

# Milestones- Blackboard Extractor

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CS 410 - Team Crystal  
November 17, 2016

# Team Crystal Mentor

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- Associate Professor, Old Dominion University
- Ph. D. in Computer Science, Ohio State University
- Extensive research in software testing, reliability measures, distance learning and digital libraries

# Team Crystal



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Software Engineer



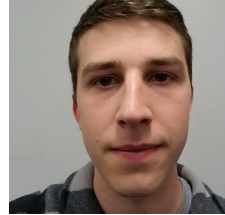
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Software Engineer/Test Analysis



**Austin Tillery**

Software Engineer



**Devin Haslam**

Software Engineer



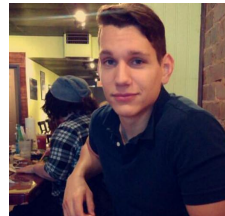
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# Outline

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# Extracting Blackboard Archives

Our Problem Statement

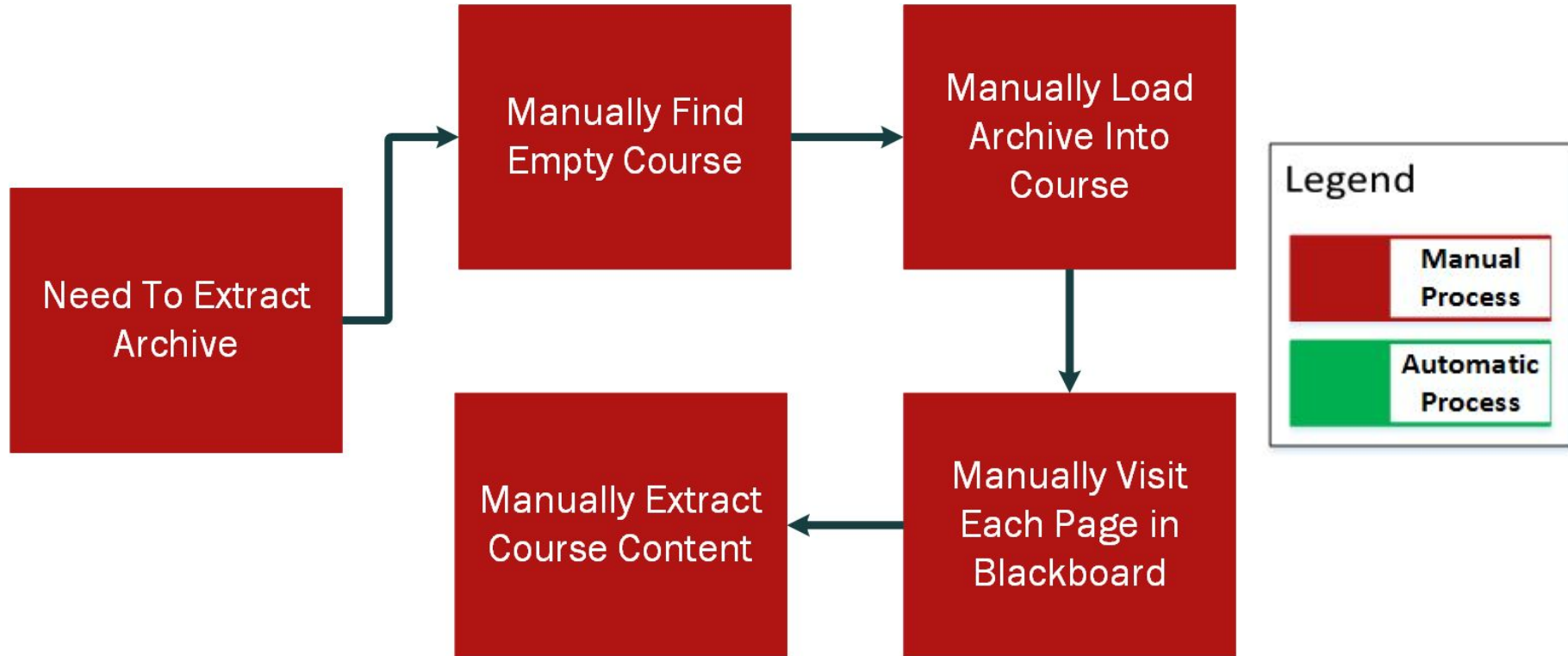
Professors have difficulty retrieving course content after it has been exported to a Blackboard Course Archive.

# 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.

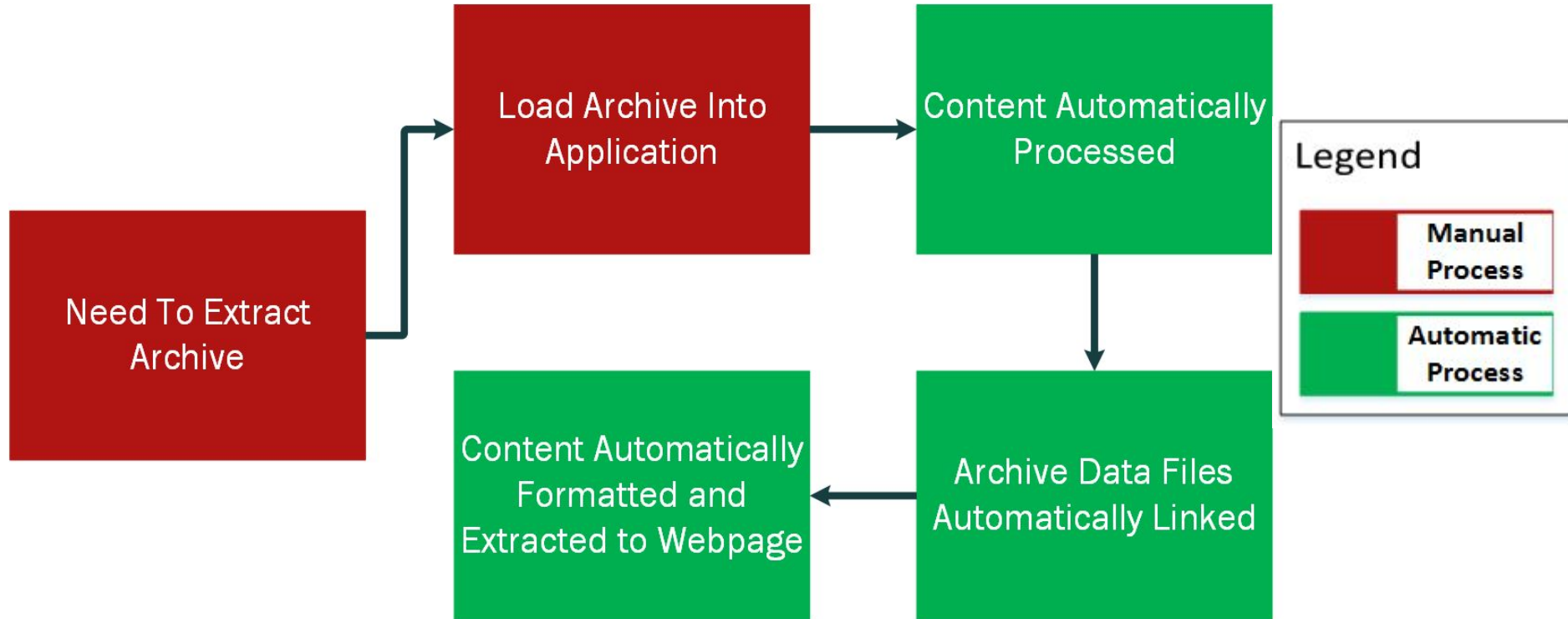
- This application will be able to handle all types of blackboard content including blog posts, module items, pdfs, *etc.*
- The application will create a directory containing all of the extracted and processed contents from the Blackboard Course Archive.



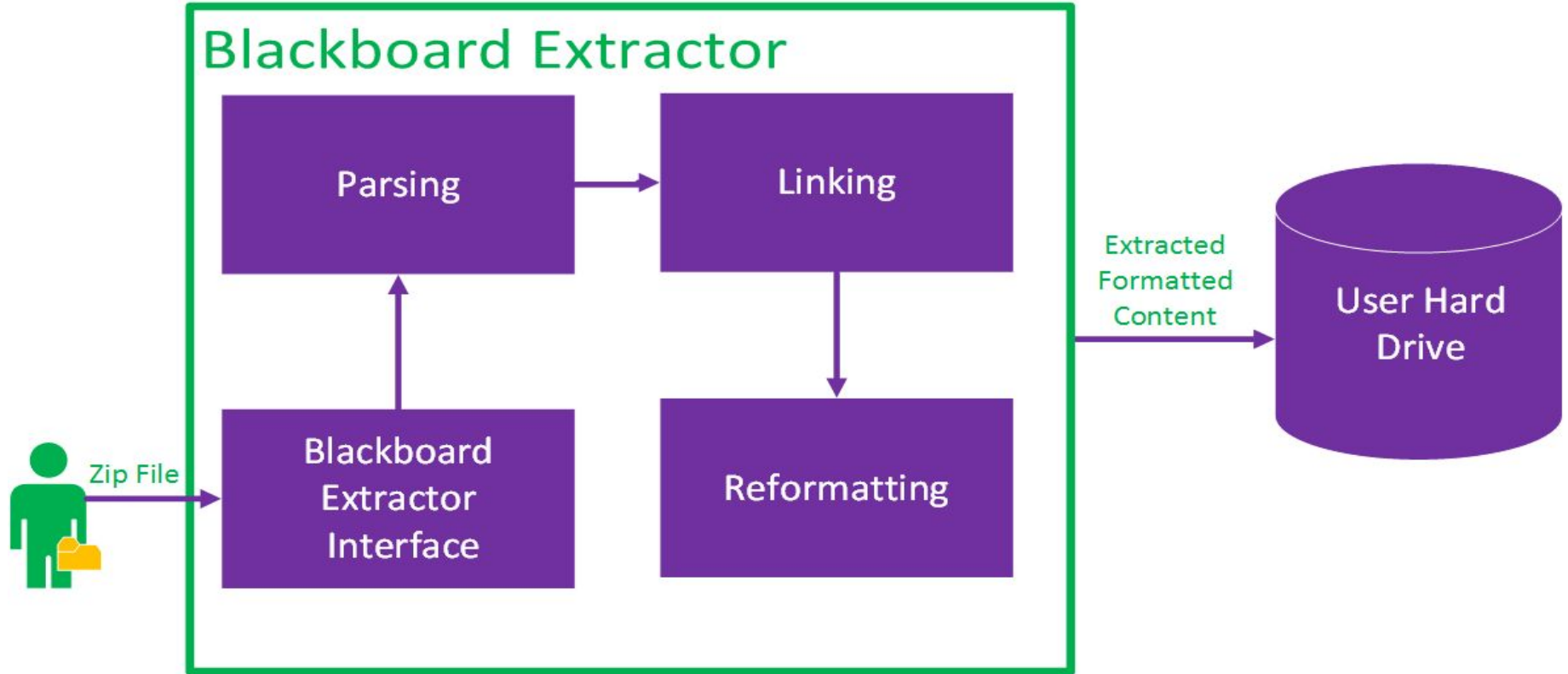
# Target Customers

Our initial focus will be educational institutions currently using the Blackboard course management system.

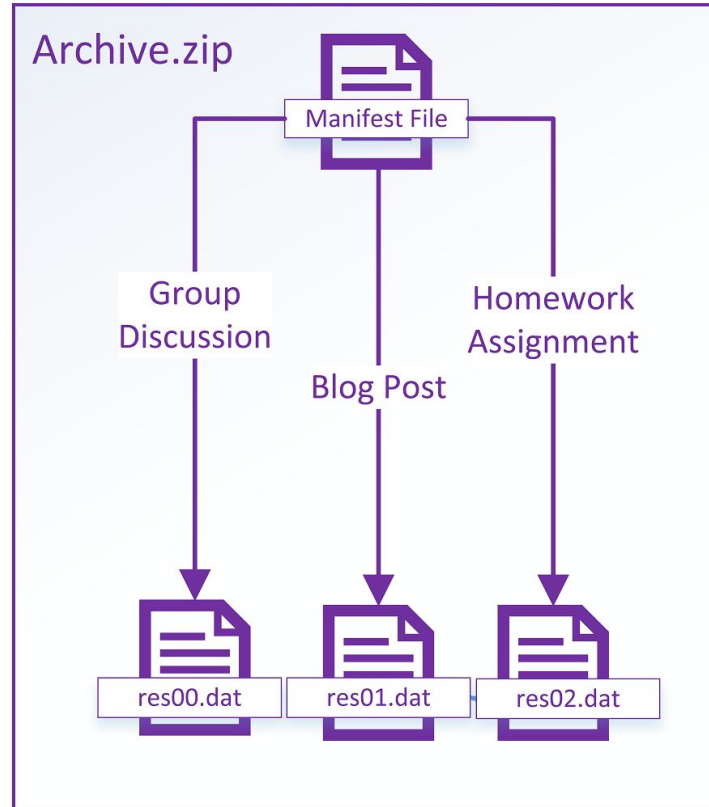
# Revised Automated Process Flow



# Major Functional Components



# Structure of Blackboard Archive



# Software Milestones

Linking Algorithm

Formatting

User Interface

Testing

# Software Milestones: Linking Algorithm

Linking Algorithm

Formatting

User Interface

Testing

- Interprets Manifest file and identifies .dat files
- Builds links between files that are related to each other (i.e. parent/child, hyperlinks)

# Software Milestones: Formating

Linking Algorithm

Formatting

User Interface

Testing

- Uses the information interpreted by the linking algorithm
- Builds a file structure containing all of the contents, the contents are indexed by HTML files
- Entire structure of the archive will be viewable in the HTML pages

# Software Milestones: User Interface

Linking Algorithm

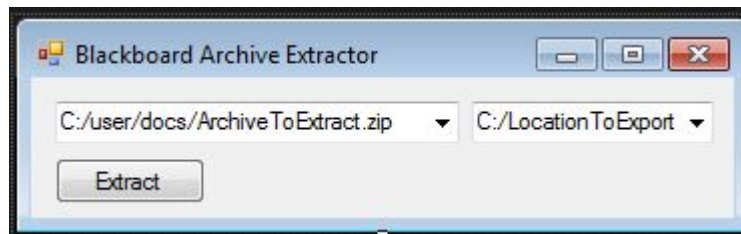
Formatting

User Interface

Testing

- Creates simplified Input / Output
- User can drag and drop a Blackboard archive to extract
- User can chose a location to save the Blackboard archive
- Can automatically open the index file to display the webpage

Example of GUI-





# Software Milestones: Testing

Linking Algorithm

Formatting

User Interface

Testing

Aspects to test:

- Linking method
- Formatting of archived course
- Effectiveness of GUI and display

Alpha Test

- Closed testing conducted by team Crystal
- The linking method will be the focus of the alpha test

Beta Test

- Open testing conducted by ODU faculty
- The formatting and display will be the focus of the beta test

# Former Competition - bFree Blackboard Extractor

	Our Blackboard extractor	bFree Blackboard Extractor <sup>3</sup>
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	

# Risk Matrix

		Probability				
		Very Low	Low	Medium	High	Very High
Impact	Very High	T2		C2		
	High					
	Medium		C1			
	Low					
	Very Low	T1				

## Customer Risks

C1. Customer dislikes UX/UI

C2. University stops using BB

## Technical Risks

T1. Security permission issues

T2. BB changes archive style

# Risk Assessment: Customer

## **C1. Customer Dislikes UI/UX**

*Probability: low*

*Impact: medium*

If professors do not like the UI/UX, they will be hesitant to use the software. This can be mitigated by offering more than one interface format.

## **C2. Old Dominion Stops Using blackboard**

*Probability: medium*

*Impact: very high*

If Old Dominion stops using blackboard, our software will be useless to the University. However, if our software is used at all schools using blackboard, the impact will not be as high.

# Risk Assessment: Technical

## **T1. Security Permission Issues**

*Probability: very low*

*Impact: very low*

If there is unauthorized access to a user's account, we must notify the user and direct them to the system administrator.

## **T2. Blackboard changes archive style**

*Probability: very low*

*Impact: very high*

If Blackboard were to drastically change its archive style in a new update, our software would have to be updated. We can avoid this risk by only supporting one version of blackboard.

# Conclusion

Professors have difficulty retrieving course materials from blackboard. Our blackboard extractor will help all professors using blackboard by automating and simplifying much of the archive extraction process. This includes our milestones which require a linking algorithm, formatting, user interface, and testing.

# Questions?

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