

3 INTERFACE

Introduction

System design is the solution to the creation of a new system. This phase is composed of several systems. This phase focuses on the detailed implementation of the feasible system. It emphasis on translating design specifications to performance specification is system design. System design has two phases of development logical and physical design.

During logical design phase the analyst describes inputs (sources), outputs (destinations), databases (data stores) and procedures (data flows) all in a format that meats the uses requirements. The analyst also specifies the user needs and at a level that virtually determines the information flow into and out of the system and the data resources. Here the logical design is done through data flow diagrams and database design.

The physical design is followed by physical design or coding. Physical design produces the working system by defining the design specifications, which tell the developer exactly what the candidate system must do.

The developer writes the necessary programs that accept input from the user, perform necessary processing on accepted data through call and produce the required report on a hard copy or display it on the screen.

3.1 Graphics Design

Graphic design, also known as communication design, is the art and practice of planning and projecting ideas and experiences with visual and textual content. The form it takes can be physical or virtual and can include images, words, or graphics. The experience can take place in an instant or over a long period of time. The work can happen at any scale, from the design of a single postage stamp to a national postal signage system. It can be intended for a small number of people, such as a one-off or limited-edition book or exhibition design, or can be seen by millions, as with the interlinked digital and physical content of an international news organization. It can also be for any purpose, whether commercial, educational, cultural, or political.

- **Ahref Graphic Arts**



Fig. 3.1.1 Ahref Brand Logo

A logo is a graphic mark, emblem, symbol or stylized name used to identify a company, organization, product or brand.



Fig. 3.1.2 Ahref Admin Logo

Here Admin Logo is from the same brand, just to distinguish normal user and Admin.



Fig. 3.1.3 FB Brand Profile Logo

Profile picture and cover photo can be seen by anyone visiting your Fb page. It should be same to recognize your brand from far away



Fig. 3.1.4 Domain Expander

Expand your short link and see what's its original domain.



Fig. 3.1.5 Geotarget

Geotarget your links to redirect visitors to specialized pages and increase your click conversion.



Fig. 3.1.6 Domain Changer

Mask your links so that nobody finds what's inside it.

3.2 Directory Listing and folder Structure

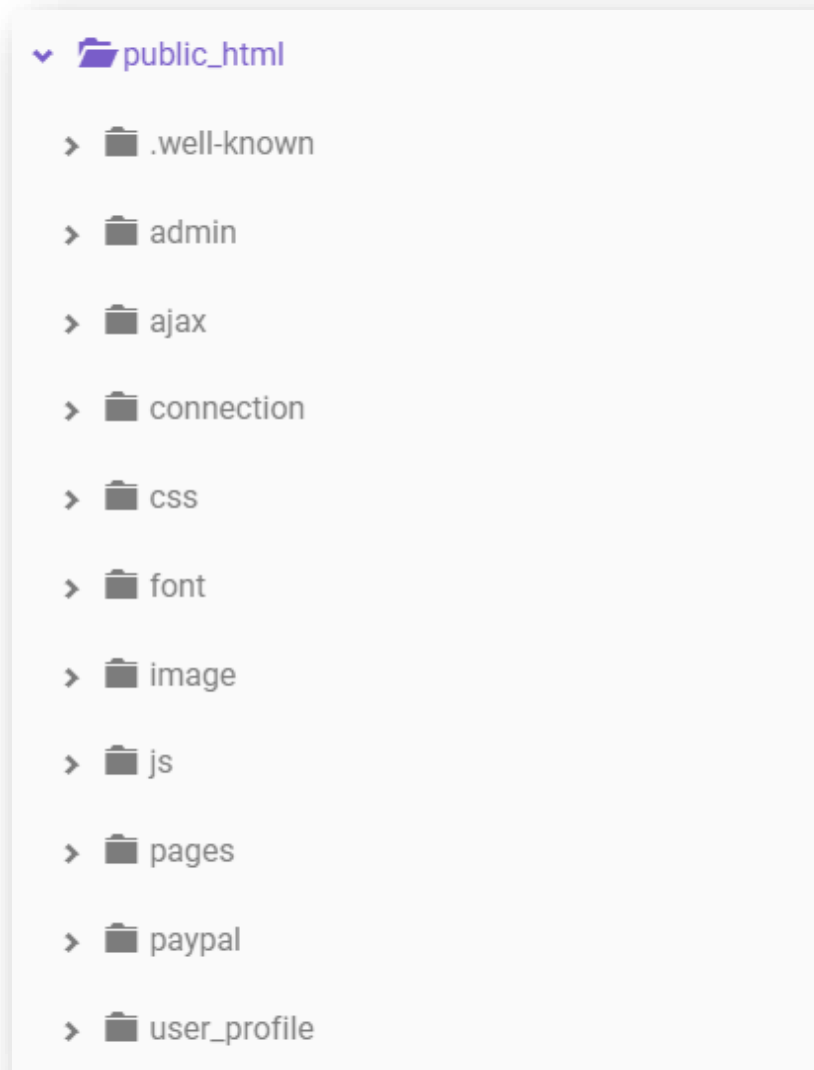


Fig. 3.2.1 Directory listing

Directory listing is a web server function that displays a list of all the files when there is not an index file, such as index.php and default.asp in a specific website directory.

3.3 User Interface Design of Ahref web App

User Interface Design means the design of application with which the user interacts. So it should be kept in mind that UI should be very simple and easy to use. It should be simple enough in look and feel also.



Fig. 3.3.1 Navigation Bar

A navigation bar is a link to appropriate sections/pages in a website that helps readers in traversing the online document. Considered a traditional method of navigation, a navigation can be implemented in a number of ways, namely, horizontally or vertically, or fixed or dynamic. A navigation bar implementation is considered one of the key points of Web design and usability.

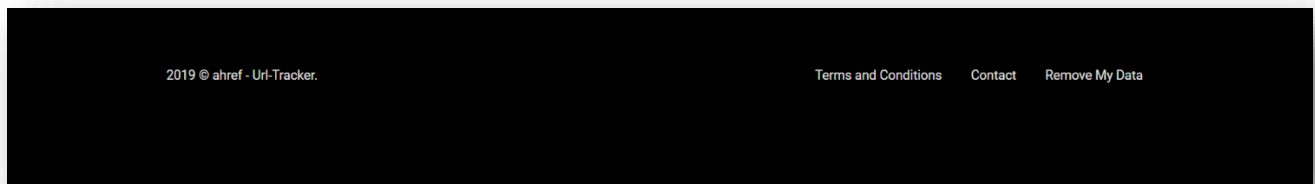


Fig. 3.3.2-Footer

In general, a footer is an area at the bottom of a document page that contains data common to other pages. The information in footers, which includes things like such as page numbers, creation dates, copyrights, or references, can be changed all of the pages in a document at the same time.

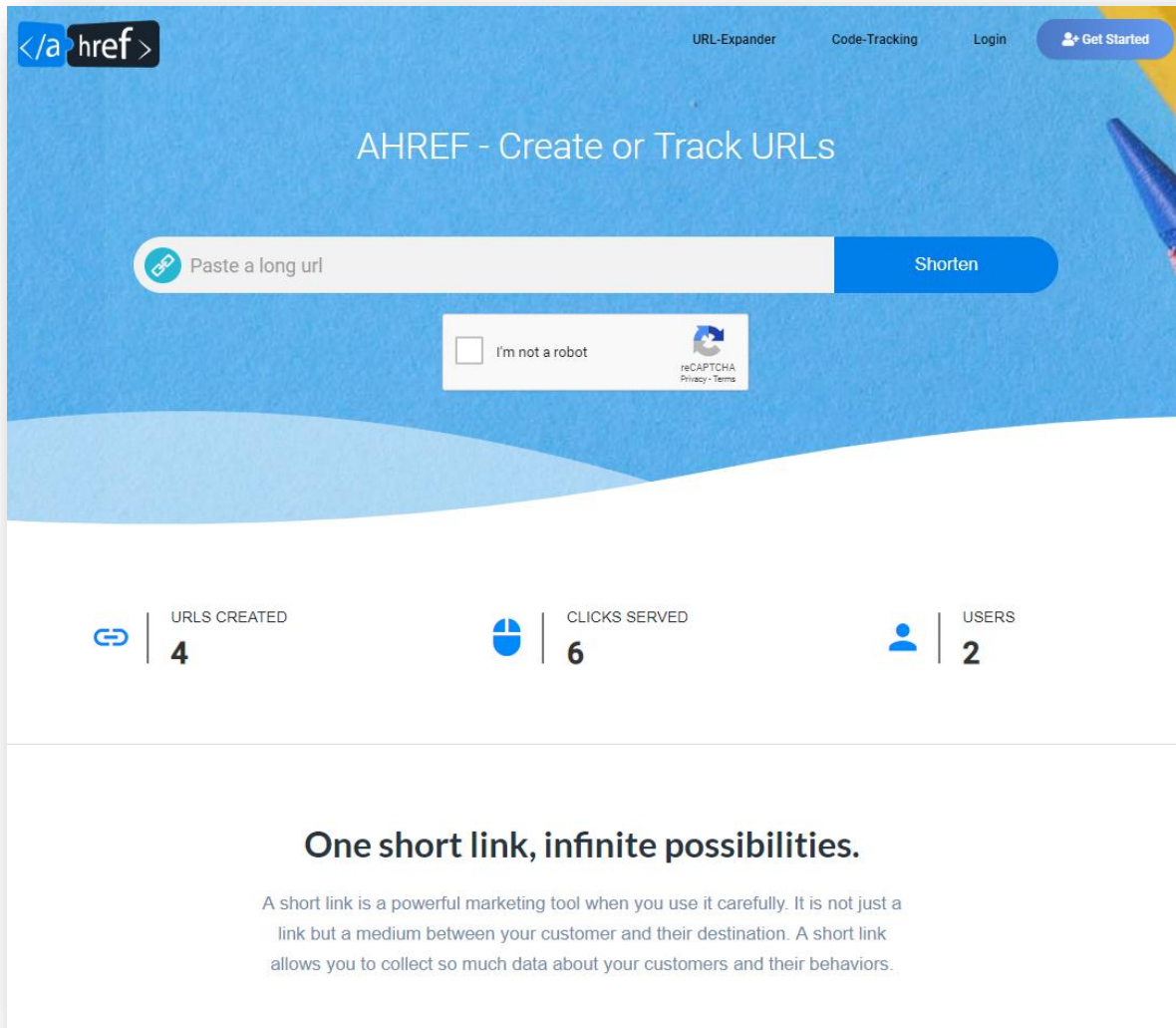



Fig. 3.3.3 Landing Page

Ahref index page often called as landing page. This is first page will open when user request for ahref.tech

The screenshot displays the Ahrefs Track page for a guest user. The page has a blue header with the Ahrefs logo and navigation links: URL-Expander, Code-Tracking, Login, and a Get Started button. The main content area is divided into two columns. The left column, titled 'LINK INFORMATION:', contains a table with the following data:

| LINK INFORMATION: | |
|---------------------|---|
| Original URL | https://www.w3schools.com/JQuery/jquery_get_s...Read More |
| New URL | https://ahref.tech/url/B626B8 Copy Make a custom link |
| Other Links | View Other link Shorteners |
| Tracking Code | CB393 (Kindly keep this code at safe Place). |
| QR Code |  |
| Email Notifications | Please login or register to Activate Email Notification. |
| Memo | Please login or register to create a Memo. |

The right column, titled 'We are social', contains a Facebook Likes section with buttons for 'Like us on Facebook' and 'Follow us on Twitter'.

Below the link information, the 'Views: 0' section shows a note about results from bots and a 'Hide' button. Below this is a table with the following headers: Time, IP Address, Browser, Operating System, User-Agent, Country, Region, and ISP. The table is currently empty, with the text 'RECORDS NOT FOUND!' displayed below it.

The footer contains the copyright notice '2019 © ahref - Url-Tracker.' and links for 'Terms and Conditions', 'Contact', and 'Remove My Data'.

Fig. 3.3.4 Track Page

Once the user enters the desire long URL in the landing text field then that user be considered as Guest user because he is not created an account yet and that's why it the web app works as Guest for the instance. Now user will be redirected to the Track page where user can manage all the activities associated with the long URL.

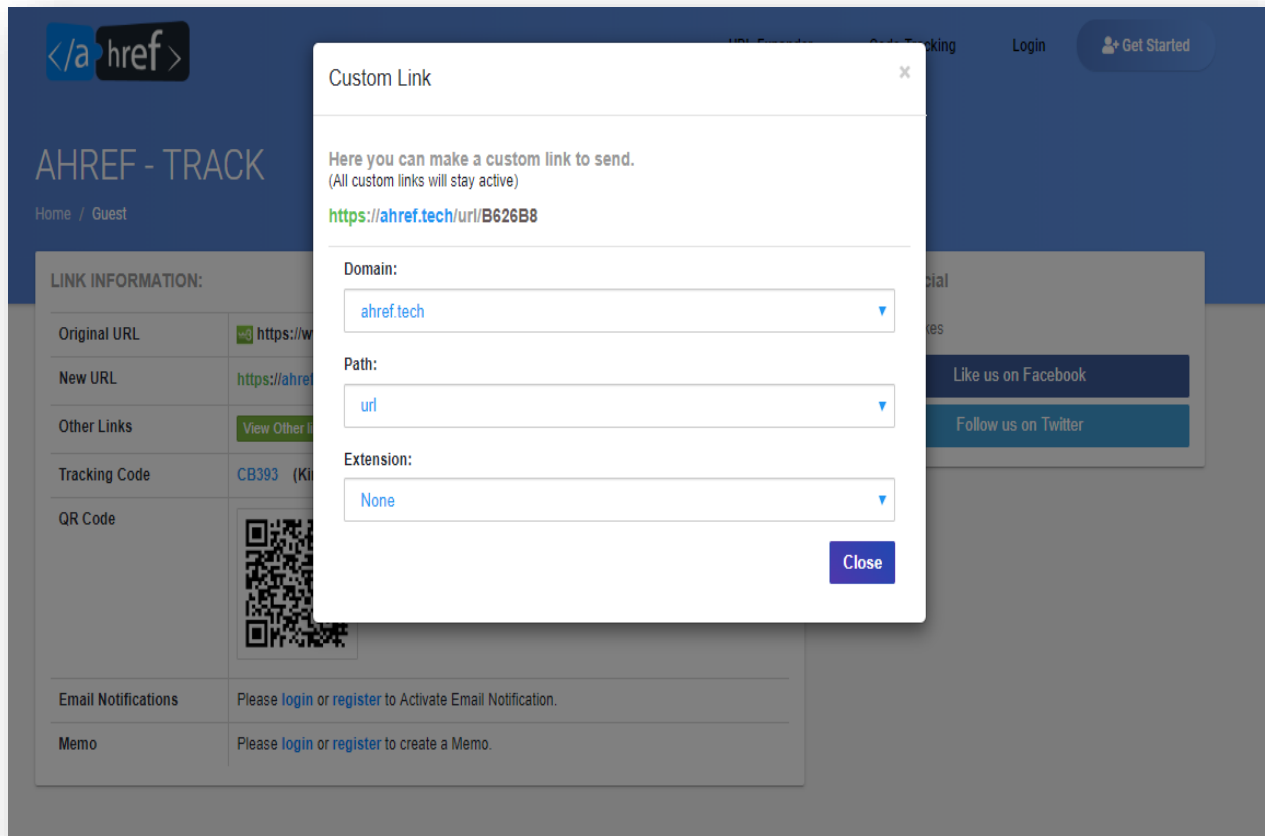


Fig. 3.3.5 Track Page (custom link generation)

Once the long URL is successfully generated into short code now user have ability to customize their default short URL into custom made URL link

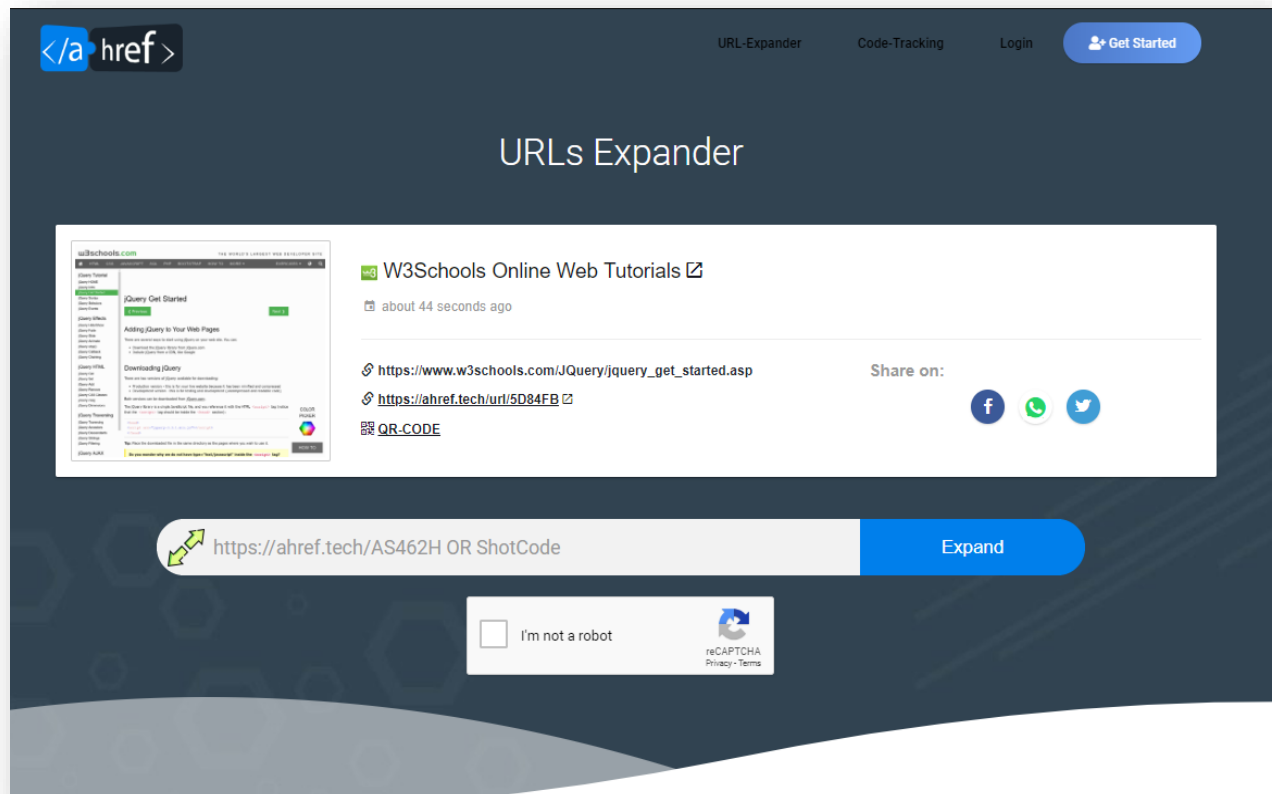


Fig. 3.3.6 URL Expander

URL Expander that unshortens / deshortens any URL to a long URL masked by any URL-Shortener. Once you got the shorten code you can enter the shorten link inside the text field or just the code to make it unshorten.

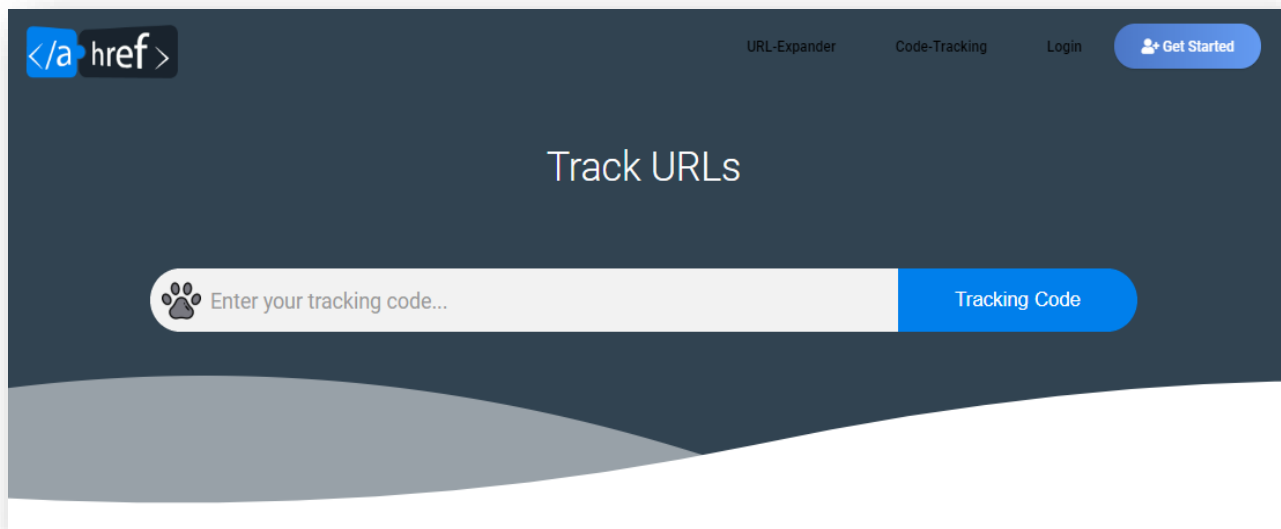




Fig. 3.3.6 Code Tracker

| LINK INFORMATION: | |
|---------------------|---|
| Original URL |  https://katmoviehd.pw/aquaman/ |
| New URL | https://ahref.tech/url/9557C4 Copy Make a custom link |
| Other Links | View Other link Shorteners |
| Tracking Code | 397F0 (Kindly keep this code at safe Place). |
| QR Code |  |
| Email Notifications | Please login or register to Activate Email Notification. |
| Memo | Please login or register to create a Memo. |

Code tracker page will constantly help Guest or registered user to track and manage URL activity. User or visitor need to have a Tracking code in order to access the track page in future. Tracking code can be easily found in User dashboard along with particular naming URL conventions.

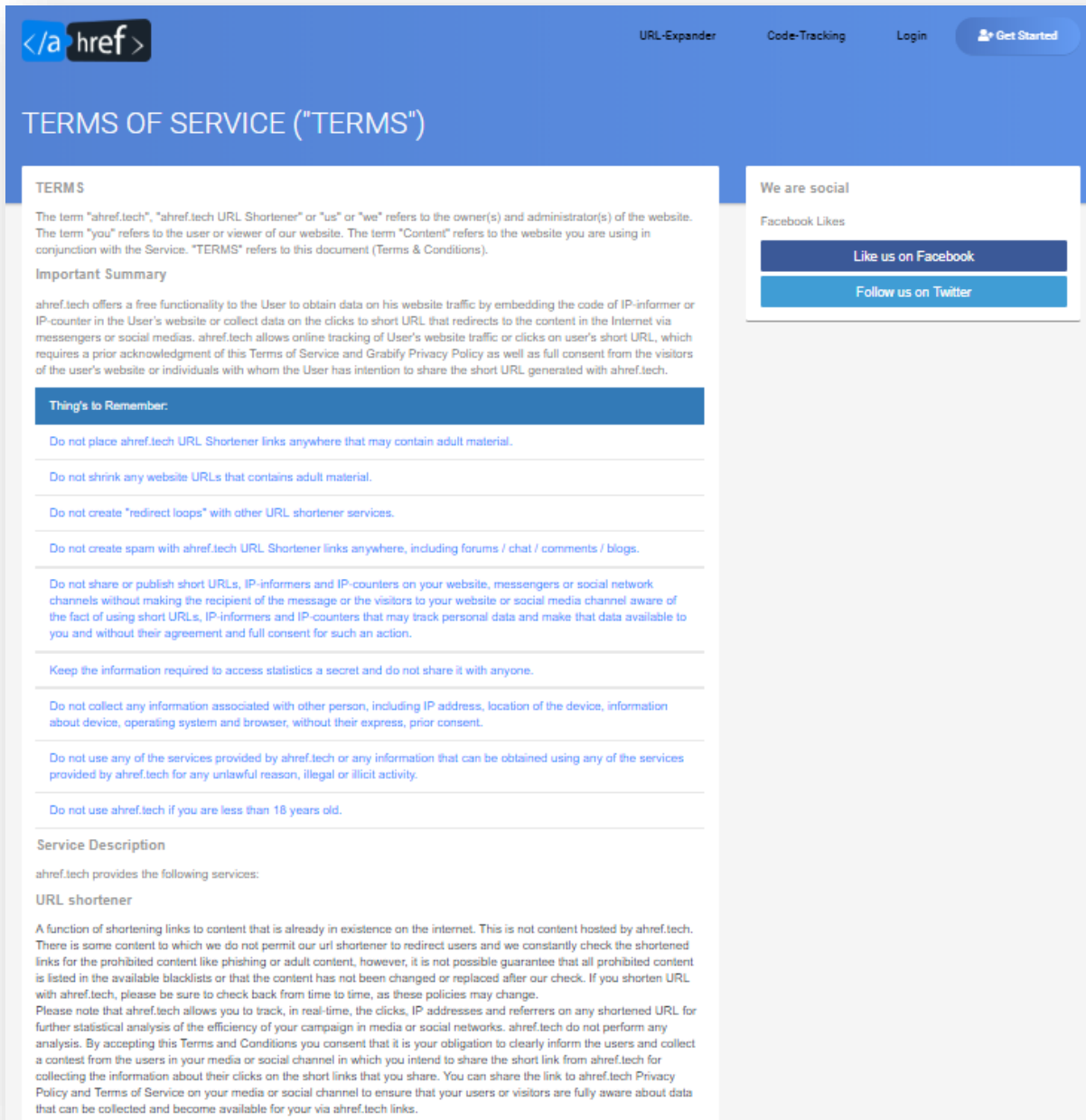


Fig. 3.3.7 Terms and Conditions

Terms of service (also known as terms of use and terms and conditions, commonly abbreviated as TOS or ToS, ToU or T&C) are rules by which one must agree to abide in order to use a service. Terms of service can also be merely a disclaimer, especially regarding the use of websites.

The screenshot shows a web interface for 'Contact us'. At the top left is the 'href' logo. To the right are links for 'URL-Expander', 'Code-Tracking', 'Login', and a blue 'Get Started' button. The main content is a white contact form with the title 'Contact us' and a message: 'If you have any questions, feel free to contact us on this page or email us at support@ahref.tech'. The form contains three input fields: 'Name' with a person icon, 'Email (Required)' with an envelope icon, and 'Message (Required)' which is a large text area. Below these is a reCAPTCHA section with a checkbox labeled 'I'm not a robot' and the reCAPTCHA logo with links for 'Privacy' and 'Terms'. A blue 'SEND' button is at the bottom left of the form.

Fig. 3.3.8 Contact Us

An individual's private or personal information by which another person, business, or entity can use to reach the individual. For example, a company database may have its employees' private and public contact information for purposes of reaching an employee for various reasons. This can also be used to indicate a person. For example, an individual may say that he or she has a contact at XYZ Company, meaning the knows a person at XYZ Company and has a way of reaching this person.

</a href> URL-Expander Code-Tracking Login [Get Started](#)

REMOVE MY DATA

Consequences of My Actions

If you accidentally clicked on a short URL, or viewed a webpage with invisible image logger generated by someone using this website without your prior acknowledgment and consent we recommend you to immediately remove the information that could potentially be recorded in our database regarding your click or view. Although none of your personal identifiable information can be collected with ahref.tech URLs and IP-loggers, this measure will help you to minimize the risk of making your personal information available to someone else.

You can remove the record with your information from the database by providing the short URL that you clicked. In order to identify and delete your information from our database we have to detect your current IP address and information about your device. The detected information will not be saved in our database. If you decide to proceed you provide your full consent for us to detect your IP address and device information for the purpose of removal from the database.

Please note that if your IP address or device information has changed, it may not be possible to identify your record in the database and remove it as it doesn't have any information that can identify you.

We are social


Facebook Likes

[Like us on Facebook](#)

[Follow us on Twitter](#)

Please note that if your IP address or device information has changed, it may not be possible to identify your record in the database and remove it as it doesn't have any information that can identify you.

Link:

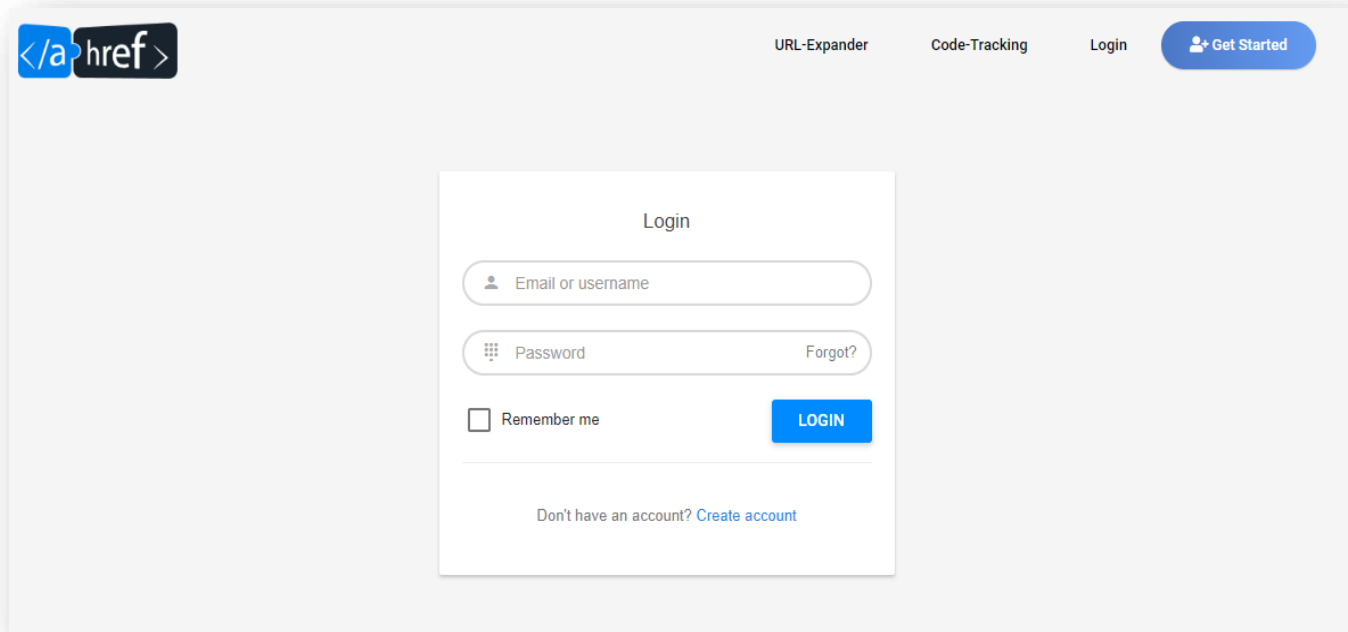
☐ I'm not a robot  reCAPTCHA Privacy - Terms

[Remove](#)

2019 © ahref - Url-Tracker. [Terms and Conditions](#) [Contact](#) [Remove My Data](#)

Fig. 3.3.9 Remove DATA

If somehow user accidentally click on the short link and the personal info is capture in the database then user have a ability to delete his data on the from the db. note that if user IP address or device information has changed, it may not be possible to identify user record in the database and remove it as it doesn't have any information that can identify you.



The screenshot shows a web application interface with a light gray background. In the top left corner, there is a logo consisting of a blue square with a white code tag icon and the text 'href' in white. To the right of the logo, there are three links: 'URL-Expander', 'Code-Tracking', and 'Login'. Further right is a blue button with a white user icon and the text 'Get Started'. In the center of the page is a white login form. The form has a title 'Login' at the top. Below the title are two input fields: the first is labeled 'Email or username' and the second is labeled 'Password'. To the right of the password field is a link 'Forgot?'. Below the password field is a checkbox labeled 'Remember me' and a blue button labeled 'LOGIN'. At the bottom of the form, there is a link 'Don't have an account? Create account'.

Fig. 3.3.1.0 Login Page

A login, logging in or logging on is the entering of identifier information into a system by a user in order to access that system (e.g., a computer or a website). A login generally requires the user to enter two pieces of information, first a user name and then a password. Once user enters correct Credentials then user can able to access the user dashboard.

The image shows a web interface for a 'Get Started' page. At the top left is a logo with the text 'href>'. To its right are links for 'URL-Expander', 'Code-Tracking', and 'Login'. Further right is a blue button labeled 'Get Started' with a user icon. The main content area contains a 'Get Started' form. The form has three input fields: 'Username' (with a person icon), 'Email address' (with an envelope icon), and 'Password' (with a grid icon). Below these is a reCAPTCHA widget with the text 'I'm not a robot' and a 'reCAPTCHA Privacy - Terms' link. Underneath is a checkbox labeled 'I agree to the terms and conditions.' At the bottom of the form is a large blue button labeled 'CREATE ACCOUNT'. Below this button is a link that says 'Already Have an account? Click Here'.

Fig. 3.3.1.1 Signup Page

A registered user is a user of a website, program, or other system who has previously registered. Registered users normally provide some sort of credentials (such as a username or e-mail address, and a password) to the system in order to prove their identity: this is known as logging in. Systems intended for use by the general public often allow any user to register simply by selecting a *register* or *sign up* function and providing these credentials for the first time. Registered users may be granted privileges beyond those granted to unregistered users.

3.4 User Interface Design of User Dashboard

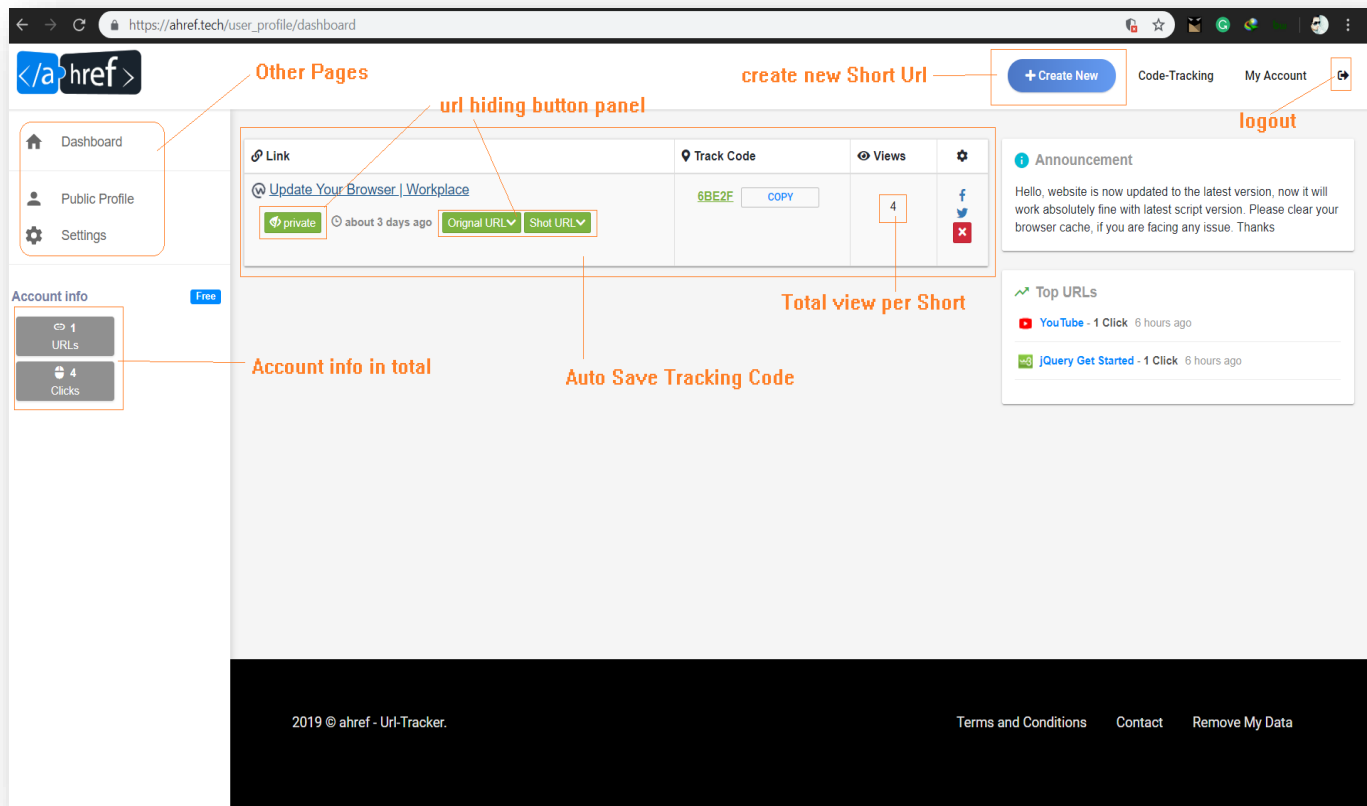


Fig. 3.4.1 User Dashboard

In information technology, a dashboard is a user interface that, somewhat resembling an automobile's dashboard, organizes and presents information in a way that is easy to read. However, a computer dashboard is more likely to be interactive than an automobile dashboard (unless it is also computer-based). To some extent, most graphical user interfaces (GUIs) resemble a dashboard. However, some product developers consciously employ this metaphor (and sometimes the term) so that the user instantly recognizes the similarity. Once user is logged in now all the short code that he will create gonna save in its dashboard. This will help user to keep track its shotners.

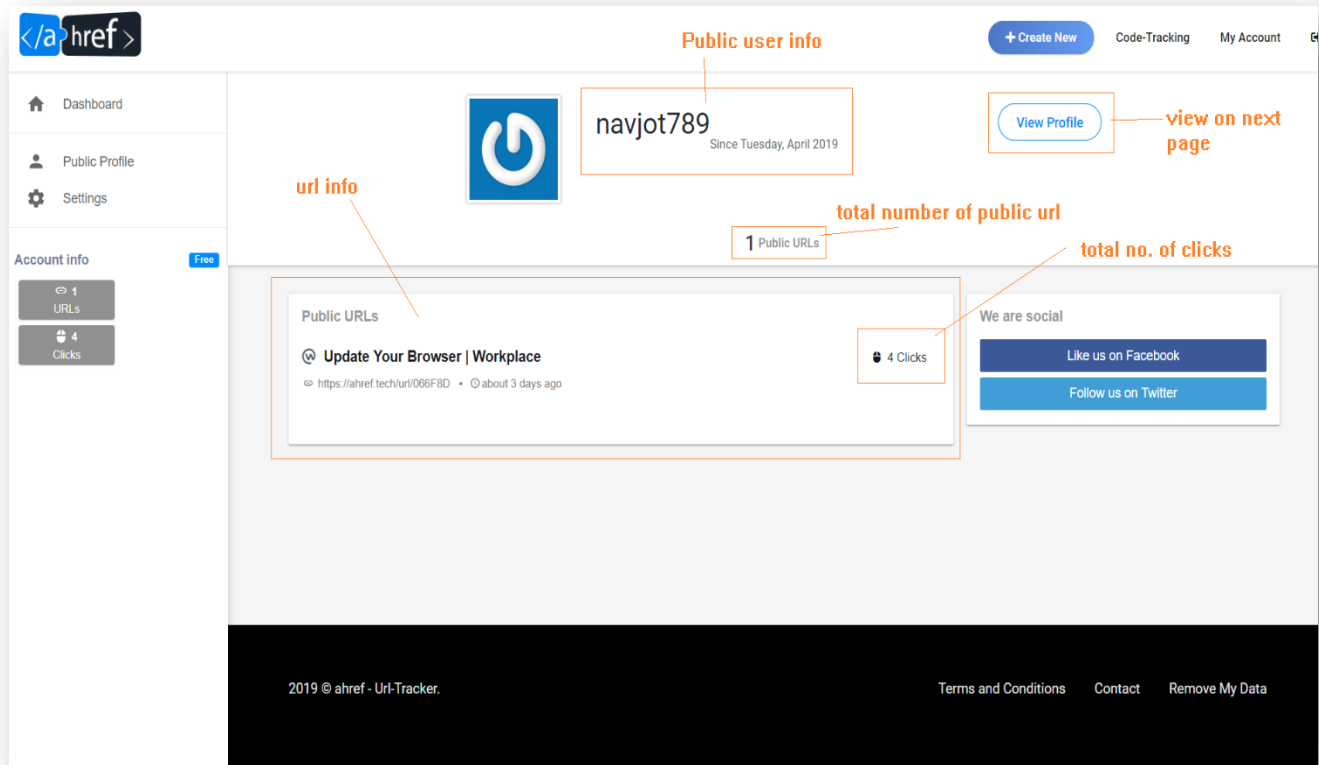
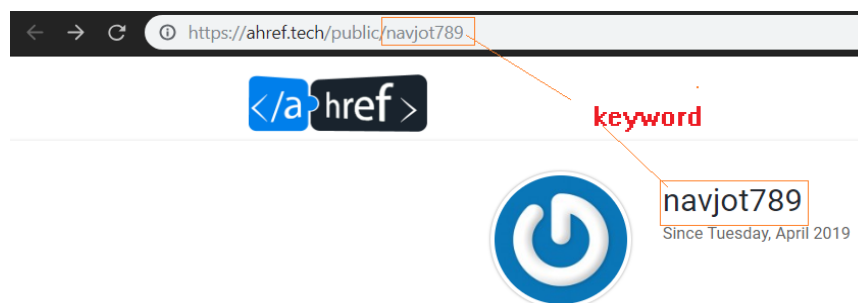


Fig. 3.4.2 User Public profile

Public profile gives user ability to show publicly there all the short URL that he Created so long, user can manage these links by going in user dashboard and by enabling 7 disabling public/private button.

User public profile can be access by User **Username:**

Example:



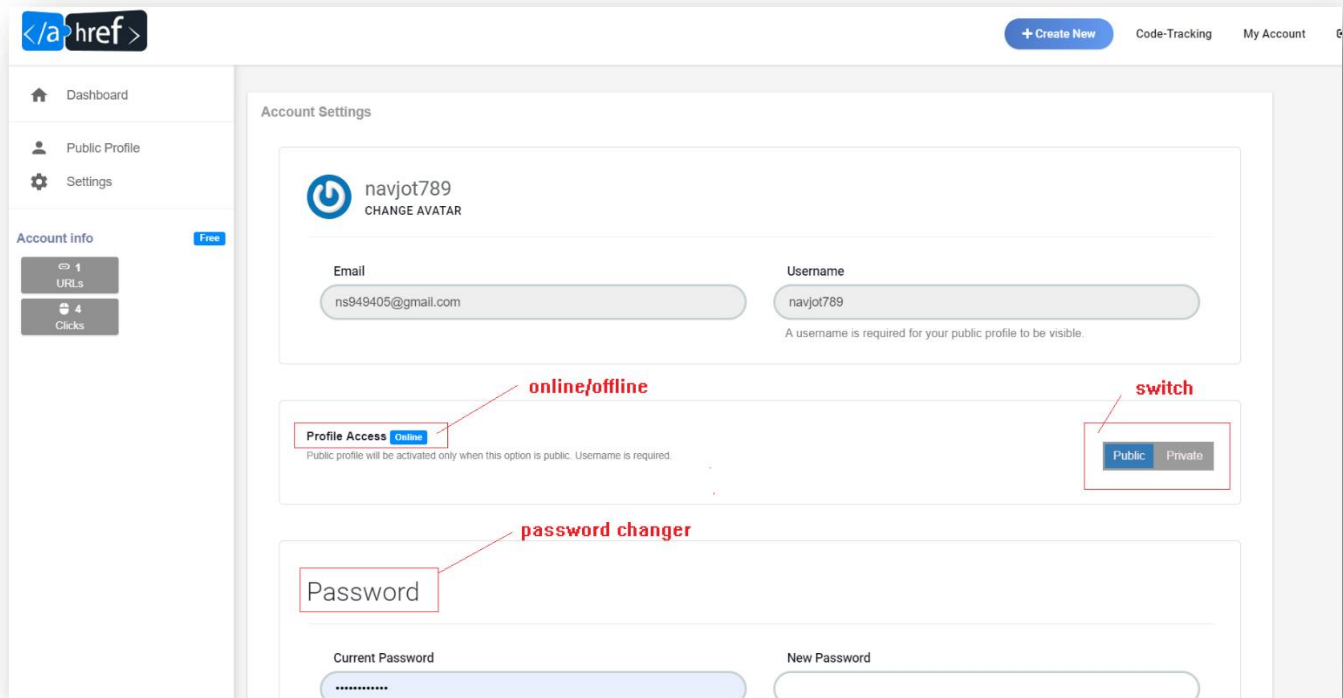


Fig. 3.4.3 User Dashboard Account Settings

Here user can be able to change the account setting according to its convenient. Public profile switch help user to on/off the public profile visibility. Password change helps the User to quickly change its password but user must be knowing the old account password in order to change password.

3.5 User Interface Design of Admin Dashboard

Administrators use specialized software to store and organize data of user.

The role may include capacity planning, installation, configuration, database design, migration, performance monitoring, security, troubleshooting, as well as backup and data recovery

Ahref Administrator can be access using below link:

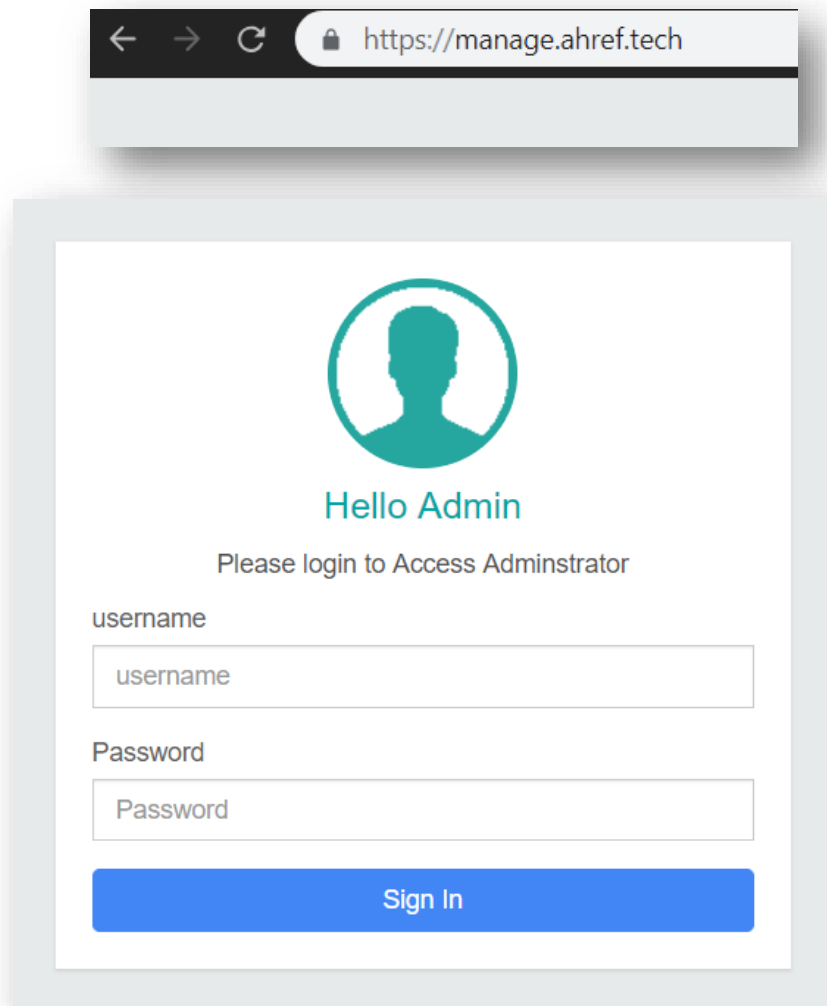
A screenshot of a web browser showing the Ahref Admin Login Panel. The browser's address bar displays the URL "https://manage.ahref.tech". The login panel itself has a white background with a light gray border. At the top, there is a teal circular icon containing a white silhouette of a person's head and shoulders. Below this icon, the text "Hello Admin" is written in a teal font. Underneath, the text "Please login to Access Administrator" is displayed in a smaller, gray font. The login form consists of two input fields: the first is labeled "username" in gray text and contains the placeholder "username"; the second is labeled "Password" in gray text and contains the placeholder "Password". At the bottom of the form is a blue rectangular button with the text "Sign In" in white.

Fig. 3.5.1 Admin Login Panel

By entering Admin Credentials, you will be able to access the admin dashboard.

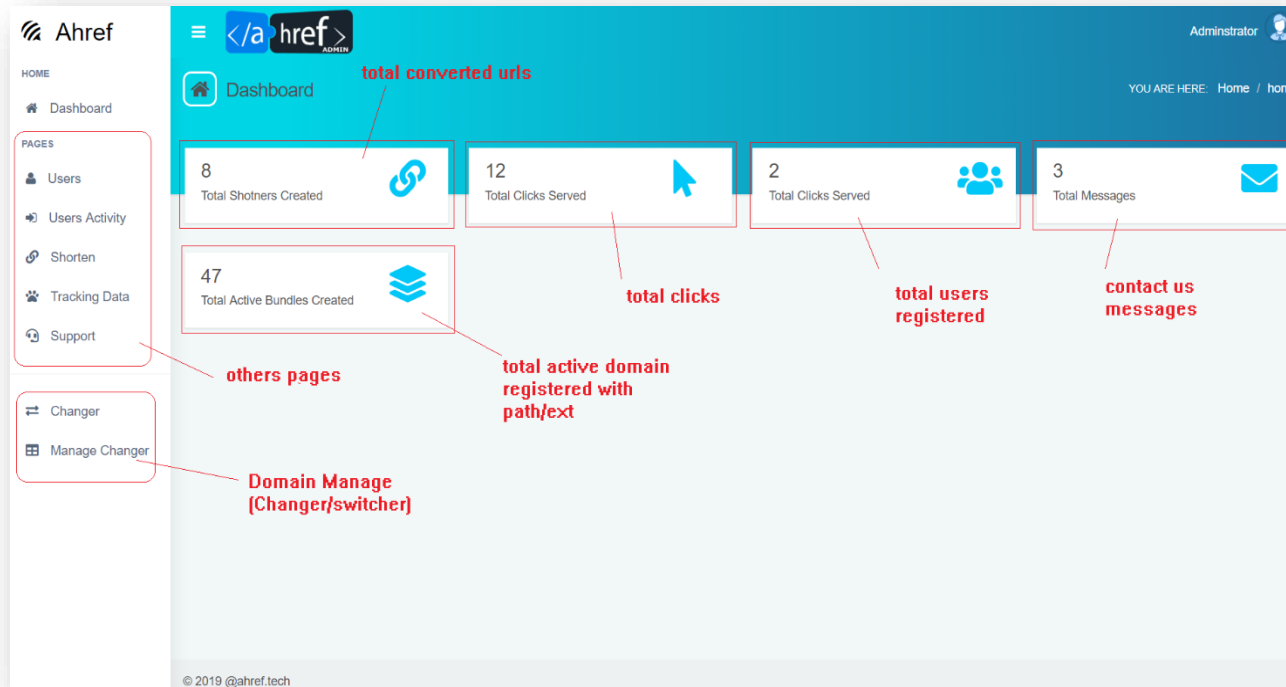


Fig. 3.5.2 Admin Dashboard

Once the login credentials are entered then the first page visible will be dashboard

This page contains all the statics records of data. Admin has permission to add delete update Records in the database. All change will reflect directly to the user profile in real time.

| Registered Users | | | | | | | | |
|--|------------|------------------------|---|---------|---------------------|---------------------|----------|----------|
| Status | Show all ▾ | | Search | | | | | |
| #UID | Username | Email | TOS Agreement | Public | Join Date | Pass Update Date | Status | Action |
| 135 | bvocsd | b.o.vocation@gmail.com | <input checked="" type="checkbox"/> check | offline | 2019-04-15 23:36:45 | No update | verified | Option ▾ |
| Password: \$2y\$10\$.D.6sR4yxjRnneFTTqMIZ.mo57bNn0zGFqth.A8PdwYpS0LZmx0fq Gen.Token: e50585af5629bcab128e2da0be87f9f6 | | | | | | | | |
| 128 | navjot789 | ns949405@gmail.com | <input checked="" type="checkbox"/> check | online | 2019-04-09 23:40:22 | 2019-04-10 12:09:08 | verified | Option ▾ |
| Password: \$2y\$10\$csuHHL7oNRQfpt6izo7dt.LQFR9M5Y2Hah4.CUdrt7r0IXozWej2 Gen.Token: 6f360ad0042fd3d02c0c22de2d8f918f | | | | | | | | |
| <div>« ‹ 1 › »</div> | | | | | | | | |

Fig. 3.5.3 Admin User Dashboard

Once the user is registered and Activate his profile by going to his personal email ID this process act as a proof here that the user is Valid. All the registered user will be visible here. Admin has Authority to delete any user data and suspend any user as well. The password & token wasn't be in plain text due to security reasons. Token is generated at the time once the user is successfully activating his profile by the link that sent to his email ID. Link is valid for 4hr else link will be expire.

| Show | 10 | entries | Search: | |
|-----------------------------|------|-----------------|---------------------|---------------------|
| #ACID | #UID | IP | Login At | Logout At |
| 8 | 128 | 106.192.27.90 | 2019-04-16 16:01:11 | 2019-04-16 17:14:14 |
| 9 | 135 | 106.192.158.114 | 2019-04-15 23:37:48 | 2019-04-15 23:38:02 |
| Showing 1 to 2 of 2 entries | | | | |

Fig. 3.5.4 User (Login History)

Once the user is login to user dashboard the timestamp is started and its login activity is noted. Same as for logout. This is done due to security reasons.

Shotner

Show 10 entries

Search:

| #UID | #UserID | Memo | Long URL | Title | Desc | S-CODE | T-CODE | Bitly | Tiny | Shote.st | Public | E-notify | Date | Action |
|--------|---------|---------------|--|---------------------------------|--|--------|--------|---------|----------|----------|---------|----------|---------------------|--------|
| 100162 | Guest | N/A | https://trainings.internshala.com/d... Read More | Internshala Trainings | Learn online and build exciting pro... Read More | 03D943 | 903A6 | 2Vlt4mU | yxj536w | wNl4P8 | N/A | N/A | 2019-04-13 17:16:05 | Delete |
| 100163 | Guest | N/A | https://music.youtube.com/ | Jau greitai YouTube Music | Pristatome „YouTube Music“. Netruku... Read More | F0CE5A | 8663F | 2D853ZQ | qa2eg8d | wNVXUj | N/A | N/A | 2019-04-13 17:19:08 | Delete |
| 100164 | 128 | for testing p | https://work-79657205.facebook.com/... Read More | Update Your Browser Workplace | ERROR: 404 | 066F8D | 6BE2F | 2VO7fNr | y5ebbdsv | wNZKLL | Private | Disable | 2019-04-13 23:27:07 | Delete |

Showing 1 to 8 of 8 entries

< 1 >

Fig. 3.5.5 Shotners

All the shotners that are created so far will be noted in the shotners Activity. Whether it's a guest user or Account holder it doesn't matter. It's a main hub for all shotners, Admin have privileges to private/public private and disable email notification, delete on any shotner

| Tracked Data | | | | | | | | | | | | | |
|--------------|-----------------|-----------------|------------------------------|--|-----|---------------|-----------------|-----------------------|---------|----------|----------|---------------------|--------|
| Show | 10 | entries | Search: <input type="text"/> | | | | | | | | | | |
| #TrackID | #IP | Browser | O.S | Full Spec | Bot | Country | Region | ISP | LAT | LON | Shorturl | Date | Action |
| 531 | 106.192.142.224 | Chrome | Windows 10 | Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/73.0.3683.103 Safari/537.36 | | India | Punjab | Bharti Airtel Limited | 30.901 | 75.8573 | 066F8D | 2019-04-13 23:27:53 | |
| 532 | 106.192.140.176 | Chrome | Windows 10 | Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/73.0.3683.103 Safari/537.36 | | India | Punjab | Bharti Airtel Limited | 30.901 | 75.8573 | 03D943 | 2019-04-14 22:31:26 | |
| 533 | 106.192.14.80 | Chrome | Windows 10 | Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/73.0.3683.103 Safari/537.36 | | India | Haryana | Bharti Airtel Limited | 28.4909 | 77.0803 | 03D943 | 2019-04-15 00:04:01 | |
| 536 | 199.16.157.181 | Unknown Browser | Unknown OS Platform | BOT : Twitterbot/1.0 | | United States | California | Twitter Inc. | 37.7768 | -122.416 | 066F8D | 2019-04-15 11:44:31 | |
| 537 | 17.58.100.215 | Safari | Mac OS X | BOT : Mozilla/5.0 (Macintosh; Intel Mac OS X 10_10_1) AppleWebKit/600.2.5 (KHTML, like Gecko) Version/8.0.2 Safari/600.2.5 (Applebot/0.1; +http://www.apple.com/go/applebot) | | United States | California | Apple Inc. | 37.323 | -122.032 | 066F8D | 2019-04-15 11:44:31 | |
| 538 | 54.36.149.196 | Unknown Browser | Unknown OS Platform | BOT : Mozilla/5.0 (compatible; Ahr... Read More) | | France | Hauts-de-France | OVH SAS | 50.6916 | 3.20026 | 066F8D | 2019-04-15 11:45:40 | |

Showing 1 to 10 of 12 entries

Fig. 3.5.6 Tracking Data

Once the Short link is generated and spread on any platform, anybody that clicked on the link its details will be captured and uploaded to the backend. Here Admin has privilege that the data can be modified or deleted. Also, normal user and bot are distinguishing with the help of font awesome icon

| Messages | | | | | |
|----------|--------------|----------------------------|------------------------------|---------------------|--------|
| Show | 10 | entries | Search: <input type="text"/> | | |
| #SID | Name | email | Message | Date | Action |
| 4 | Navjot Singh | ns9637249405@gmail.com | | 2019-04-13 18:51:25 | |
| 6 | Navjot Singh | b.o.vocation@gmail.com | kkkk | 2019-04-13 18:52:04 | |
| 9 | rohit | ns949405@gmail.com | I need help | 2019-04-14 01:57:13 | |
| 10 | Sonalika | sharmasonalika49@gmail.com | Hi | 2019-04-16 18:36:20 | |

Showing 1 to 4 of 4 entries

Fig. 3.5.7 Support Messages

If in future if any user facing issue regard his account or any other query that he has, will be deliver to the messages table. All records being captured here. Admin has privilege to delete or replay back in order to communicate with the user.

Domain Customizer visit site

Presented view of Active Available Domains.

Domain: ahref.tech

Path: url

extension: None

Domain || Path || Extension

Note: Add domain without Protocol.
Note: Add Domain with TLD

Domain OR Path OR Extension ---Category--- + Add

Fig. 3.5.8 Domain Customizer

Admin can add new **domain + path + extension** and all change would be reflected in above select tags

Manage Changer

Status: domain Search

| #/BID | Bundle | Category | Sub Category | Action |
|-------|-----------------------|----------|--------------|--------|
| 69 | git-hub.tk | domain | Tech | Delete |
| 68 | twitter.tk | domain | Social | Delete |
| 67 | stackoverflow-flow.tk | domain | Tech | Delete |
| 66 | youtube-e.ml | domain | Social | Delete |
| 65 | stackoverflow.ml | domain | Tech | Delete |
| 64 | google-e.ga | domain | Tech | Delete |
| 63 | g-oogle.ml | domain | Tech | Delete |

« 1 2 3 »

Fig. 3.5.9 Manage Changer

All the newly added domain + path + extension is store in the Manage changer page

3.6 Database Design

Database design is the process of producing a detailed data model of a database. This logical data model contains all the needed logical and physical design choices and physical storage parameters needed to generate a design in a data definition language, which can then be used to create a database. A fully attributed data model contains detailed attributes for each entity.

The term database design can be used to describe many different parts of the design of an overall database system. Principally, and most correctly, it can be thought of as the logical design of the base data structures used to store the data. In the relational model these are the tables and views. In an object database the entities and relationships map directly to object classes and named relationships. However, the term database design could also be used to apply to the overall process of designing, not just the base data structures, but also the forms and queries used as part of the overall database application within the database management system (DBMS).

The process of doing database design generally consists of a number of steps which will be carried out by the database designer. Usually, the designer must:

- Determine the relationships between the different data elements.
- Superimpose a logical structure upon the data on the basis of these relationships.

Design process

- Determine the purpose of the database - This helps prepare for the remaining steps.
 - Find and organize the information required - Gather all of the types of information to record in the database, such as product name and order number.
 - Divide the information into tables - Divide information items into major entities or subjects, such as Products or Orders. Each subject then becomes a table.
 - Turn information items into columns - Decide what information needs to be stored in each table.
-

- Each item becomes a field, and is displayed as a column in the table. For example, an Employees table might include fields such as Last Name and Hire Date.
- Specify primary keys - Choose each table's primary key. The primary key is a column, or a set of columns, that is used to uniquely identify each row. An example might be Product ID or Order ID.
- Set up the table relationships - Look at each table and decide how the data in one table is related to the data in other tables. Add fields to tables or create new tables to clarify the relationships, as necessary.

Overview and interconnection of web Hosting

List of Available Active Domains: Main domain: <http://ahref.tech>

17 Records Found, Page 1 of 1

| Domain | Registration Date | Expiry date | Status | Type | |
|-----------------------------------|-------------------|-------------|--------|------|-------------------------------|
| stackoverflow.tk | 05/02/2019 | 05/02/2020 | ACTIVE | Free | Manage Domain |
| xda-developers.ml | 05/02/2019 | 05/02/2020 | ACTIVE | Free | Manage Domain |
| youtube.ga | 05/02/2019 | 05/02/2020 | ACTIVE | Free | Manage Domain |
| youtube.ml | 05/02/2019 | 05/02/2020 | ACTIVE | Free | Manage Domain |
| dailym0tion.tk | 05/02/2019 | 05/02/2020 | ACTIVE | Free | Manage Domain |
| vimeo.gq | 05/02/2019 | 05/02/2020 | ACTIVE | Free | Manage Domain |
| vev0.cf | 05/02/2019 | 05/02/2020 | ACTIVE | Free | Manage Domain |
| sarahaah.tk | 05/02/2019 | 05/02/2020 | ACTIVE | Free | Manage Domain |
| twitter.tk | 23/02/2019 | 23/02/2020 | ACTIVE | Free | Manage Domain |
| git-hub.tk | 23/02/2019 | 23/02/2020 | ACTIVE | Free | Manage Domain |
| git-hub.ml | 23/02/2019 | 23/02/2020 | ACTIVE | Free | Manage Domain |
| g-oogle.ml | 23/02/2019 | 23/02/2020 | ACTIVE | Free | Manage Domain |
| googl-e.ga | 23/02/2019 | 23/02/2020 | ACTIVE | Free | Manage Domain |
| stack-overflow.ml | 23/02/2019 | 23/02/2020 | ACTIVE | Free | Manage Domain |
| stackoverflow.tk | 23/02/2019 | 23/02/2020 | ACTIVE | Free | Manage Domain |
| youtub-e.ml | 23/02/2019 | 23/02/2020 | ACTIVE | Free | Manage Domain |
| yout-ube.tk | 23/02/2019 | 23/02/2020 | ACTIVE | Free | Manage Domain |

Fig. 3.6.1 Available connected domains to the hub

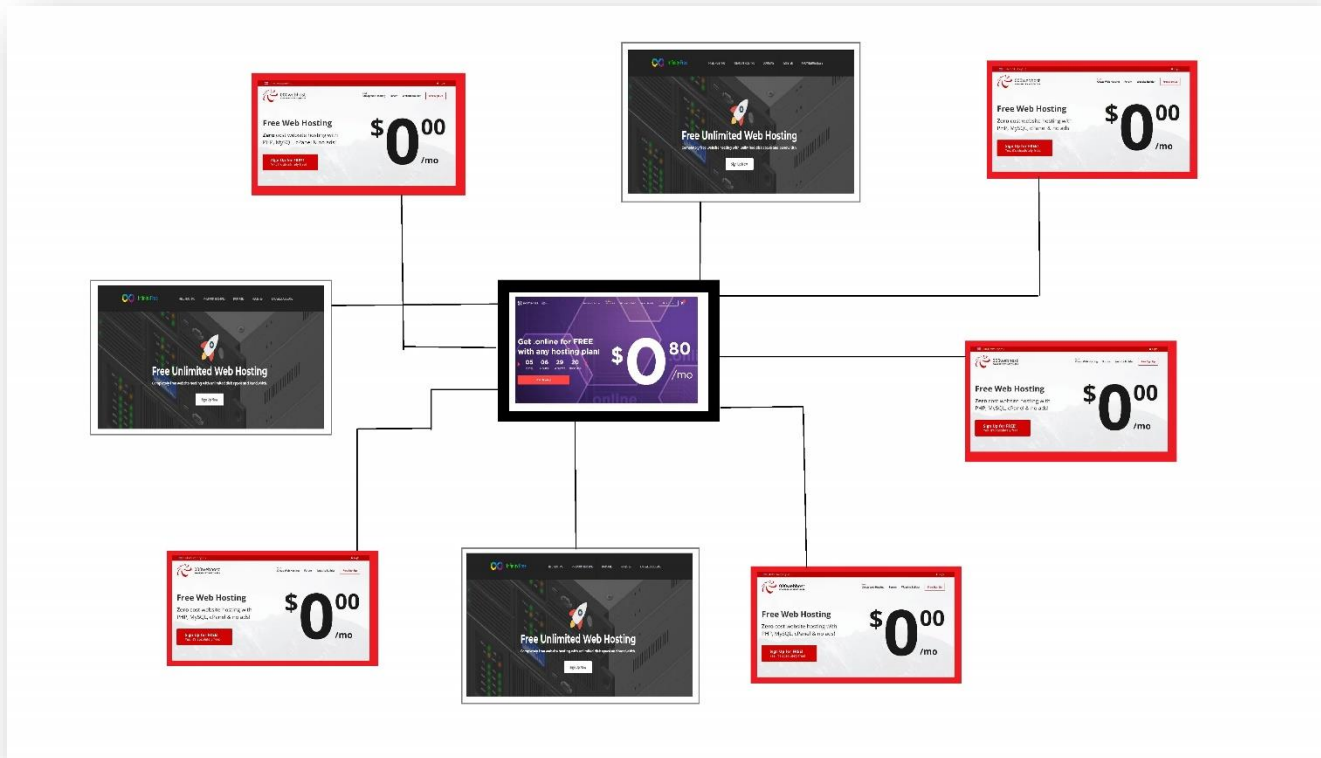


Fig. 3.6.2 Inter-connection between hosting's

Above example represent the relationship between different platform hosting and their interconnections. Here the Origin platform is known as **Hostinger.com** which is the main hub for all interconnected platforms. All the data first travel through **Free** servers and then reaches the Main hosting Hub. Rest of all named as **000webhost**, **infinityfree**.

- **Hostinger.com** is PAID server
- **000webhost.com** is FREE server
- **Infinityfree.net** is FREE server

- ER Diagrams

An ER diagram is a diagram that helps to design databases in an efficient way. Attributes in ER diagrams are usually modelled as an oval with the name of the attribute, linked to the entity or relationship that contains the attribute.

Within the relational model the final step can generally be broken down into two further steps, that of determining the grouping of information within the system, generally determining what are the basic objects about which information is being stored, and then determining the relationships between these groups of information, or objects.

An Entity Relationship Diagram (ERD) is a visual representation of different data using conventions that describe how these data are related to each other. ER diagrams are most often associated with complex databases that are used in software engineering and IT networks. In particular, ER diagrams are frequently used during the design stage of a development process in order to identify different system elements and their relationships with each other.

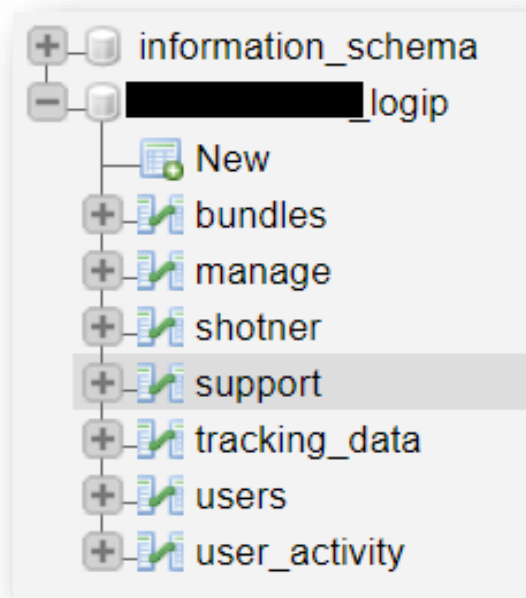


Fig. 3.6.3 DB structure

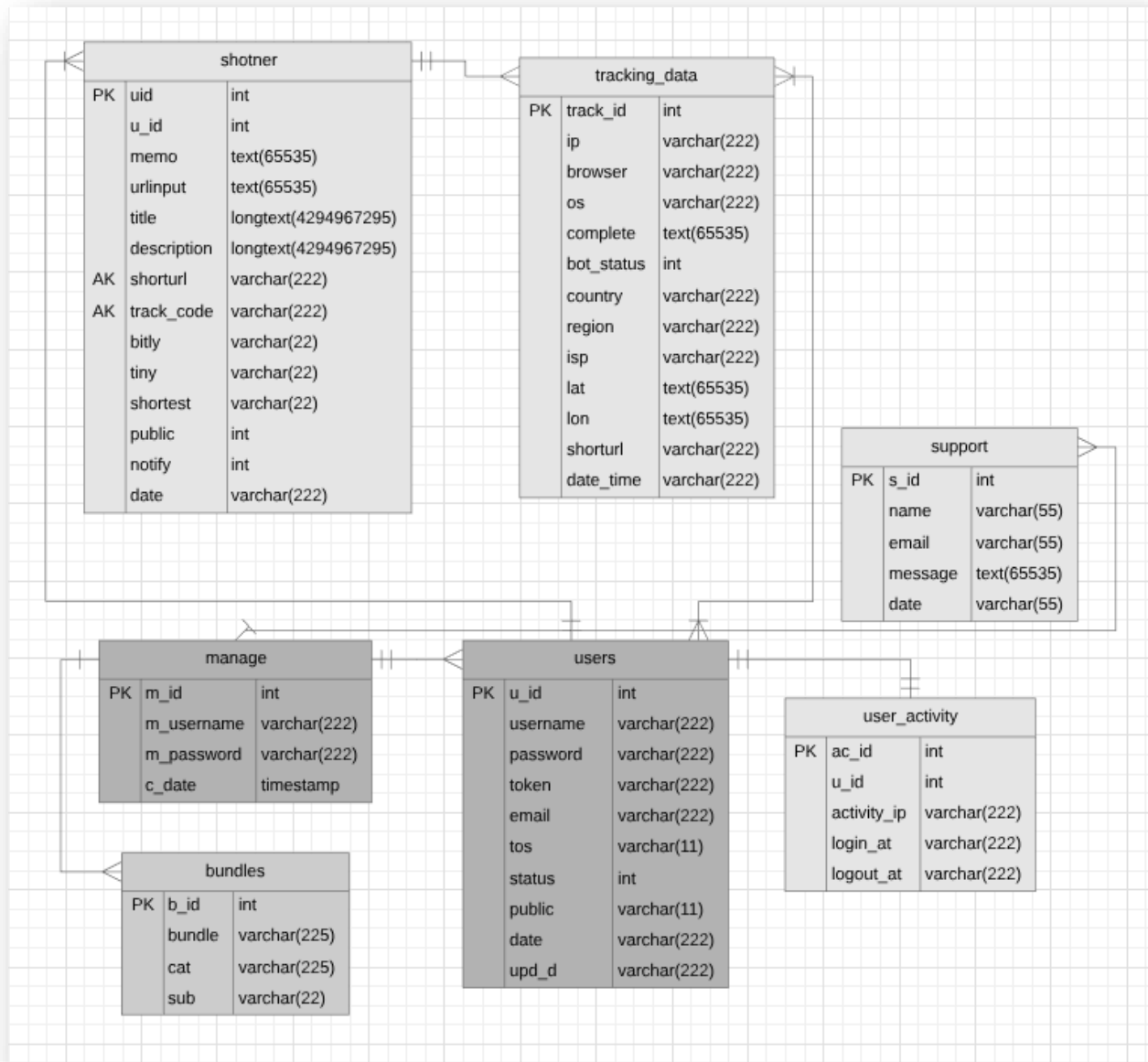


Fig. 3.6.4 ER diagram of Tables Schema

To understand the ER Diagram in brief Lets take an example. But first look at the cardinality:

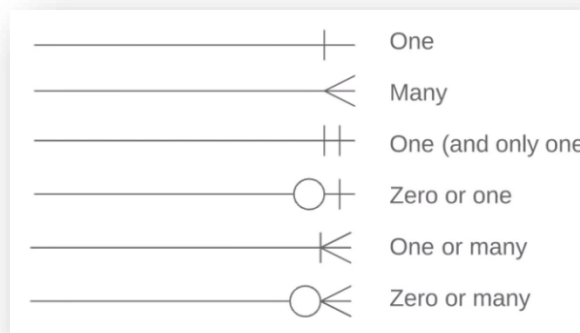


Fig. 3.6.5 ER diagram cardinality

- **Entity Relationship between (Tables) Shotner and tracking_data**

Let's say visitor visit the <https://ahref.tech> and try to create short URL, Now short code is successfully generated and visitor spread the link to all their friends and now all whom ever click on that link, their device details will be captured and uploaded to the server. So, we can say that:

One Shotner have many entity relationships with tracking_data because on one shorten link many details will be captured. As reverse, only one unique shotner will have my different collection of incoming data.

| # | Name | Type |
|----|---------------|--------------|
| 1 | uid 🗝️ | int(222) |
| 2 | u_id | int(11) |
| 3 | memo | text |
| 4 | urlinput | text |
| 5 | title | longtext |
| 6 | description | longtext |
| 7 | shorturl 🗝️ | varchar(222) |
| 8 | track_code 🗝️ | varchar(222) |
| 9 | bitly | varchar(22) |
| 10 | tiny | varchar(22) |
| 11 | shortest | varchar(22) |
| 12 | public | int(11) |
| 13 | notify | int(11) |
| 14 | date | varchar(222) |

| # | Name | Type |
|----|-------------|--------------|
| 1 | track_id 🗝️ | int(222) |
| 2 | ip | varchar(222) |
| 3 | browser | varchar(222) |
| 4 | os | varchar(222) |
| 5 | complete | text |
| 6 | bot_status | int(11) |
| 7 | country | varchar(222) |
| 8 | region | varchar(222) |
| 9 | isp | varchar(222) |
| 10 | lat | text |
| 11 | lon | text |
| 12 | shorturl | varchar(222) |
| 13 | date_time | varchar(222) |

Fig. 3.6.6 Schema of (Tables) Shotner and tracking_data

- **Entity Relationship between (Tables) Shotner and users**

One Registered user Can easily create **one or more than one** Shotner. Reverse, **one or many** shotners can easily create by **one Registered** user.



| # | Name | Type |
|----|-----------------|--------------|
| 1 | u_id 🔑 | int(222) |
| 2 | username | varchar(222) |
| 3 | password | varchar(222) |
| 4 | token | varchar(222) |
| 5 | email | varchar(222) |
| 6 | tos | varchar(11) |
| 7 | status | int(11) |
| 8 | public | varchar(11) |
| 9 | date | varchar(222) |
| 10 | upd_d | varchar(222) |

Fig. 3.6.6 Schema of (Table) Users

- **Entity Relationship between (Tables) tracking_data and users**

One or many users can click on link to generate tracking data, in reverse one or many different tracking data can be generated by one or many users.

- **Entity Relationship between (Tables) manage and users**

One and only one manage(admin) can manage many users, in reverse many users can be handle by only one Admin.


| # | Name | Type |
|---|---|--------------|
| 1 | m_id  | int(11) |
| 2 | m_username | varchar(222) |
| 3 | m_password | varchar(222) |
| 4 | c_date | timestamp |

Fig. 3.6.7 Schema of (Table) manage

- **Entity Relationship between (Tables) manage and bundles**

One admin can add many bundles(domains), in reverse many bundles can be added by one Admin.


| # | Name | Type |
|---|--|--------------|
| 1 | b_id  | int(11) |
| 2 | bundle | varchar(225) |
| 3 | cat | varchar(225) |
| 4 | sub | varchar(22) |

Fig. 3.6.7 Schema of (Table) Bundles

- **Entity Relationship between (Tables) manage and support**

Many users can contact with one admin. In reverse one admin can contact many users


| # | Name | Type |
|---|--|-------------|
| 1 | s_id  | int(11) |
| 2 | name | varchar(55) |
| 3 | email | varchar(55) |
| 4 | message | text |
| 5 | date | varchar(55) |

Fig. 3.6.7 Schema of (Table) support

- **Entity Relationship between (Tables) users and user_activity**

One and only one user has unique login and logout user_activity, in reverse only and only one unique user_activity assign to one and only one user.


| # | Name | Type |
|---|---|--------------|
| 1 | ac_id  | int(11) |
| 2 | u_id | int(11) |
| 3 | activity_ip | varchar(222) |
| 4 | login_at | varchar(222) |
| 5 | logout_at | varchar(222) |

Fig. 3.6.7 Schema of (Table) user_activity

- UML Diagrams
- Use Case Diagram

The system design can be clearly explained from the following diagrams: Use Case Diagram:

A Use Case diagram at its simplest is a representation of a user's interaction with the system and depicting the specifications of a use case. A use case diagram can portray the different types of users of a system and the various ways that they interact with the system. This type of diagram is typically used in conjunction with the textual use case and will often be accompanied by other types of diagrams as well.

There are two types of user in this application, user and Guest. Following depicts their use case diagram:

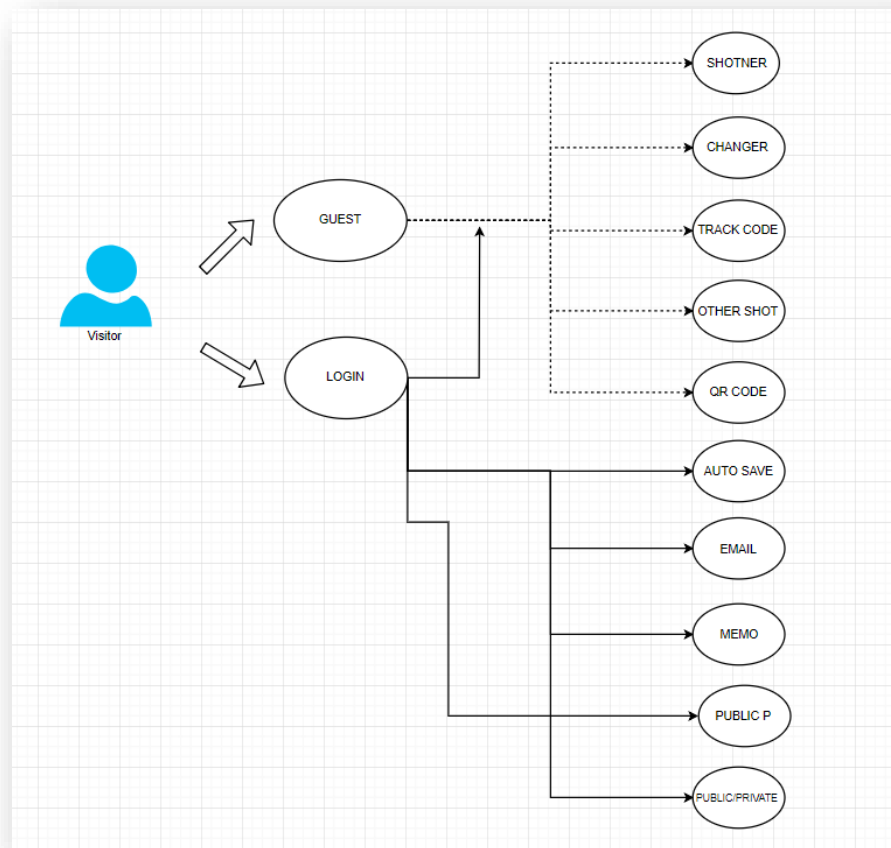


Fig. 3.6.8 UCD for visitor