Web Engineering Resources Portal (WEP):

WEP

- **Web Engineering Resources Portal (WEP)** as a basic reference model and guide for Web Engineers. WEP provides a general classification of Web Engineering resources under technologies, research results, and tools.
- It consists of a reference model and a resources portal. The objective of the WEP reference model is to provide a common basic terminology, a technical-oriented classification of Web applications (WebApps), a specification of WebApps Logical and Physical Architectures, a classification of skills needed in Web projects and a generic and adaptable Web lifecycle process model.

Introduction

- The application of systematic, disciplined and quantifiable approaches to development, operation, and maintenance of Web-based Information Systems (WIS).
- It is both a pro-active approach and a growing collection of theoretical and empirical research in Web application development."
- "matching the problem domains properly to solution methods and the relevant mix of technologies.
- ***WIS*** *is an information system utilizing Web technologies to provide information (data)* and functionality (services) to end-users through a hypermedia-based presentation/interaction user interface on web-enabled devices.

Web engineering resources

- **WEP-Terms:** WEP basic terminology and definitions. in order to determine the semantics of the terms used in it.
- **WEP-Arch**: Identification and technical-oriented classification of common WIS components (namely WebApps). Specification of the three *WebApps' logical layers: content, logic and interface, and the WebApps' physical architecture.*
- **WEP-Teams**: Specification and classification of skills needed in the WIS project under abstract team classes of stakeholders.
- **WEP-Process:** A WIS lifecycle process model with three phases: planning, deployment and evolution.
- **WER-Portal:** Several Web Engineering Resources taxonomies through which Web engineers will be able to easily and meaningfully locate research resources, web technologies, and tools and understand their role during WIS development and WIS operation/maintenance.

WEP-Terms:

- ***Data*** *are distinct pieces of information in digital form, formatted in a special way that can* be read, manipulated, or transmitted on some digital channel by software.
- **Systems** software includes the operating system and all the utilities that enable the computer to function and support the production and execution of programs.
- ***Application*** *is a composition of one or more programs that do real work for humans.*

Web Architecture

- World Wide Web, known as “WWW”, “the Web” or “W3”) as defined by W3C, is "the universe of network-accessible information, available through Web-enabled devices, like computer, phone, television, or networked.”

- A Web agent is software acting on this information on behalf of a person, entity, or process. Agents include servers, proxies, browsers, multimedia players, and other user agents.

Web Architecture (Three dimensions of Web architecture)

- Web architecture encompasses both protocols that define the information space, by way of identification and representation, and protocols that define the interaction of agents within the Web.

- **Identification** Each Web resource is identified by a URI.
- A uniform resource identifier (URI) is a string of characters used to identify a name or a resource. Such identification enables interaction with representations of the resource over a network (typically the World Wide Web) using specific protocols. Schemes specifying a concrete syntax and associated protocols define each URI
- A URI should be assigned to each resource that is intended to be identified, shared, or described by reference(linked)

Web Architecture (Three dimensions of Web architecture)

- A URI should be assigned to each resource that is intended to be identified, shared, or described by reference(linked) (e.g., using HTTP GET), modifying the state of the resource.

Three dimensions of Web architecture :

- **Interaction:** Web agents exchange information via messages that are constructed according to a non-exclusive set of messaging protocols (e.g., HTTP, FTP, SMTP, etc.)

- **Representation: Messages** carry representations of a resource. A resource communicates the overall information about its state through these representations, A data format is defined by a format specification.