



Experiment No. 9

Title: Study Experiment on Web Services



Aim: Study Experiment on Web Services**Theory:****Web Services:**

Web services are software mechanisms that communicate using pervasive, standards-based Web technologies including HTTP and XML-based messaging and this structure are based on a collection of standards and protocols that allow us to make handling requests to remote systems by delivering a standard, nonproprietary language and using conventional transport protocols such as HTTP and SMTP. The efficient e-business perception calls for a smooth integration of business processes, applications, and Web services over the Internet. Web service technology enables e-business and e-commerce to become a reality. It has become a competitive tool for companies by reducing cost through fast, efficient, and reliable services to clients, dealers, and partners over the Internet. It permits more efficient business processes via the Web and improves business chances for companies, Web services are planned to be accessed by other applications and differ in complication from primary activities, such as examine a banking account balance online, to complicated processes running CRM (customer relationship management) or enterprise resource planning (ERP) systems because these are based on open standards such as HTTP and XML-based protocols including SOAP and WSDL. Web services are powered by XML and three other core technologies: WSDL, SOAP, and UDDI. In a Web service model, a service supplier proposals Web services which deliver tasks or business operations which can be arranged over the Internet, in the hope that they will be invoked by partners or customers; a Web service requester defines requirements to trace service provider. Publishing, binding, and discovering Web services are three key tasks in the model. Discovery is the process of finding Web services provider locations which satisfy specific requirements. Web services are useless if they cannot be discovered. So, discovery is the most important task in the Web service model. The Web service model in Figure shows the interaction between a service requester, service providers, and a service discovery system.

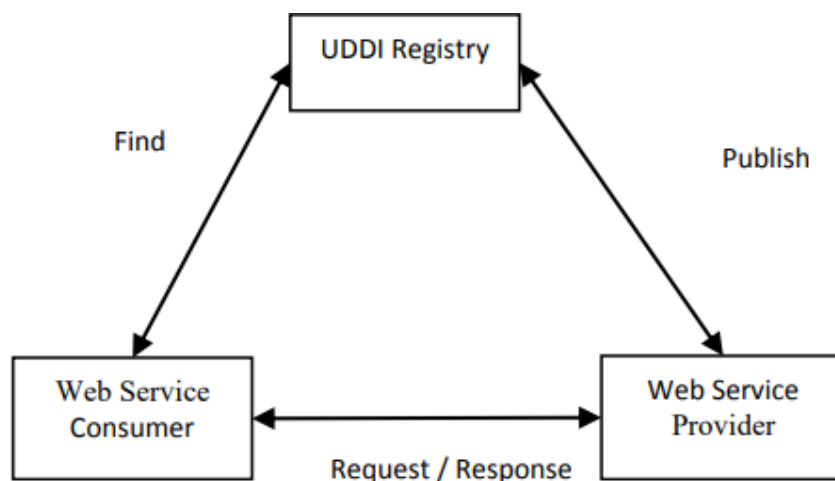


Figure: Web Services Model

1. The service provider's proposal Web services which deliver functions or business operations. They are formed by companies or societies. In order to be invoked, the Web services must be defined. This will facilitate discovery and arrangement. WSDL or service profile of semantic Web service is used to carry out this task.
2. The Web service requester defines requirements in order to locate service providers. Service requesters usually contain a description of the Web service, though it is not a Web service which can run on the Internet. The requirements are typically defined by WSDL, service template or service profile.
3. The Web service discovery or service registry is a broker that provides registry and examine tasks. The service providers advertise their service info in the discovery system. This info will be kept in the registry and will be searched once there is a demand from service requester. UDDI is used as a registry typical for Web service.

The above three mechanisms interact with each other via publishing, discovery, and binding operations. These operations are elaborated upon as follows:

1. **Publish:** the Web service providers publish their service information through the discovery system for requesters to discover. Through the publishing operation, the Web service provider stores the service description in the discovery system.
2. **Discovery:** the Web service requesters repossess service providers from the service archive. Based on service explanations, which describes the requests of the Web service clients, the discovery system will output a list of Web service suppliers which satisfy the requirements.
3. **Bind:** After discovering, the discovery system provides some Web service providers. The Web service requester invokes these Web service providers. The binding occurs at runtime. The Web service requesters and Web service providers will communicate via SOAP protocol which is an XML based protocol for Web service exchange information.

Activity:

A comprehensive case study of Google's web services would delve deeper into each category of services offered, exploring their features, functionalities, and impact on users and businesses. For instance, within the search services category, Google's search engine is not only the most widely used search tool globally but also powers other services like Google Images, Google Maps, Google News, and Google Scholar. Each of these services has its unique set of features and algorithms tailored to meet specific user needs, whether it's finding information, navigating routes, or accessing scholarly articles.

Similarly, in the advertising services segment, Google Ads is a dominant force in the digital advertising space, offering targeted advertising solutions across a vast network of websites and platforms. AdSense enables website owners to monetize their content through contextual advertising, while AdMob provides mobile advertising solutions for app developers. Understanding the intricacies of these advertising platforms, including ad targeting, bidding strategies, and performance tracking, is crucial for businesses looking to leverage Google's advertising ecosystem effectively.

Productivity tools like Gmail, Google Drive, and Google Docs have revolutionized the way individuals and organizations collaborate and communicate online. These tools offer seamless integration, real-time collaboration features, and ample storage space, empowering users to work more efficiently and effectively. Furthermore, Google's suite of

productivity tools extends beyond traditional office applications to include project management tools like Google Calendar, task management tools like Google Tasks, and communication tools like Google Meet and Hangouts.

In the realm of cloud computing, Google Cloud Platform (GCP) provides a robust infrastructure for hosting websites, running applications, and storing data in the cloud. With a comprehensive suite of services, including compute, storage, database, machine learning, and analytics, GCP competes with industry giants like Amazon Web Services and Microsoft Azure. Moreover, Google's commitment to sustainability and innovation, evidenced by initiatives like the use of renewable energy and the development of cutting-edge technologies, sets it apart in the cloud computing market.

Examining Google's developer tools and APIs sheds light on the tools and resources available for developers to build and integrate with Google's ecosystem. Google APIs enable developers to access data and services from various Google products, while developer tools like the Google Developer Console provide a centralized platform for managing projects, monitoring performance, and accessing documentation and support resources. Additionally, the Google Play Developer Console empowers app developers to publish and manage their apps on the Google Play Store, reaching millions of Android users worldwide.

In conclusion, a comprehensive case study of Google's web services requires a thorough exploration of each service category, their functionalities, and their impact on users and businesses. By understanding the nuances of Google's diverse offerings, businesses can harness the full potential of Google's ecosystem to drive innovation, efficiency, and growth.

Conclusion:

Summary of key findings and insights from the case study.
Assessment of Google's position in the web services market.
Implications for the future of Google and the broader tech industry.

Conclusion:

Successfully learnt the applications of web services.

References:

1. <https://www.geeksforgeeks.org/what-are-web-services/>
2. https://www.tutorialspoint.com/webservices/what_are_web_services.htm

