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Date: 28-30th December 2016, http://ces.iisc.ernet.in/energy

Venue: V.S. Acharya Auditorium, **Alva's Education Foundation**, Sundari Ananda Alva Campus, Vidyagiri, Moodbidri, D.K. Dist., Karnataka, India – 574227

Information Dissemination through Web Portals (based on SOA)

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Web page: http://wgbis.ces.iisc.ernet.in/energy/, http://wgbis.ces.iisc.ernet.in/grass/, http://wgbis.ces.iisc.ernet.in/foss/

Abstract– **Digital Information dissemination is the current trend. A well-defined mechanism is necessary to organize, store, access information. Web portals act as a source to disseminate information on specific set of domains. Web Portals offer the users a broad array of information that are arranged in a convenient form. The current communication highlights role of web portals that helps to enhance access to array of information. Web portal has been developed using Service oriented architecture (SOA). The portal is designed on LINUX platform using various tools such as HTML to describe the structure of the portal, CSS3 for styles and JavaScript as a scripting language. Energy and Wetland Research Group (http://ces.iisc.ernet.in/energy), CES-IISc web portal is an interactive user friendly web portal which is continuously fed with numerous information such as articles –journals/conference papers, newsletters, technical reports, current research openings, announcements, workshops, course details etc. that could be easily accessed by any user across the globe. Information dissemination using web portals would help in contributing to the vision of Digital India.**

Keywords– *Web Portal, SOA, Information Dissemination, Digital India.*

INTRODUCTION

A Web Portal also known as a links page, presents information from diverse sources in a unified way (According to Maedche A et.al (2002)). A portal makes network resources (application, database, etc.) available to end users and the user can access the portal via Web browser and other devices. Web portal is a customized website that immerses information from a wide array of sources in a consistent and uniformed manner. Where a website is accessible over the internet or a private network such as Local Area Network (LAN) through an address known as Uniform Resource Locator (URL). For Web Portal personal login is required whereas for Web site no login required.

A service-oriented architecture (SOA) is a style of software design where services are provided to the other components by application components, through a communication protocol over a network. The SOA architecture design provides a framework for integrating separate applications so that from the network to access its features, which are offered as services. The primary benefit of SOA is that they make services *interoperable*, which means that services can communicate with one another, even if each implementation is written in a different computer language or is accessed by way of a different *transport protocol* (software that oversees the runtime transmission of data).

Improvement in Website Design: Web portal development mainly focuses on improving the look and feel of a website. It uses several communication strategies for executing and transferring data. The development process involves various components or sections such as layout, shell, page, book, menu and placeholder. These components facilitate the sharing of quality information on a website.

THE DIFFERENT TYPES OF PORTALS

There are several kinds of portals:

Vertical Portals: Provide access to a variety of information and services about a particular area of interest. For example, http://wgbis.ces.iisc.ernet.in/energy/paper/researchpaper.html is a vertical portal.

Horizontal Portals: Often referred to as "megaportals," target the entire Internet community. Sites such as http://wgbis.ces.iisc.ernet.in/energy/index.html. This sites provide the ability for a user to personalize the page by offering various information (i.e., access to other information such as course updates, reports etc.). Providers of mega portals hope individual users go to their sites first to access the rest of the Internet. These are portals developed and maintained for use by members of the intranet or the enterprise network.

Knowledge Portals: Knowledge portals increase the effectiveness of knowledge workers by providing easy access to information that is necessary or helpful to them in one or more specific roles.

ARCHITECHTURE & METHOD: The below listed are the basic components in Service Oriented Architecture (SOA).

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- Service Provider
- Service Consumer
- Service Registry

Each component can also act as one of the two other components. For instance, if a service provider needs additional information that it can only acquire from another service, it acts as a service consumer. Figure 1 shows the operations each component can perform.
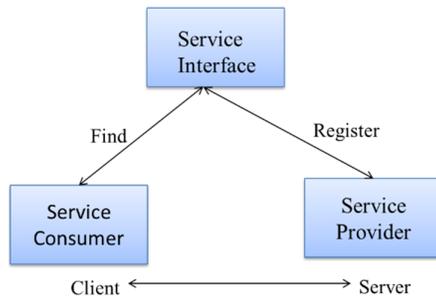
Figure 1: Service Oriented Architecture (SOA)

The service provider creates a service and in some cases publishes its interface and access information to a service registry. The service provider can decide whether the service needs to be secured or can be used by anyone. The service provider can decide whether the services needs to be listed or not and what should be the agreement that should be set between the consumer for accessing the services. The service registry is responsible for making the service interface

and implementation access information available to service consumers. There are Pubic service registries that can be accessed over the internet and there are private service registries which is accessible to only restricted or role based consumers. The service consumer locates entries in the service registry and then binds to the service provider in order to invoke the defined service.

Benefits of SOA: Various components are built separately, to enable reuse later apart from ability to optimize performance, functionality, and cost. Improved asset reuse, and most importantly improved return on investment. [Feuerlicht and Voříšek, 2006].

HTML: Marks the content up into different structural types, like paragraphs, blocks lists, images, tables, forms, comments etc. Using HTML, you can add headings, format paragraphs, control line breaks, make lists, emphasize text, create special characters, insert images, create links, build tables, control some styling and much more.

CSS: Tells the browser how each type of element should be displayed, which may vary for different media (like screen, print or handheld device)

JAVASCRIPT: Tells the browser how to change the web page in response to events that happen (like clicking on something, or changing the value in a form input)

RESULTS AND DISCUSSIONS
As Documented in Table 1, user can able to see the Web sites of Energy and Wetlands Research group.

Information dissemination portals	URL
Energy and Wetlands Research Group	http://wgbis.ces.iisc.ernet.in/energy/
Sahyadri: Western Ghats Biodiversity Information System	http://wgbis.ces.iisc.ernet.in/biodiversity/
GRASS – MIRROR site	http://wgbis.ces.iisc.ernet.in/grass/
Wetlands site	http://wgbis.ces.iisc.ernet.in/energy/water/paper/researchpaper2.html

Table 1: Web sites names and URL of Energy and wetlands Research group

Figure 3 shows main web page of Energy and wetlands Research group. Through an address known as Uniform Resource Locator (URL) http://wgbis.ces.iisc.ernet.in/energy/ people can search useful and helpful information such as Research papers, Technical reports, news and courses etc. and

also there are two different sections in this web page one is Energy section and the other one is Wetlands section (fig 4). The user can select various section by clicking a particular area of interest on the main web page we can see a Web page along with the various kinds of Research papers and Technical Reports.

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Figure 3: Energy and Wetland Research Group

(a)   (b)

Figure 4a & b: Energy and Wetlands web page

Figure 5: My Village Biodiversity: Documentation of Western Ghats Biodiversity through networks of Students and Teachers

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CONCLUSION

In this paper we have discussed about SOA and the Web portals. Web Portals provides various information about a particular area of interest. SOA can perform the most desired activities of the student in an attractive and user-friendly environment. SOA gives you the flexibility to write various components of your architecture in whatever language and platform you choose to. It means, could write the client facing side in a more dynamic and productive language like Python/Ruby/JavaScript and write in a languages like Java or C.

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Web-Links

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3. http://wgbis.ces.iisc.ernet.in/grass/
4. http://ces.iisc.ernet.in/energy/wetlands/home.html
5. http://ces.iisc.ac.in/new/

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