Milestones- Blackboard Extractor

CS 410 - Team Crystal
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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

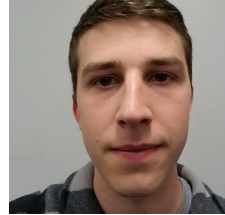# Team Crystal

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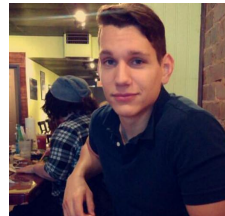Software Engineer

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Outline

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2. Manual Extraction of Blackboard Archives
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4. Plans for Our Solution
5. Target Customers
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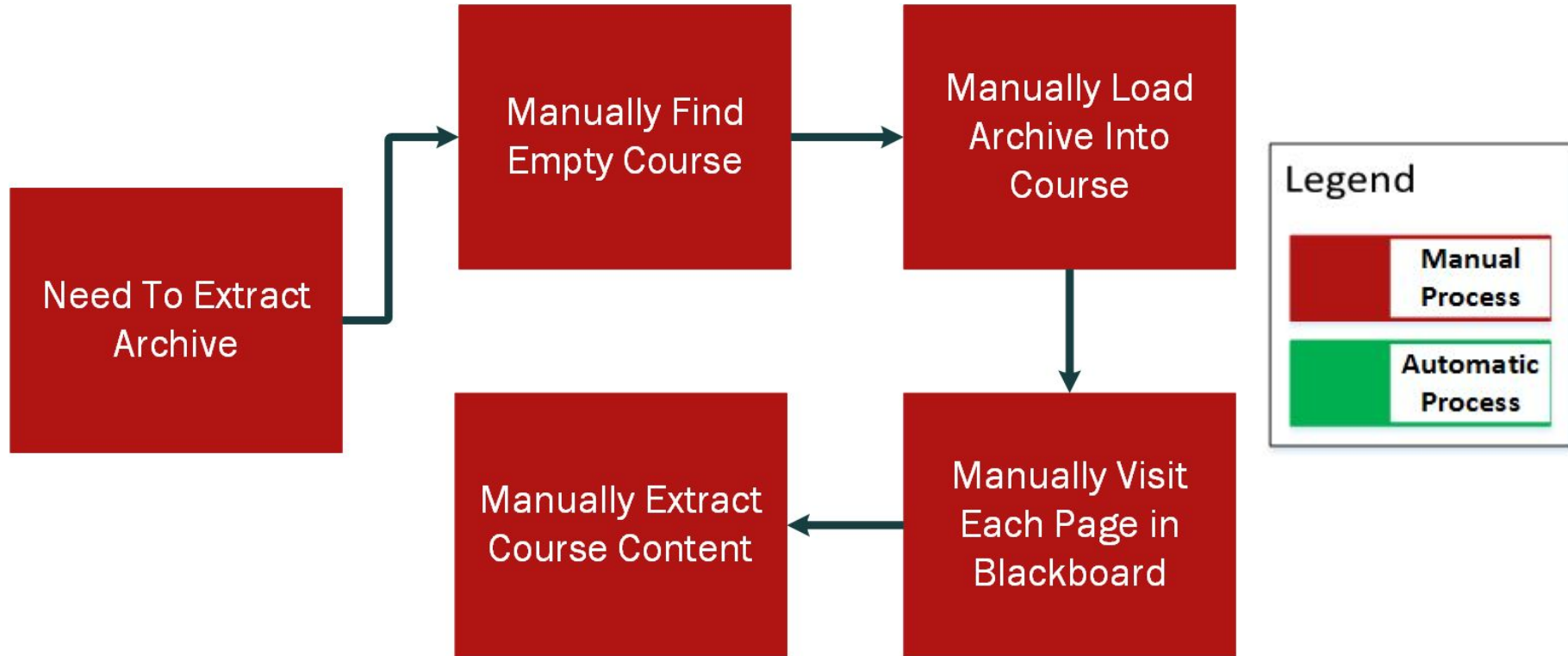# Extracting Blackboard Archives

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

Need To Extract Archive → Manually Find Empty Course → Manually Load Archive Into Course → Manually Visit Each Page in Blackboard → Manually Extract Course Content

Legend
- Manual Process (red)
- Automatic Process (green)

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.
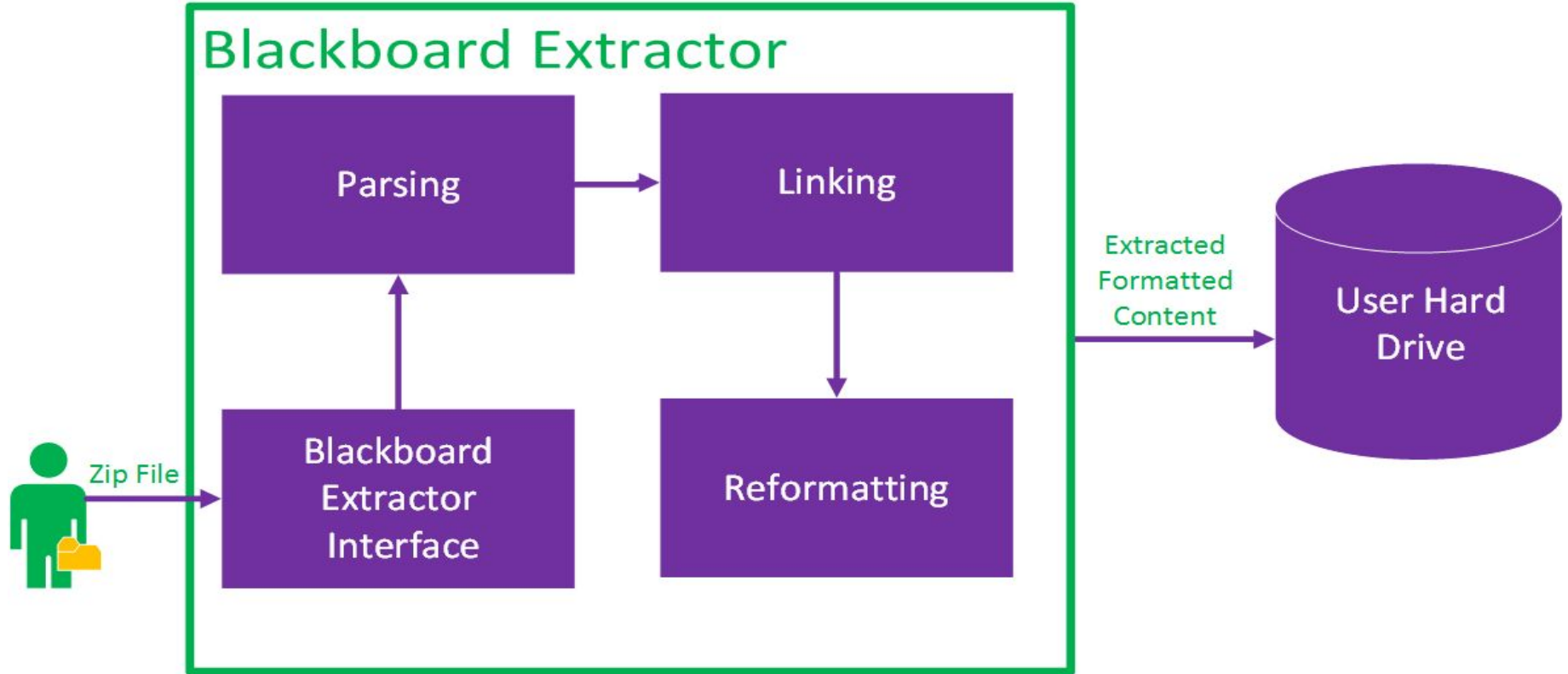
Target Customers

Our initial focus will be educational institutions currently using the Blackboard course management system.
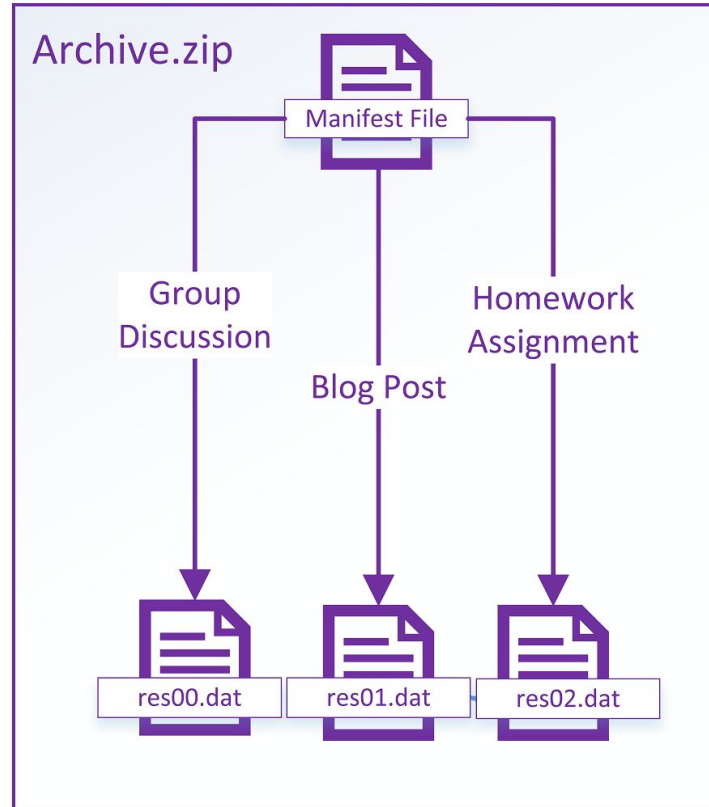
Revised Automated Process Flow
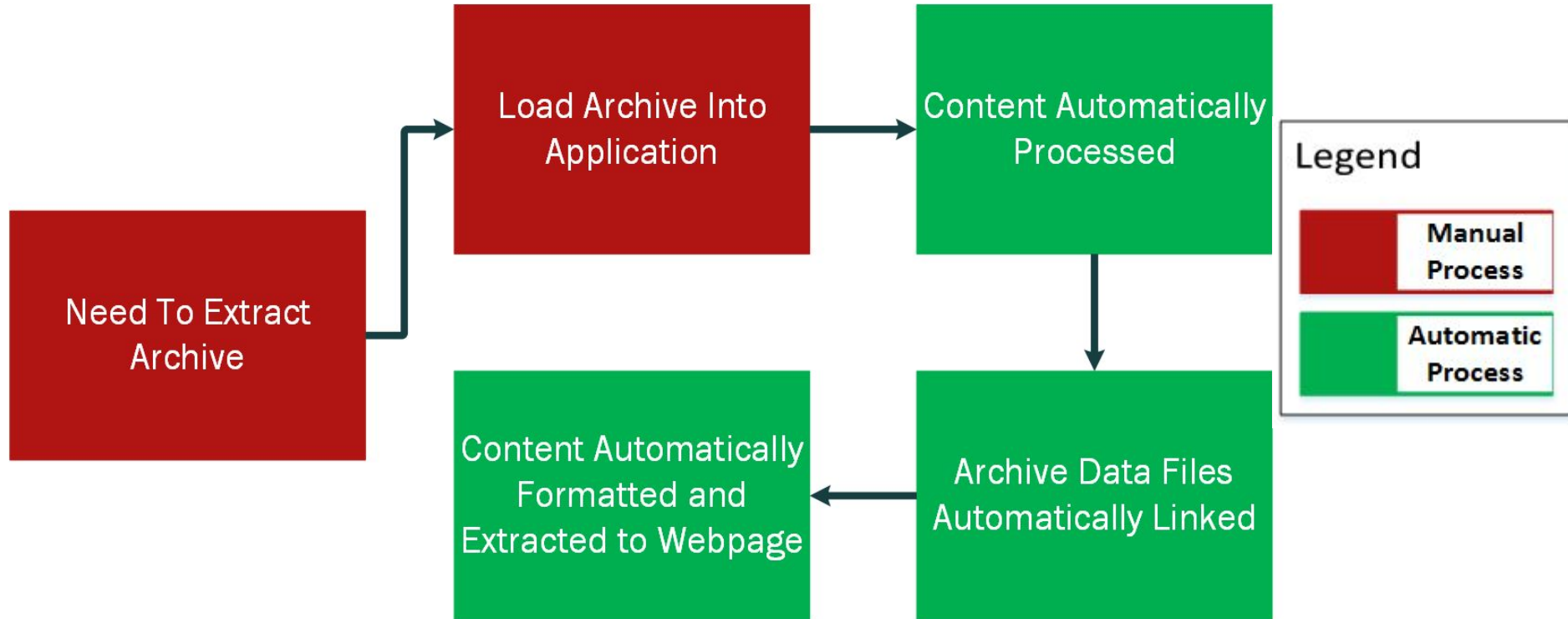
Major Functional Components

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

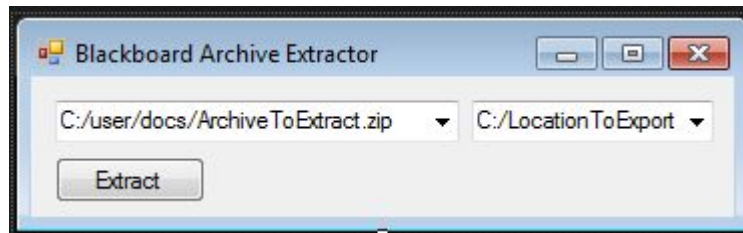**User Interface**

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-

Blackboard Archive Extractor

C:/user/docs/ArchiveToExtract.zip ▼   C:/LocationToExport ▼

Extract

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[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	

Risk Matrix

	Probability				
Impact	Very Low	Low	Medium	High	Very High
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: low *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?