

CS 411 Crystal Software Requirements

Blackboard Archive Extractor

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3. Specific Requirements

3.1. Functional Requirements

3.1.1. Graphical User Interface

- 3.1.1.1.** When the application is launched with no command line arguments, the graphical user interface will be displayed.
- 3.1.1.2.** GUI “file to extract” control element. The application’s GUI will have a control element which allows the user to specify the location of a Blackboard Course Archive to extract.
- 3.1.1.3.** GUI “location to extract to” control. The application’s GUI will have a control which allows the user to specify the location to which the application will extract the content of the Blackboard Course Archive.

3.1.2. Command Line Arguments

- 3.1.2.1.** When the application is launched with two command line arguments, the arguments will be interpreted as follows:
 - 3.1.2.1.1.** The first command line argument will be treated as the file path to the location of the archive to extract.
 - 3.1.2.1.2.** The second command line argument will be treated as the destination path into which the archive, specified in command line argument 1, will be extracted.

3.1.3. HTML Content Pages

- 3.1.3.1.** The application will extract a user-provided Blackboard course archive and output an HTML website.
- 3.1.3.2.** The HTML website will display all content which was contained within the specified Blackboard course archive.
- 3.1.3.3.** Each page will represent the content that can be found within a top level section of the original Blackboard Course for the specified Blackboard Course Archive.

3.1.4. HTML Index Page

- 3.1.4.1.** The application will create an HTML index page to index the web pages created in requirement 3.1.3.
- 3.1.4.2.** The links in the HTML index page will match the top level links in the Blackboard Course relating to the specified Blackboard Course Archive.

3.1.5. Manifest XML Parser

- 3.1.5.1. The parser will create a list of the “item” elements within the Manifest XML file.**
- 3.1.5.2. The parser will create a list of the “resource” elements within the Manifest XML file.**
 - 3.1.5.2.1. Resource elements are first processed by the Resource XML parser**
- 3.1.5.3. Will generate the HTML Index Page from the top-level “item” elements**

3.1.6. Resource XML Parser

- 3.1.6.1. Processes a specified “resource” XML element.**
 - 3.1.6.1.1. Determines all associated files, hyperlinks, text, and converts the content into an HTML format.**
 - 3.1.6.1.2. Associates the “resource” element with a resource file.**

3.1.7. File management

- 3.1.7.1. The application will extract files such as pdfs, powerpoints, and images from the archive to that they can be accessed from the website.**

3.1.8. Hyperlink Validation

- 3.1.8.1. The application will validate the availability of any hyperlinks that reference locations outside of the blackboard course.**
- 3.1.8.2. Any links to websites which are no longer available, which return HTTP 400 level response codes, will be marked as “dead” and displayed as such on the output website.**
- 3.1.8.3. Any links which are still available will be listed as HTML anchors on the website.**

3.2. Assumptions

- 3.2.1. The user provides a valid Blackboard Archive file.**
- 3.2.2. If the user fails to provide a valid Blackboard Archive, an error message will be displayed on the screen.**

3.3. Non-Functional Requirements

3.3.1. Maintainability

3.3.1.1. The architecture of the application will allow support for future versions of Blackboard. Features introduced in future updates may not be compatible with the Blackboard Archive Extractor prototype.

3.3.1.2. The Blackboard Archive Extractor prototype will not receive any updates following the completion of the application.