

Using the Repository Explorer to Achieve OAI Protocol Compliance

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INTRODUCTION

The Open Archives Initiative (OAI) is dedicated to solving problems of digital library interoperability by defining simple protocols, most recently the Open Archives Initiative Protocol for Metadata Harvesting [2], which was unveiled in January 2001. To support the adoption of this new interoperability technology, we have developed the Repository Explorer [1], a web-based tool to enforce compliance to the same interpretation of the protocol by the various different server implementations. This demonstration will show how the Repository Explorer can be used to perform either user-driven browsing or automatic testing of an implementation of the protocol.

DESCRIPTION OF DEMONSTRATION

We will demonstrate the following features and modes of operation of the Repository Explorer:

1. Prospective implementers may browse through the contents of any existing archive using only the OAI protocol (see **Figure 1**). Some sample archives will be used to demonstrate this browsing functionality.



Figure 1. Repository Explorer basic interface

2. Implementers of the OAI protocol can use the tool to test their implementations for correctness. Any errors in HTTP usage, protocol semantics, handling of parameters or encoding of XML will be detected and displayed to the user (see **Figure 2**) during browsing. Some deliberately incorrect implementations will be used to illustrate examples of common errors that are detected by the software.

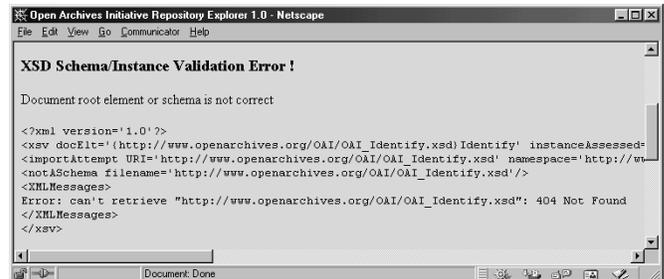


Figure 2. An XML error – missing schema description

3. In automatic testing mode, an archive can be subject to a sequence of protocol requests with combinations of legal and illegal parameters. The responses from each such request will be tested for validity (see **Figure 3**).

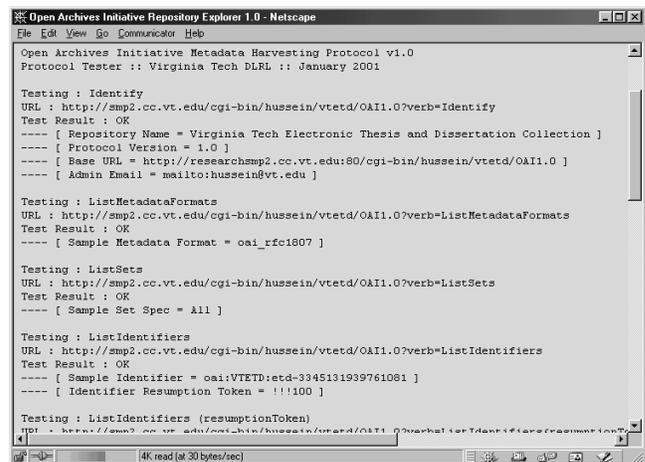


Figure 3. Output from automatic testing

The Repository Explorer is implemented as a web-accessible application, requiring only the use of a JavaScript enabled browser on a client machine.

REFERENCES

- [1] Suleman, Hussein. OAI Repository Explorer. http://purl.org/net/oai_explorer
- [2] Van de Sompel, Herbert and Carl Lagoze. The Open Archives Initiative Protocol for Metadata Harvesting. Open Archives Initiative, January 2001. <http://www.openarchives.org/OAI/openarchivesprotocol.htm>