UNIVERSITÀ DEGLI STUDI DI MILANO

CONCORSO PUBBLICO, PER ESAMI, PER IL RECLUTAMENTO DI N. 1 UNITÀ DI PERSONALE AFFERENTE ALL'AREA DEI FUNZIONARI - SETTORE TECNICO-INFORMATICO, CON RAPPORTO DI LAVORO SUBORDINATO A TEMPO INDETERMINATO PRESSO L'UNIVERSITÀ DEGLI STUDI DI MILANO - DIREZIONE ICT - CODICE 22497

La Commissione giudicatrice della selezione, nominata con Determina Direttoriale n.18085 del 31/10/2024, composta da:

Dott.ssa Marialuisa De Francesco	Presidente
Dott. Pasquale Ficara	Componente
Dott. Roberto Sironi	Componente
Sig.ra Suellen Sfragaro	Segretaria

comunica i quesiti relativi alla prova orale:

Gruppo di quesiti n. 1

1. Si descriva la fase di *Load* in un processo ETL.
2. Si illustri la differenza tra web service SOAP e REST.
3. Si legga e si traduca il seguente brano:

   The term "Web service" describes a standardized way of integrating Web-based applications using the XML, SOAP, WSDL and UDDI open standards over an Internet Protocol backbone. XML is the data format used to contain the data and provide metadata around it, SOAP is used to transfer the data, WSDL is used for describing the services available and UDDI lists what services are available.
   A Web service is a method of communication between two electronic devices over a network. It is a software function provided at a network address over the Web with the service always-on as in the concept of utility computing.
   Many organizations use multiple software systems for management. Different software systems often need to exchange data with each other, and a Web service is a method of communication that allows two software systems to exchange this data over the Internet. The software system that requests data is called a service requester, whereas the software system that would process the request and provide the data is called a service provider.
   Different software may use different programming languages, and hence there is a need for a method of data exchange that doesn't depend upon a particular programming language. Most types of software can, however, interpret XML tags. Thus, Web services can use XML files for data exchange.
   (Fonte: https://en.wikipedia.org/wiki/Web_service*)*

Gruppo di quesiti n. 2

1. Si descriva la fase di *Transform* in un processo ETL.
2. Web-services, come funziona e vantaggi applicativi.
3. Si legga e si traduca il seguente brano:

   SOAP is a messaging protocol specification for exchanging structured information in the implementation of web services in computer networks. It uses XML Information Set for its message format, and relies on application layer protocols, most often Hypertext Transfer

Protocol (HTTP), although some legacy systems communicate over Simple Mail Transfer Protocol (SMTP), for message negotiation and transmission.

SOAP provides the Messaging Protocol layer of a web services protocol stack for web services. It is an XML-based protocol consisting of three parts:

- an envelope, which defines the message structure and how to process it

- a set of encoding rules for expressing instances of application-defined datatypes

- a convention for representing procedure calls and responses

After SOAP was first introduced, it became the underlying layer of a more complex set of web services, based on WSDL, XSD and UDDI. These different services, especially UDDI, have proved to be of far less interest, but an appreciation of them gives a complete understanding of the expected role of SOAP compared to how web services have actually evolved.

XML Information Set was chosen as the standard message format because of its widespread use by major corporations and opensource development efforts. Typically, XML Information Set is serialized as XML. A wide variety of freely available tools significantly eases the transition to a SOAP-based implementation.

(Fonte: https://en.wikipedia.org/wiki/SOAP)

Gruppo di quesiti n. 3

1. Si descriva la fase di *Extract* in un processo ETL.

2. In logica di API REST, si illustrino le differenze tra API di tipo GET/POST/PUT/DELETE (body, auth)

3. Si legga e si traduca il seguente brano:

   The Web Services Description Language is an XML-based interface description language that is used for describing the functionality offered by a web service.

   The acronym is also used for any specific WSDL description of a web service (also referred to as a WSDL file), which provides a machine-readable description of how the service can be called, what parameters it expects, and what data structures it returns. The WSDL describes services as collections of network endpoints, or ports. The WSDL specification provides an XML format for documents for this purpose.

   The abstract definitions of ports and messages are separated from their concrete use or instance, allowing the reuse of these definitions.

   A port is defined by associating a network address with a reusable binding, and a collection of ports defines a service. Messages are abstract descriptions of the data being exchanged, and port types are abstract collections of supported operations. The concrete protocol and data format specifications for a particular port type constitutes a reusable binding, where the operations and messages are then bound to a concrete network protocol and message format.

   In this way, WSDL describes the public interface to the Web service.

   WSDL is often used in combination with SOAP and an XML Schema to provide Web services over the Internet.

   (Fonte: https://en.wikipedia.org/wiki/Web_Services_Description_Language)

Milano, 13 novembre 2024

La Commissione

Dott.ssa Marialuisa De Francesco - Presidente

Dott. Pasquale Ficara - Componente

Dott. Roberto Sironi - Componente

Sig.ra Suellen Sfragaro - Segretaria