St. Francis Institute of Technology, Mumbai-400 103

Department Of Information Technology

A.Y. 2024-2025

Class: TE-ITA, Semester: VI

Subject: **Web Lab**

Experiment – 1: To study web analytics using open source tools like Matomo, Open Web Analytics, AWStats, Countly, Plausible.

1. **Aim:** To study open source Web Analytics tools
2. **Objectives:** Aim of this experiment is that, the students will be able
   - To Understand open source tools for web analytics in web apps development and deployment
3. **Outcomes:** After study of this experiment, the students will be able
   - To understand the importance of web analytics.
   - Learn about various open source tools for web analytics
   - To have an introduction to web semantics
4. **Prerequisite:** Knowledge of digital web evolution,
5. **Requirements:** Personal Computer, Windows operating system, browser, Internet Connection, google doc.
6. **Pre-Experiment Exercise:**
   Brief Theory: Refer shared material
7. **Laboratory Exercise**
   A. Procedure:
   a. Answer the following:
   - Define web and compare with term Internet.
   - What is a Web based application?
   - Compare Google analytics with Countly, Plausible, Matomo.

sr no	parameter	Google Analytics	Countly	Plausible	Matomo
	Session				
	Total Visitors				
	Returning Users/Visitors				
	Average Request Received				

	Time Spent				

b. Attach screenshots:

- Web Evolution
- Google Analytics home page
- Matomo user interface

8. Post-Experiments Exercise

A. Extended Theory:

Nil

B. Questions:

- Write in tabular form main characteristics of each Web generations (web theme, technologies, level of functionalities, key differences)
- Add new feature to Matoma tool take SS and attach
- Give important KPI of web analytics.

C. Conclusion:

- Write what was performed in the experiment.
- Write the significance of the topic studied in the experiment.

D. References:

1. https://aircconline.com/ijaia/V8N6/8617ijaia02.pdf
2. https://support.count.ly/hc/en-us
3. https://analytics.google.com/analytics/web/provision/#/provision

B. Answer the following:

1.Define web and Compare the term Internet.

Answer: The Web (World Wide Web or WWW) and the Internet are terms often used interchangeably, but they refer to different concepts:

1. **Internet**: This is a vast global network of interconnected computers and servers that communicate with each other using various protocols. It provides the underlying infrastructure for various services, including email, file transfer, and the World Wide Web itself. The Internet is composed of physical components like cables, routers, and servers that facilitate data exchange between devices.
2. **Web**: The Web is an information system that operates over the Internet, allowing users to access and share content through web pages. It was developed by Tim Berners-Lee in 1989 and utilizes protocols like HTTP (Hypertext Transfer Protocol) to enable the retrieval of documents formatted in HTML (Hypertext Markup Language). The Web consists of a collection of interconnected documents and resources identified by URLs (Uniform Resource Locators).

Aspect	Internet	Web
Definition	A global network of interconnected computers.	A service for sharing information over the Internet.
Components	Physical infrastructure (cables, routers).	Documents and resources (web pages, multimedia).
Functionality	Supports various services (email, FTP).	Primarily for accessing and viewing content.
Protocols	TCP/IP, FTP, SMTP	HTTP, HTTPS.
Creator	No single creator; evolved over time.	Tim Berners-Lee developed it in 1989.

2. What is a Web based application?

Answer: A **web-based application** (or web app) is a software program that runs on a web server and is accessed through a web browser over the Internet. Unlike traditional desktop applications that require installation on a specific device, web apps can be accessed from any device with internet connectivity.

Characteristics of Web Applications

- **Interactivity**: Web apps are designed for user interaction, allowing users to perform tasks such as data entry, online transactions, or real-time communication.
- **Dynamic Content**: They often provide dynamic content that can change based on user input or actions.
- **Accessibility**: Users can access web applications from various devices (desktops, tablets, smartphones) without needing to install software locally.
- **Examples**: Common examples include online banking systems, social media platforms like Facebook or Twitter, e-commerce sites like Amazon, and productivity tools like Google Docs

Comparison with Websites

While both web applications and websites are accessed via browsers and require an internet connection, they serve different purposes:

- **Web Applications**: Focus on functionality and user interaction (e.g., online shopping carts or email services).
- **Websites**: Primarily designed for information dissemination with static content (e.g., blogs or informational pages)

This distinction highlights the evolving nature of online services where interactivity and user engagement are increasingly prioritized in web-based applications.

3. Compare Google analytics with Countly, Plausible, Matomo
Answer:

Parameter	Google Analytics	Countly	Plausible	Matomo
Session	Uses statistical estimates for sessions	Tracks sessions with basic metrics	Provides straightforward session tracking	Accurate session tracking without sampling
Total Visitors	Reports total users and sessions	Basic visitor tracking available	Simple visitor count displayed	Comprehensive visitor metrics available
Returning Users/Visitors	Tracks returning users with user ID	Limited returning user insights	Basic returning visitor metrics	Detailed tracking of returning visitors
Average Request Received	High volume; tracks all requests	Limited request tracking capabilities	Counts pageviews and events as requests	Counts hits as various tracked events
Time Spent	Estimates time on site using session data	Basic time tracking features available	Displays average visit duration clearly	Provides detailed time spent metrics

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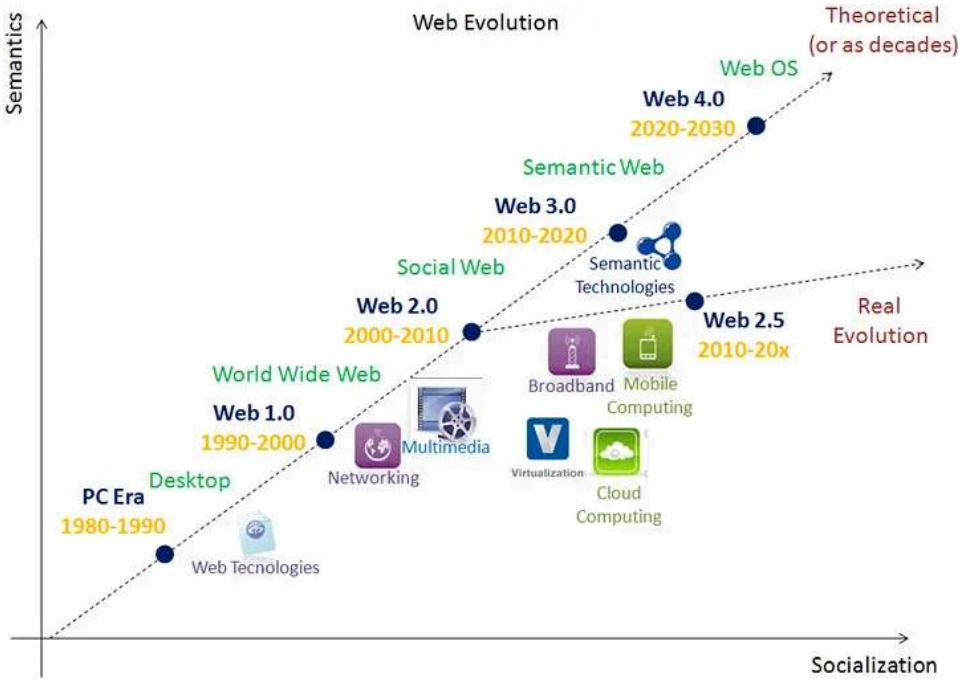
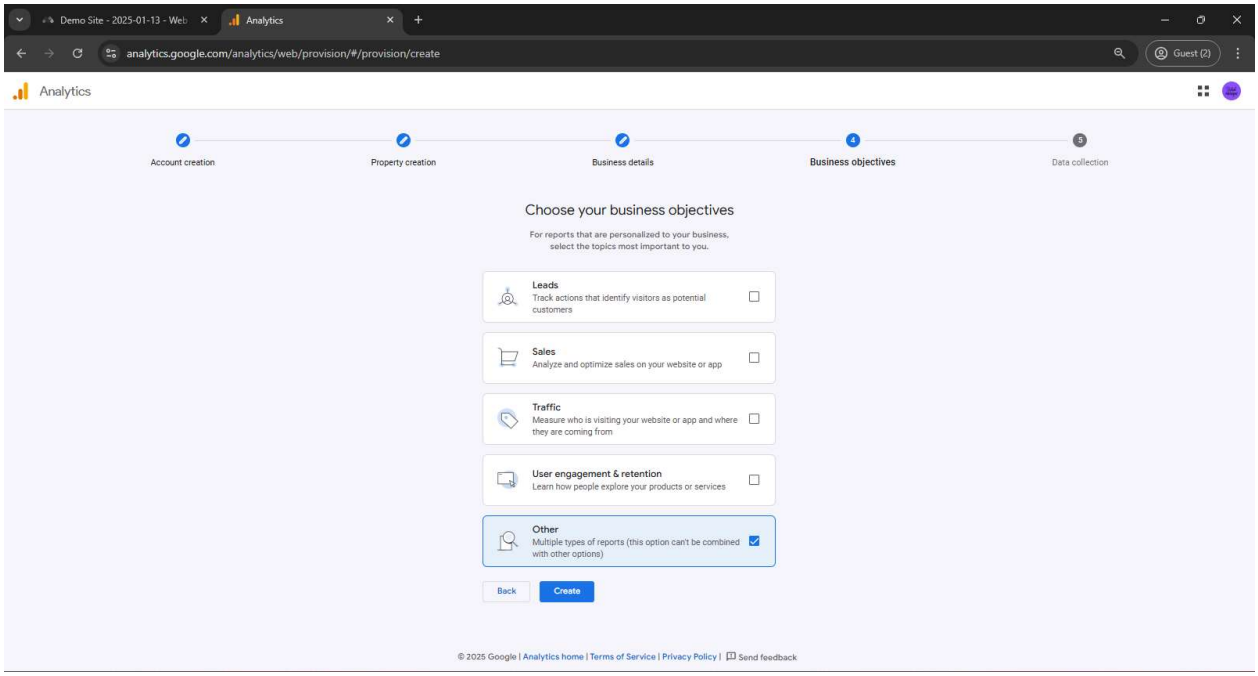
B. Attach Screenshot

1. Web Evolution



2. Google Analytics



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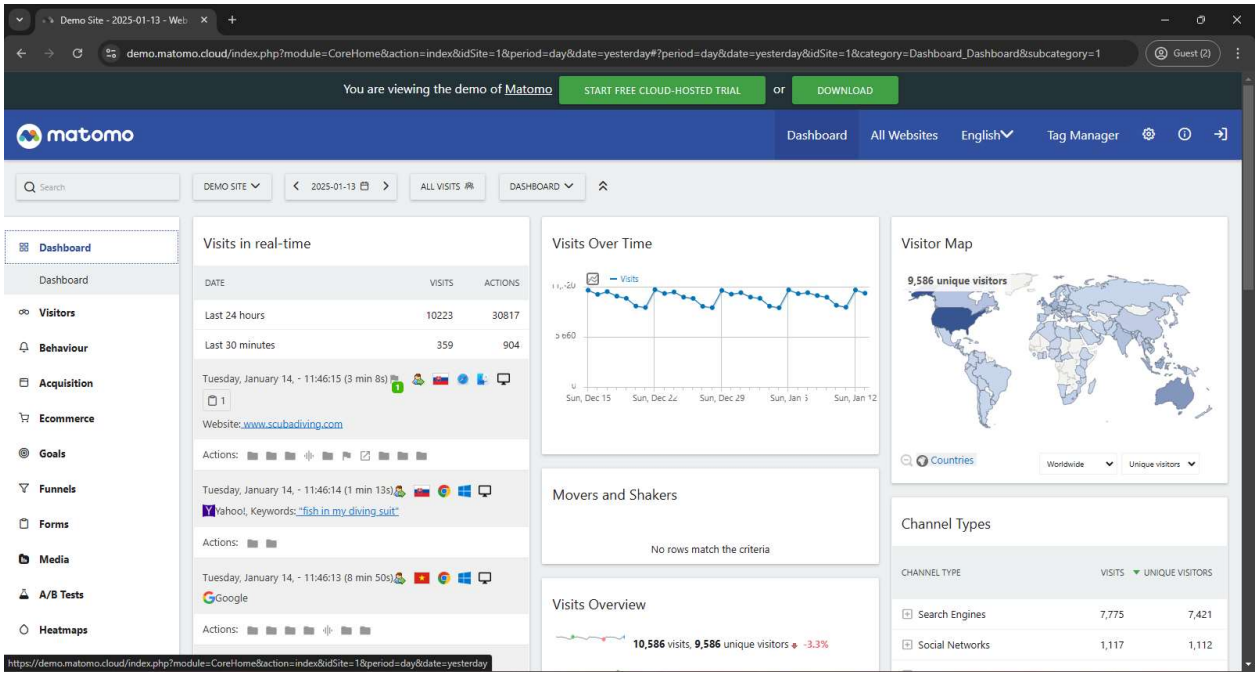
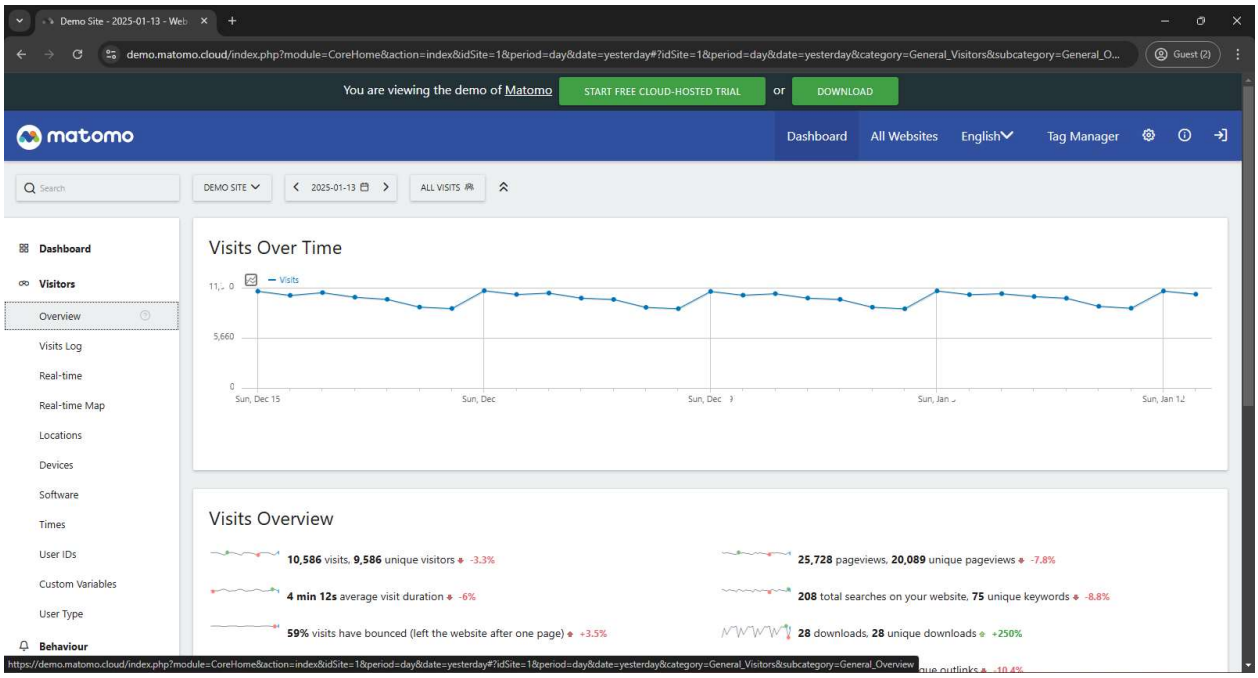
3. Matomo User Interface





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