

# Building a research tool: the database of mammary dysplasia and neoplasia of dog and cat

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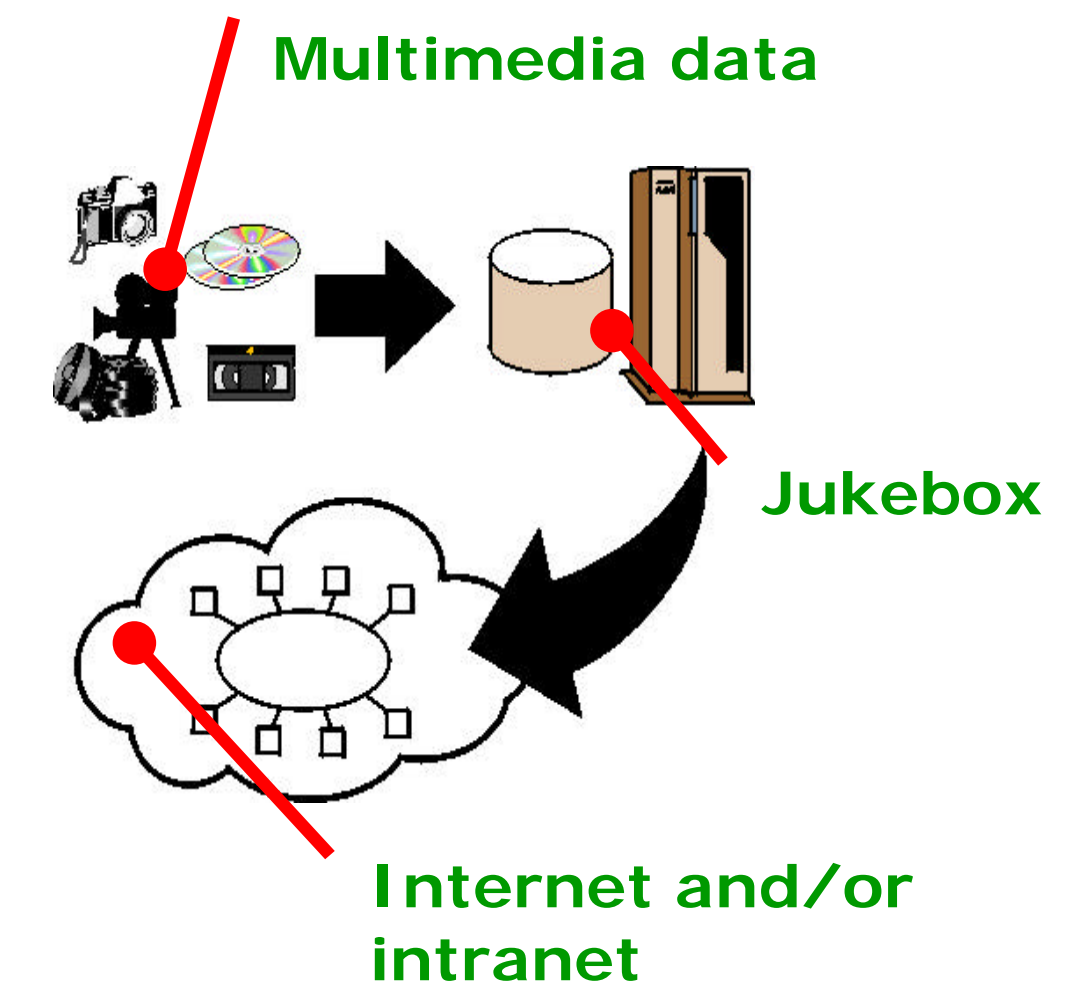


## Purposes

Supplier of new technical aids for implementation of didactical-scientific products is one of the new roles which a specialized library is asked to assume at the present day.

This poster will show a synergy, that has taken place at the Biblioteca Ercolani of the Università di Bologna, between librarian, information technology technician and university professor, which has led to the realization of a database of images and texts on the mammary dysplasias and neoplasias of the dog and cat.

This project is a part of the Multimedia Jukebox, which our library wishes to make in order to offer all its productions to the public via the web. The Multimedia Jukebox is a centralized system for the collection and distribution of multimedia material: short films, sound recordings, animated and photographic representations, and their related texts. The main characteristic is that the multimedia material is described/catalogued and that the different format typologies are made uniform, in a way that permits a better distribution to the authorized users that access these files. In fact, the choice to create a web site permits freedom from the formality of consulting diverse typologies of support material.



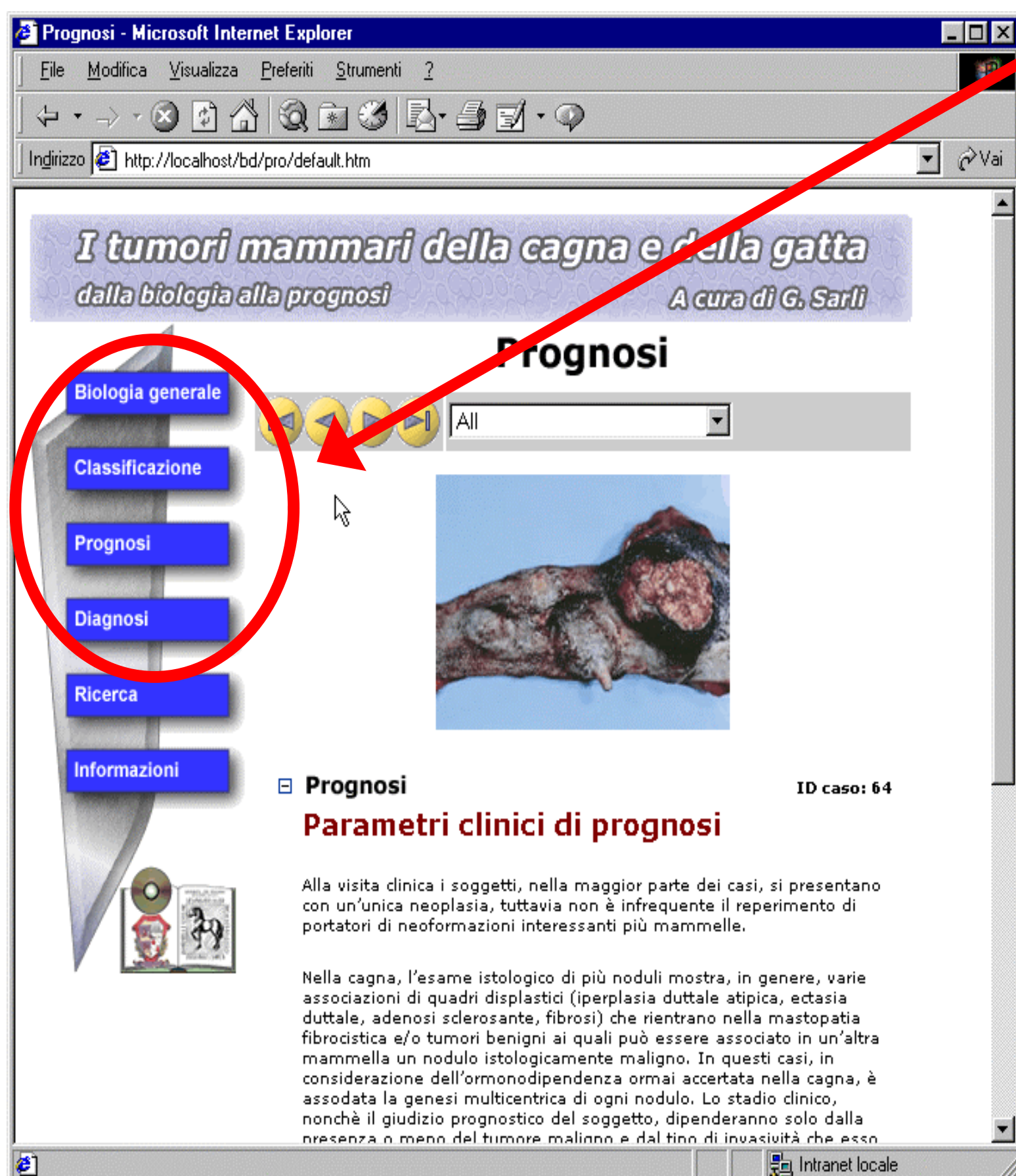
## Database organization at the didactical level

In consideration of the high frequency of mammary tumours in dogs and cats, aim of this database is to use these tumors to give information concerning:

- the general biology of tumours;
- the classification system used to introduce the way to histological denomination of the lesions;
- the prognosis by clinical or histological variables.

The database is organized into 4 levels of access that reflect the different degrees of information acquired during courses of pre and post-degree veterinary schools and information asked more frequently by practitioners.

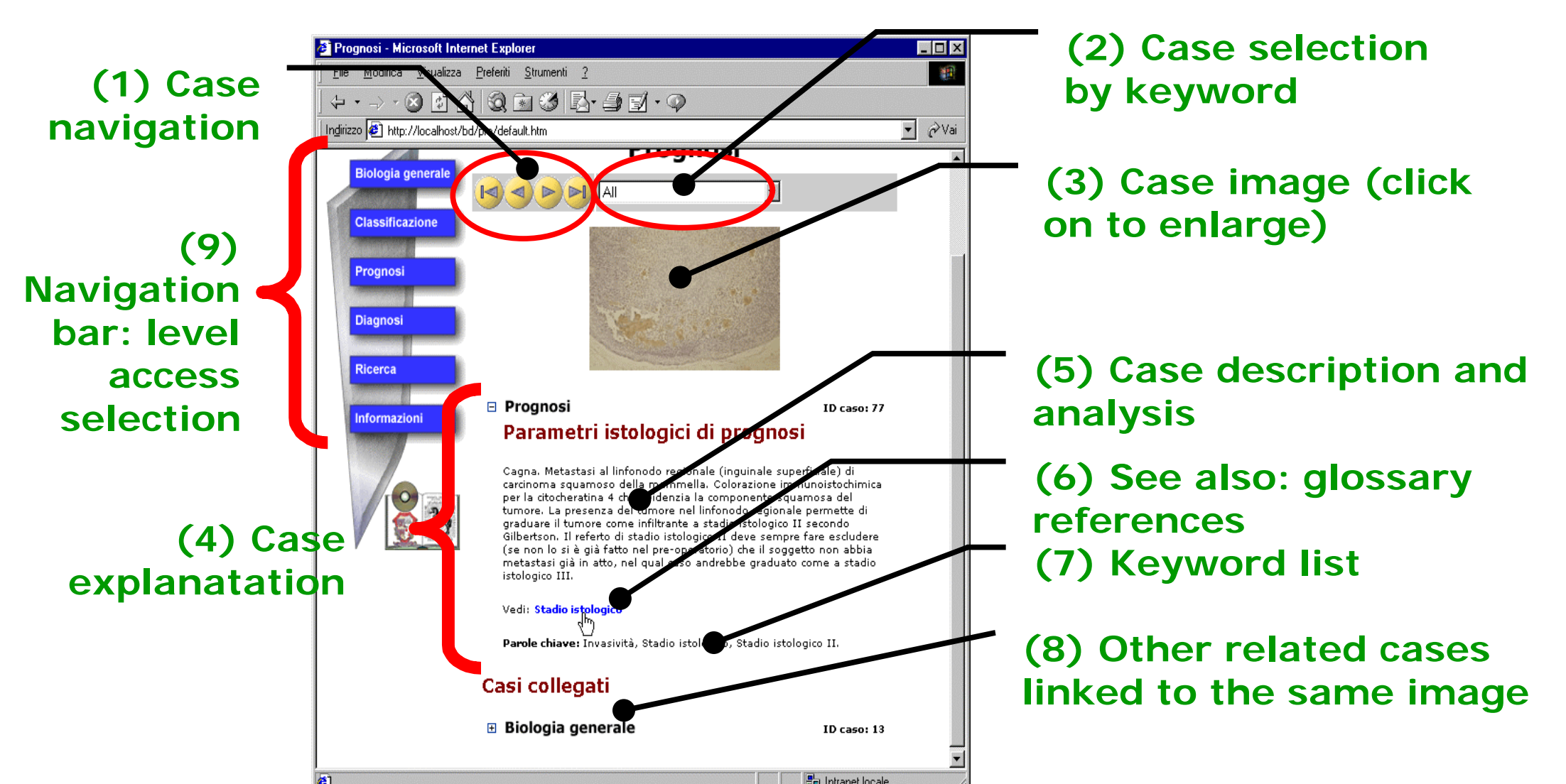
- At the 1<sup>st</sup> level dysplastic and neoplastic mammary lesions are used to introduce elements of General Oncology; this level is for students starting in Pathology.
- The 2<sup>nd</sup> level shows histological classifications relating to mammary dysplasias and neoplasias; it addresses students who face up to the study of Special Pathology.
- The 3<sup>rd</sup> level reviews the available prognostic elements, from both clinical and histologic point of view, as far as mammary dysplasias and neoplasias are concerned and is devoted to students of the fifth year of Veterinary School, mainly to those attending the vocational module "Health and Welfare of Pet animals" or the Course of specialization in Pathology and Clinical Medicine of Pets.
- The 4<sup>th</sup> level offers complete information available in the database from a starting point consisting in the diagnosis given by the pathologist; it especially targets practitioners who are interested in acquiring information on the biological behaviour of the diagnosed lesion.



## Data Presentation: Navigating and Searching

Each case is presented with a title, an associated image (3) that can be enlarged in another window, and text (5) that describes and analyses the image. There can also appear glossary references (6) you can view in another window. For every case, keywords (7) are given to help in identification. If the same image is given at a lower level of analysis, the related case is linked (8).

Navigational interface is essential. On the left side, (9) a navigation bar is presented to select different access levels. At the top (1) a button bar is given to help you move from one case to another. To the side of these, is a combobox (2) that lists all the keywords present in the chosen level so you can select only those cases that contain the chosen keyword.

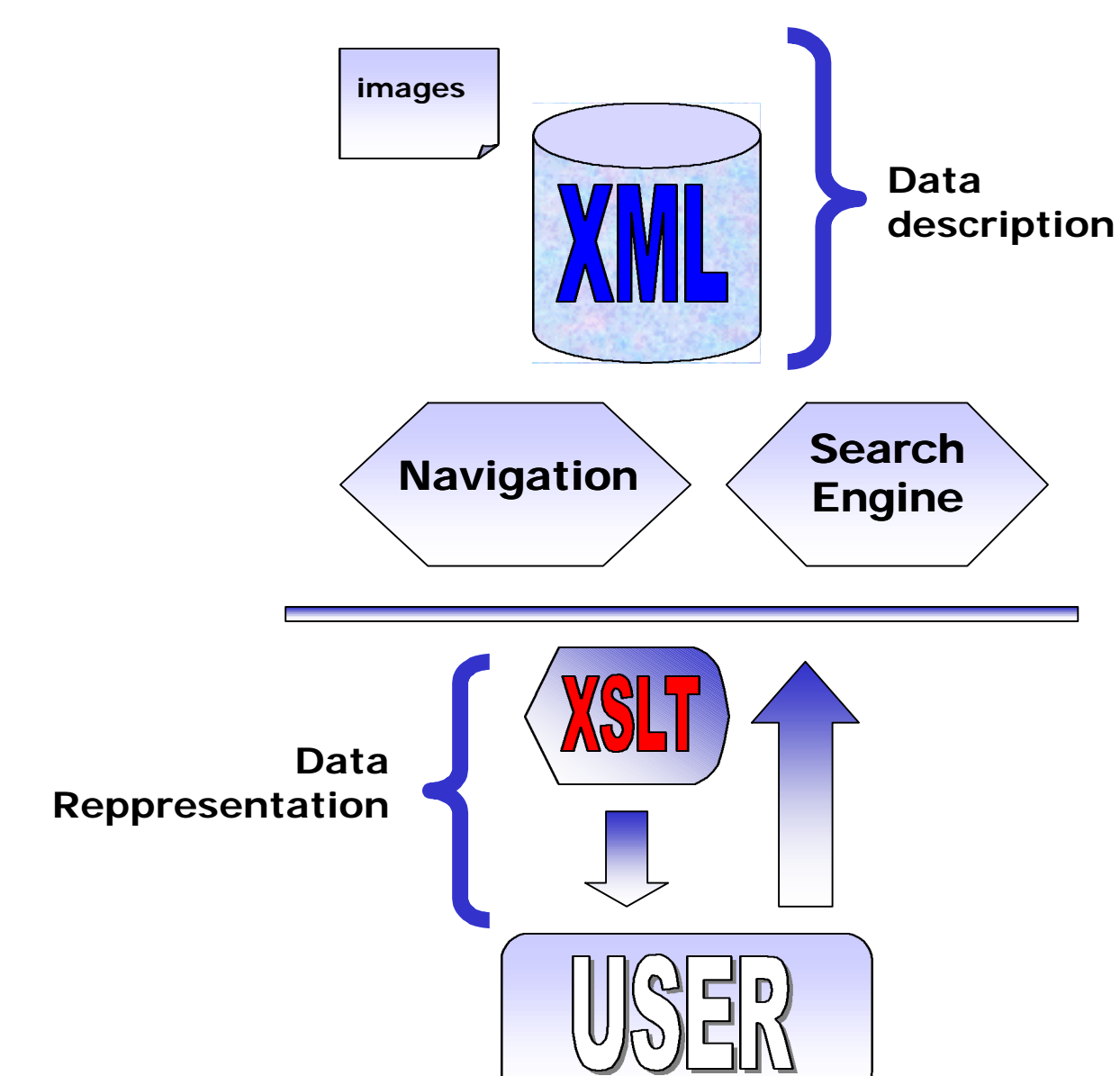


## Software implementation of the database and requirements

The database was created in the XML (eXtensible Markup Language) format making use of XSLT (eXtensible Stylesheet Language Transformation) for the representation of data. The choice of XML is motivated by the fact that this language guarantees an elevated flexibility and potential, as well as being highly portable and easy to maintain. For future extensions, deep modifications to the application won't be necessary.

The application is composed of HTML pages, JavaScript executed at the client and XSLT filters acting all together as container. In this way all the logic and load of elaboration are placed on the browser allowing that the database can be installed on a web server or a CD.

Requirements for correct execution are MS Internet Explorer v.5.0 or higher and the parser MSXML v.3.0, given freely from Microsoft's web site. Application was created with: Macromedia Dreamweaver v.4.0 and Macromedia Fireworks v.4.0 for HTML pages and Javascript, XML Spy v.3.5 to develop XML database and XSL transformation.



## Future Extensions

As it is so far realised, the database will be translated into English, which is already happening as a method of standardisation. It would be promising to study the possibility of obtaining from the query a research file that automatically examines communally used bibliographic databases. (Medline, Cab, etc.)