows its syntax to be more concise. Kotlin mainly targets the JVM, but also compiles to JavaScript (e.g., for frontend web applications using React) or native code via LLVM (e.g., for native iOS apps sharing business logic with Android apps). Language development costs are borne by JetBrains, while the Kotlin Foundation protects the Kotlin trademark.

- **What is JAVA Programming Language**

Java is a high-level, class-based, object-oriented programming language that is designed to have as few implementation dependencies as possible. It is a general-purpose programming language intended to let programmers write once, run anywhere (WORA), meaning that compiled Java code can run on all platforms that support Java without the need to recompile. Java applications are typically compiled to bytecode that can run on any Java virtual machine (JVM) regardless of the underlying computer architecture. The syntax of Java is similar to C and C++, but has fewer low-level facilities than either of them. The Java runtime provides dynamic capabilities (such as reflection and runtime code modification) that are typically not available in traditional compiled languages. As of 2019, Java was one of the most popular programming languages in use according to GitHub, particularly for client–server web applications, with a reported 9 million developers.

- **What is SQL Database**

SQL Structured Query Language) is a domain specific language used in programming and designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS). It is particularly useful in handling structured data, i.e. data incorporating relations among entities and variables. SQL offers two main advantages over older read–write APIs such as ISAM or VSAM. Firstly, it introduced the concept of accessing many records with one single command. Secondly, it eliminates the need to specify how to reach a record, e.g. with or without an index. Originally based upon relational algebra and tuple relational calculus, SQL consists of many types of statements, which may be informally classed as sublanguages, commonly: a data query language (DQL), a data definition language (DDL), a data control language (DCL), and a data manipulation language (DML). The scope of SQL includes data query, data manipulation (insert, update and delete), data definition (schema creation and modification), and data access control. Although SQL is essentially a declarative language (4GL), it also includes procedural elements.

Fig. 1 SQL Database connection with Android Studio
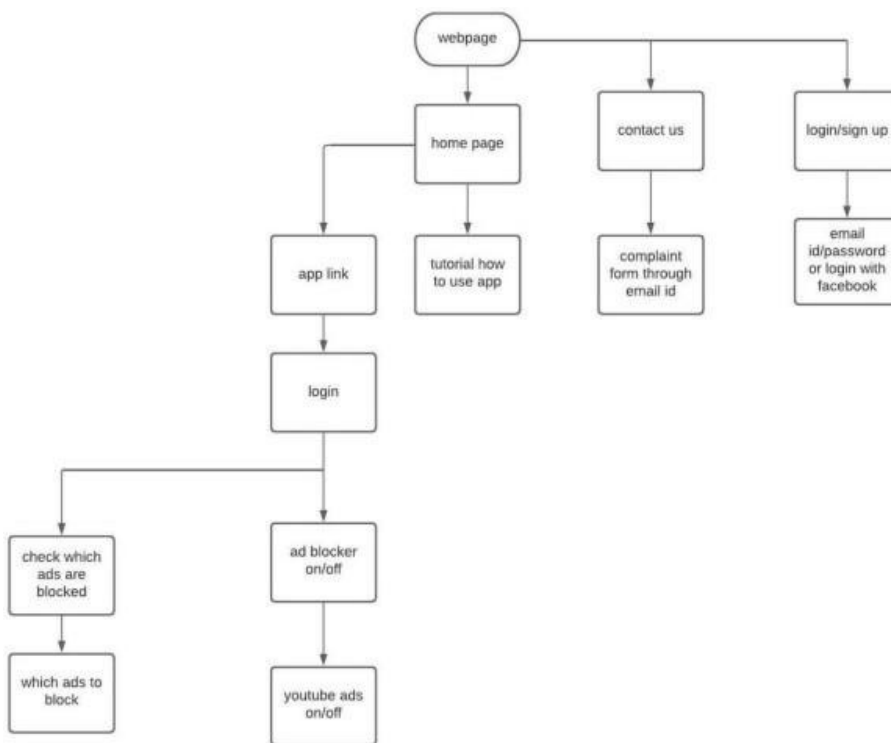
- **Basic Flow of Applications**

Fig. 2 Flowchart for User Login and application

User Login Algorithm:

- Open Website
- Click on Sign Up/Login option on top
- Login or create an account
- Turn On Ad Blocker Software
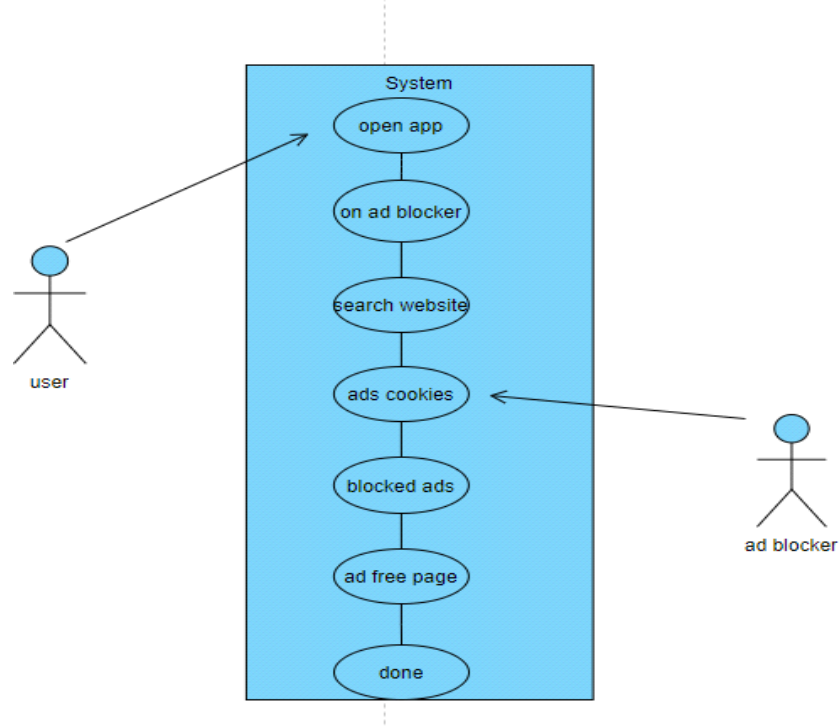- Check and compare different webpages before and after turning on the software

Fig. 3 User and Software Interaction

Algorithm for using the software:

- User opens the software
- User will login with their login credentials
- User will turn ON the software
- User opens a website
- User finds ads and cookies cleared as the AD Blocker software is turned ON
- AD Blocker software blocks ads
- AD Blocker clears cookies
- User gets AD free web page

- **Scope of the Application**

This project has a great scope among the people who use the internet on daily basis and are obvious to get annoyed by the advertisement they get on web pages while surfing on their web browsers and are always in desperate search for a genuine software which would be a good terminator of annoying ads with total user privacy and security. This software not only terminates all the ads and clear cookies but also guarantee user security and privacy which is one of major software requirement which users are in search of. AD Blocking is one of the major and most desired user requirements which makes web surfing smooth and easy with users not getting interrupted by any advertisements.

Conclusion

We have come to a conclusion that Ad Blocking is a basic and highly demanded software application as everyone is obviously annoyed by the advertisements that are shown on almost every web page on the internet. AD free web pages provide a smoot and easy net surfing experience for users and they even undergo interrupted learning. We have made this software by using several programming languages like HTML, CSS, JavaScript, PHP for web application development and for android application development, JAVA, Kotlin were used by us that were executed in Android Studio which is an integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. SQL Database was our choice for the data storage and maintenance. We further conclude that the application we made will surely fulfill every basic ad blocking web requirement desired by the users.

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