

MICHIGAN STATE

UNIVERSITY

Project Plan Presentation

The Capstone Experience

Team UWM

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Fall 2023



*From Students...
...to Professionals*

Project Sponsor Overview

- #1 Wholesale lender & mortgage lender in US
- Over 7000 team members on-site in Pontiac, MI
- Provides mortgage products to mortgage brokers
- CEO is Mat Ishbia: former walk on MSU point guard



Project Functional Specifications

- Consolidate data from multiple systems into single comprehensive DataMart
- Develop a model that assesses risk associated with each software change
- Allows team leaders to make informed decisions about development risks and monitor team performance.



Project Design Specifications

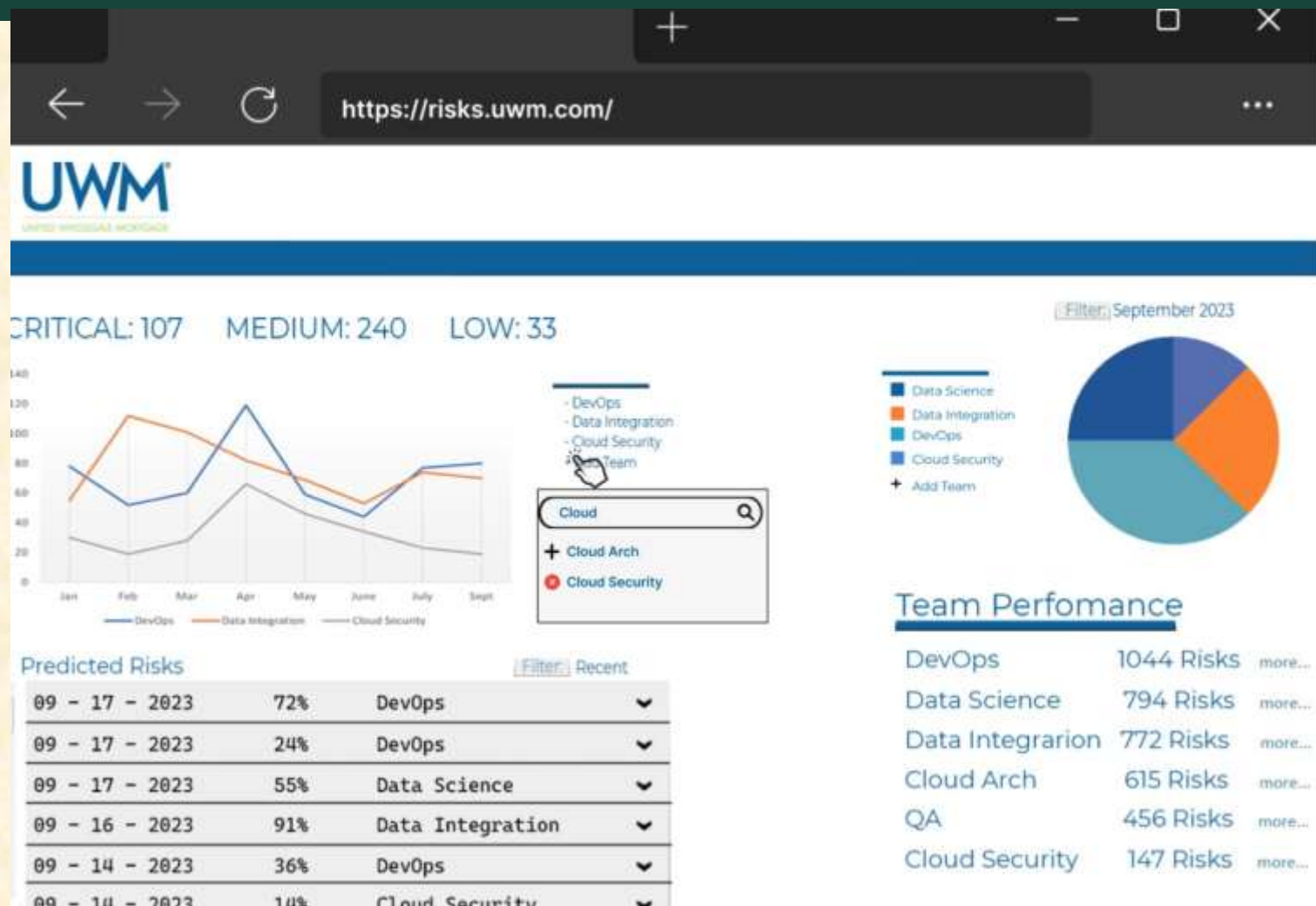
- Line graph displaying critical, medium, low risks
- List of recent risks, along with AI confidence
- Team distribution pie chart
- Team overview list showcasing best/worst teams
- UI options to filter data



Screen Mockup: Dashboard



Screen Mockup: Adding Teams



Screen Mockup: Pie Chart



Screen Mockup: Data Dropdown



Screen Mockup: Team performance

UWM
UNIVERSITY OF WISCONSIN MEDICAL CENTER

Data Science

CRITICAL: 4 MEDIUM: 39 LOW: 16

Predicted Risks [Filter](#) Severity

09-09-2023	13:52:02	91% Confidence of Risk	BitBucket PR Branch	Resolve
08-24-2023	03:12:55	90% Confidence of Risk	Suspicious Time	Resolve
03-15-2022	13:52:02	82% Confidence of Risk	Critical ServiceNow...	Resolve
01-01-1656	12:22:22	80% Confidence of Risk	Poor Review and QA	Resolve
09-08-2023	13:52:02	71% Confidence of Risk	BitBucket PR Branch	Resolve
09-07-2023	13:52:02	61% Confidence of Risk	BitBucket PR Branch	Resolve
09-06-2023	13:52:02	51% Confidence of Risk	BitBucket PR Branch	Resolve
09-05-2023	13:52:02	41% Confidence of Risk	BitBucket PR Branch	Resolve
09-04-2023	13:52:02	31% Confidence of Risk	BitBucket PR Branch	Resolve
09-03-2023	13:52:02	91% Confidence of Risk	BitBucket PR Branch	Resolve
09-02-2023	13:52:02	11% Confidence of Risk	BitBucket PR Branch	Resolve

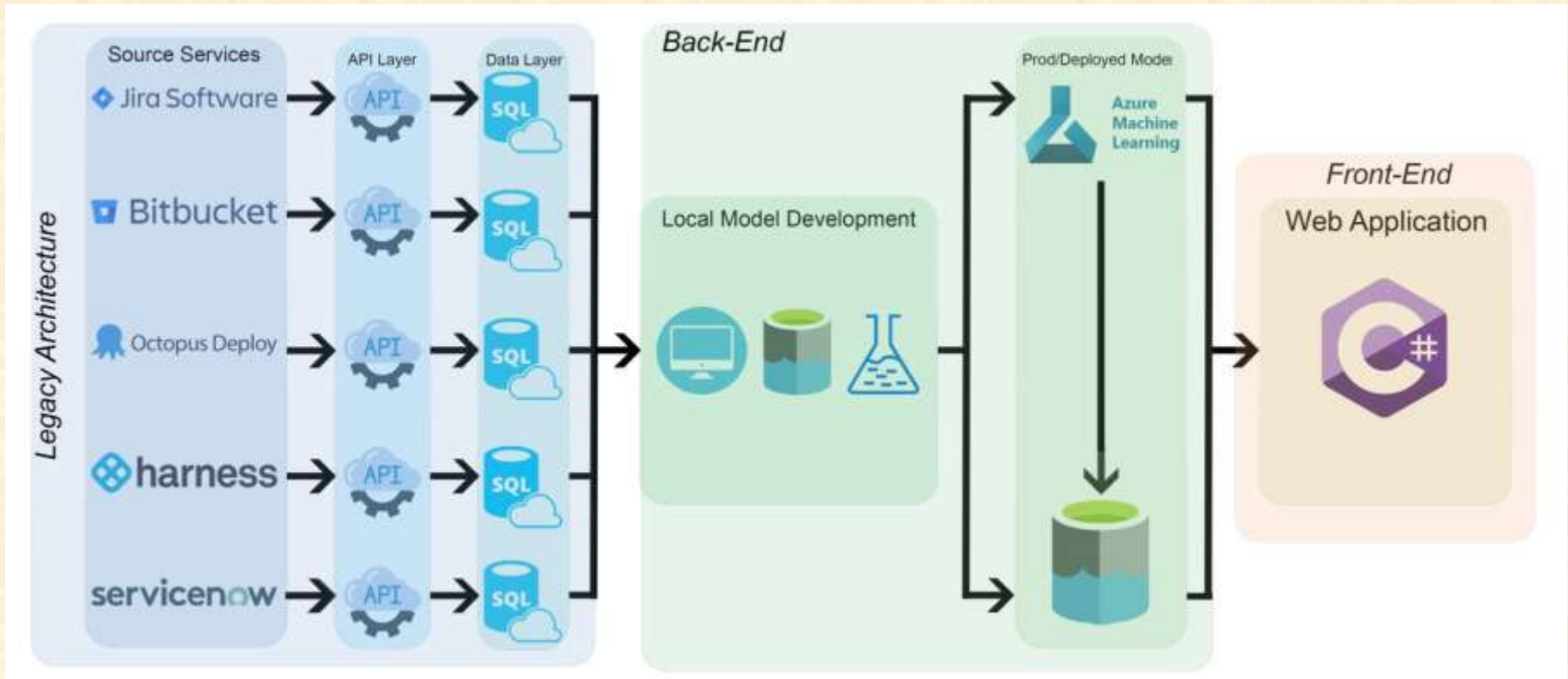


Project Technical Specifications

- Legacy Architecture (Phase 1)
- Microsoft Machine Learning Studio Classic
- Microsoft SQL Server Management
- Visual Studio 2022 integration with Azure Cloud Services



Project System Architecture



Project System Components

- Hardware Platforms
 - Company laptops
- Software Platforms / Technologies
 - Data sources: Bitbucket, Jira, Octopus, Harness, ServiceNow
 - Microsoft SQL Server Management Studio
 - Microsoft Machine Learning Studio (classic)
 - Visual Studio 2022 - C#



Project Risks

- DataMart
 - Risk: Data is spread across multiple different systems
 - Mitigation: Create a centralized DataMart
- Outdated Software
 - Risk: Using Microsoft Machine Learning Studio Classic is older, not as good for customizable ML
 - Mitigation: Research alternate options such as Azure Machine Learning (Newer One)
- Azure Machine Learning
 - Risk: Unfamiliar with Azure Cloud, Machine Learning Services
 - Mitigation: In touch with UWM support team, use resources provided
- Potential gaps in data
 - Risk: There could be gaps in data if they were not using a particular software at a certain time
 - Mitigation: Figure out a way to discard irrelevant data without inducing bias



Questions?

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