Feasibility-Blackboard Extractor

CS 410 - Team Crystal
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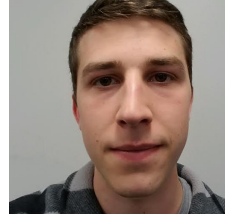Software Engineer

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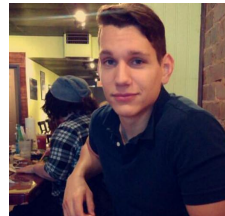Software Engineer

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Outline

1. Blackboard Usage in Learning Institutions
2. Problem Statement
3. Manual Extraction of Blackboard Archives
4. The Current Process Flow
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Blackboard Usage in Learning Institutions

Blackboard is an online tool used by schools, colleges, and universities to organize the course materials of a class for both professors and students. It allows professors to provide information such as syllabi and homework assignments to students over the internet.

In 2014, approximately 17,000 schools were using Blackboard, in over 100 different countries.[1]

Old Dominion University Review Process

According to the Old Dominion University Faculty Handbook, lecturers are reviewed every year, senior lecturers are reviewed every three years, and tenured professors are reviewed every five years.[2]

Professors are required to present all materials used throughout all courses taught since the previous review, including any material stored on Blackboard.

Blackboard only stores courses for two years, after which the course must be exported as a Blackboard Archive file.

Extracting Blackboard Archives
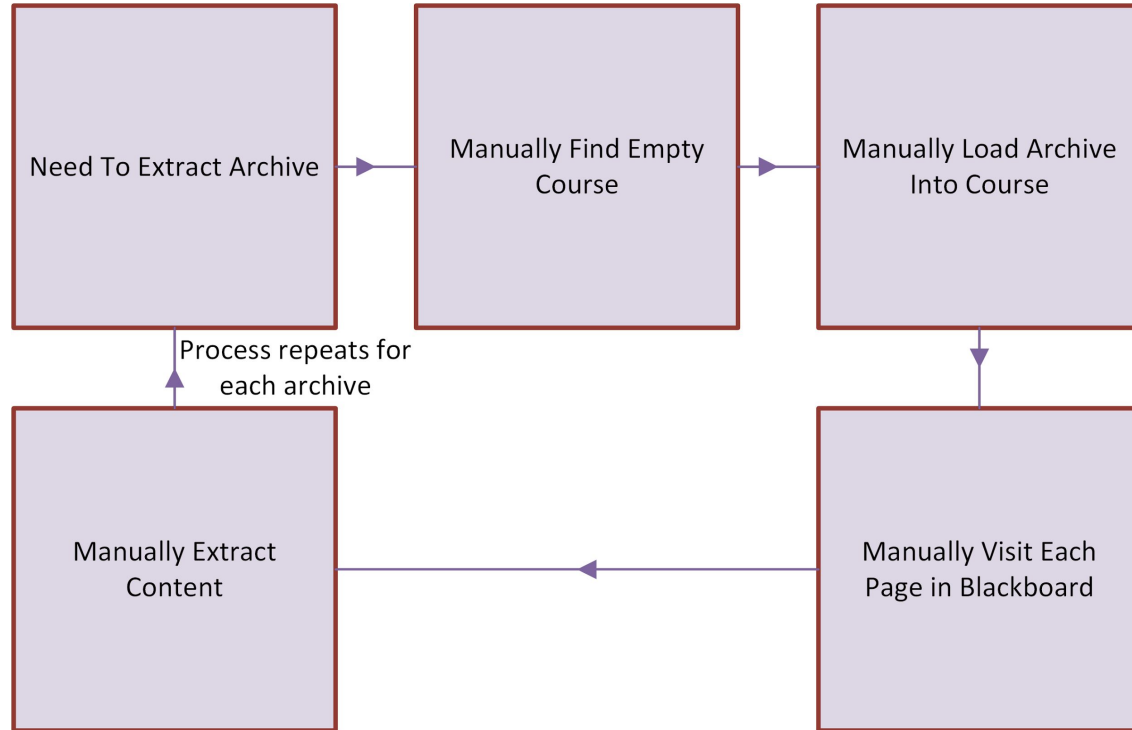
Our Problem Statement

Professors have difficulty retrieving course content after it has been exported to a Blackboard Course Archive.

Manually Extracting Blackboard Archives

Currently, extracting a Blackboard archive requires a professor to:

- Find an unused Blackboard course into which he or she can load the archive.
- If there is no unused Blackboard course, it is not possible to extract the content.
- Manually download course content, page-by-page.
- Manually format folder structure.
- This process must be repeated for each course archive.

Current Manual Process Flow

Plans For Our Solution

Our solution will be an application which allows a user to load a Blackboard Course Archive and explore the contents of the archive.

- This application will be able to handle all types of blackboard content including blog posts, module items, pdfs, *etc*.
- The application will create a directory containing all of the extracted and processed contents from the Blackboard Course Archive.
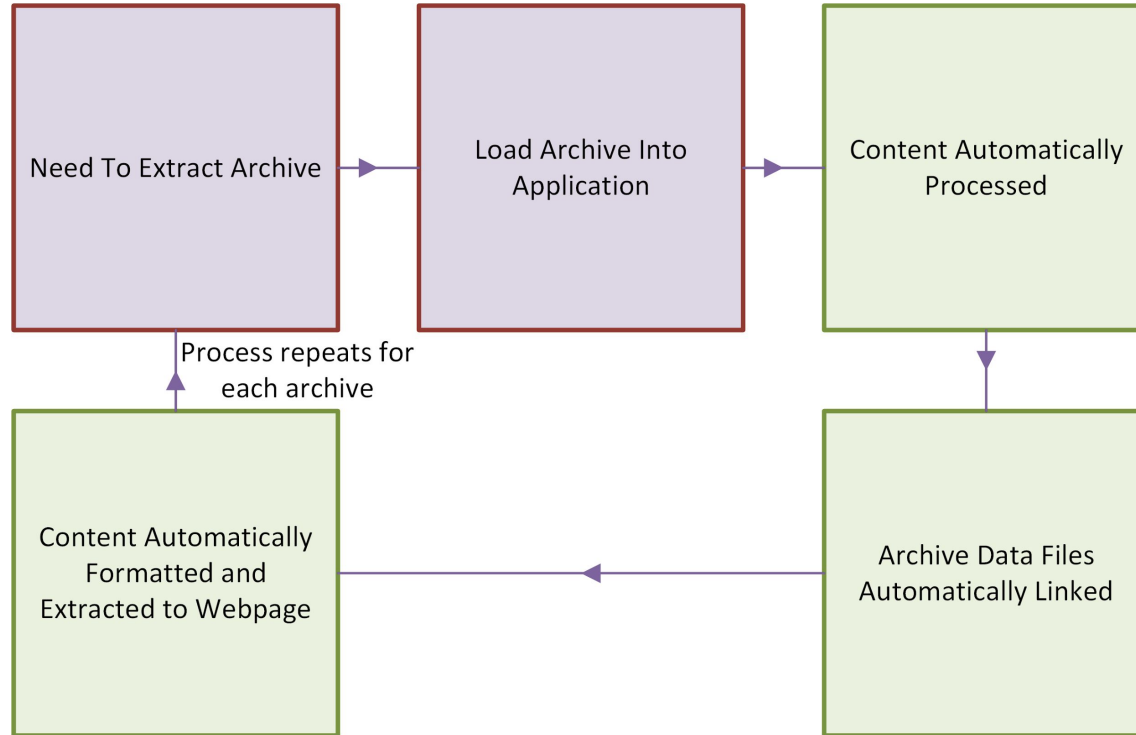
Target Customers

Our initial focus will be Old Dominion University, Universities, Colleges, and other Educational Institutes currently using the Blackboard course management system.
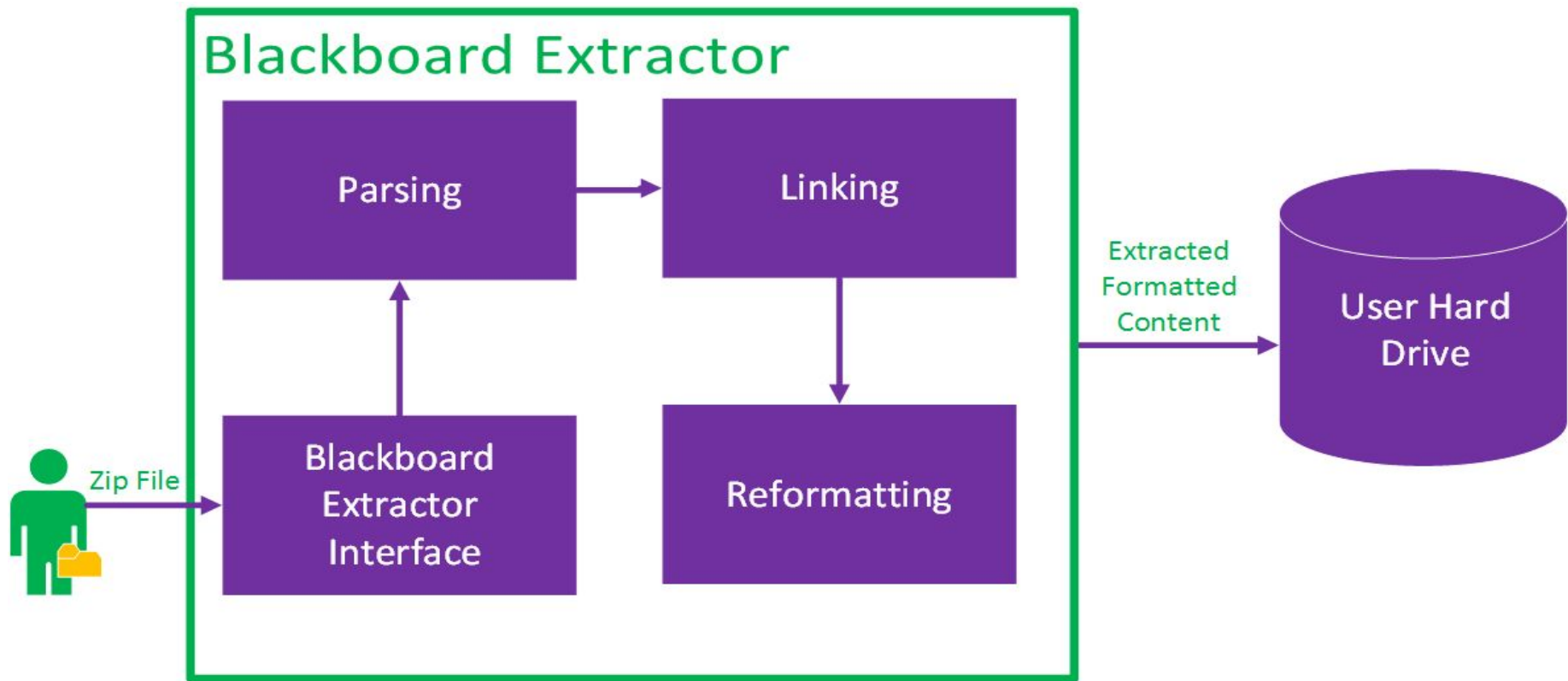
End Users

Professors using the Blackboard Learn System that are subject to periodic reviews of their course material.

Revised Automated Process Flow

Need To Extract Archive → Load Archive Into Application → Content Automatically Processed

Process repeats for each archive

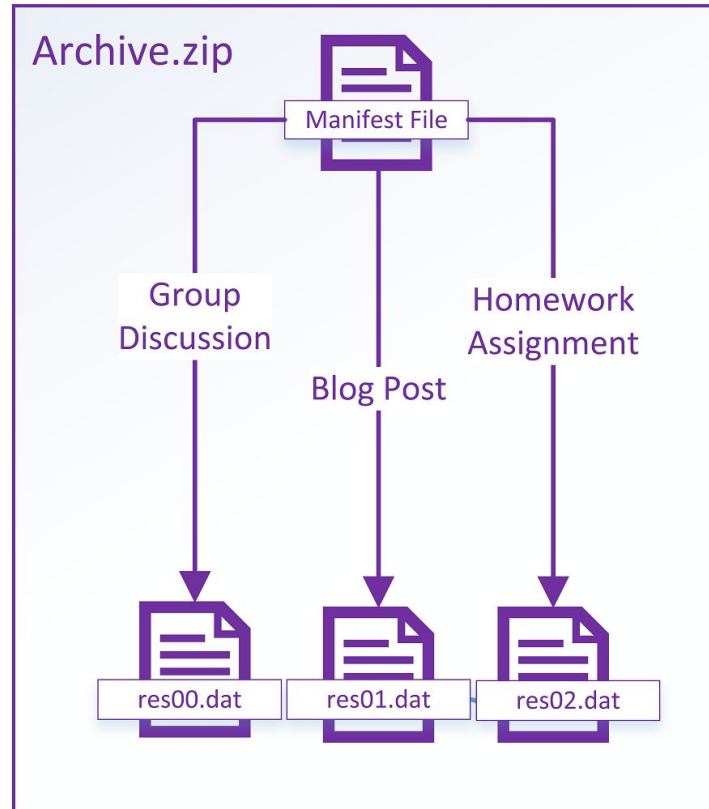Content Automatically Formatted and Extracted to Webpage ← Archive Data Files Automatically Linked

Major Functional Components

Structure of Blackboard Archive

What Not to Expect

- This application will not host the website.
- This application will not automatically retrieve Blackboard Archives.
- This application will not extract PLE web content - PLE is independent

Frameworks, Libraries, and Platforms

- Microsoft .NET Framework 4.6 - WinForms
- Microsoft Visual C#
- XLST - XML to HTML Parsing
  - Included in .NET Framework

Former Competition - bFree Blackboard Extractor

	Our Blackboard extractor	bFree Blackboard Extractor[3]
Extracts archives and converts to webpage	X	X
Runs a java web applet		X
Runs from an executable	X	
Modern Webpage Design	X	
Documentation included	X	
Supports Latest Blackboard Version 19	X	

Conclusion

- Evaluated by a review committee.
- BlackBoard Learn is used by professors and teachers at over 17,000 institutions.[1]
- The current extraction process is entirely manual.
- Our solution makes the process automatic and convenient.

Questions?

References

1. Corcoran, B. (2014, July 23). Blackboard's Jay Bhatt Strikes Up the Brass Band. Retrieved October 19, 2016, from https://www.edsurge.com/news/2014-07-23-blackboard-s-jay-bhatt-strikes-up-the-brass-band?elq=29068c31188e4150bde7dd6db8a3dab7&elqCampaignId=7599
2. ODU Faculty Handbook. (2005, December 21). Retrieved October 26, 2016, from http://ww2.odu.edu/ao/facultyhandbook/index.php?page=ch07s01.html
3. BFree: Extract Blackboard content. (n.d.). Retrieved October 19, 2016, from https://its2.unc.edu/tl/tli/bFree/index.html
4. Blackboard | Reimagine Education | Education Technology. (n.d.). Retrieved October 19, 2016, from http://www.blackboard.com/