MICHIGAN STATE UNIVERSITY

Project Plan Presentation

Evergreen 3C: Financial Education Content Library

The Capstone Experience

Team MSUFCU

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Spring 2022

From Students…
…to Professionals

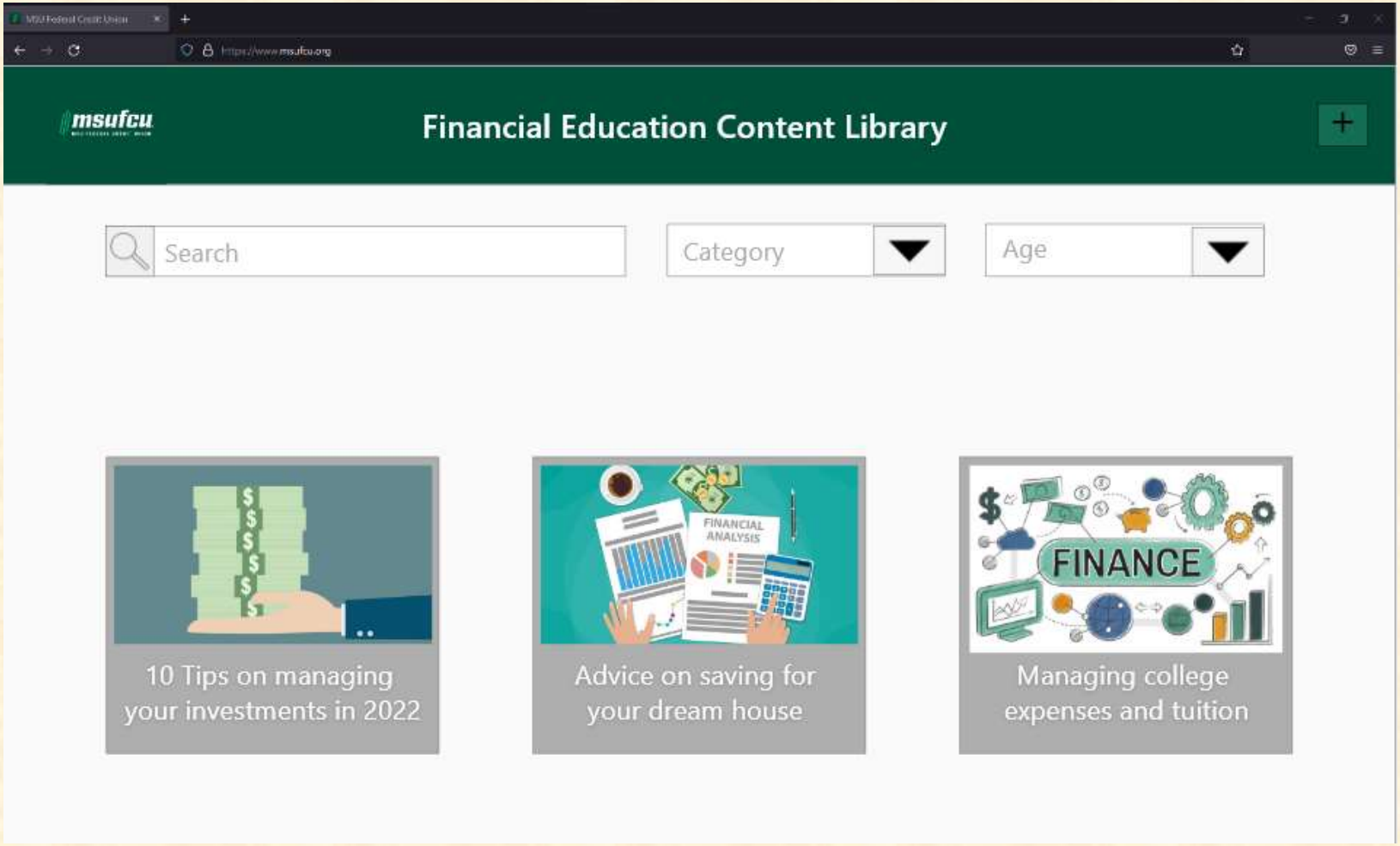
Functional Specifications

- MSUFCU plans to sell their financial education articles through Evergreen 3C.
- Buyers are interested in specific articles, but the articles are not categorized.
- Our project classifies and adds every article to a financial education content library.
- Evergreen 3C will be able to search articles by category, age group, or keyword.

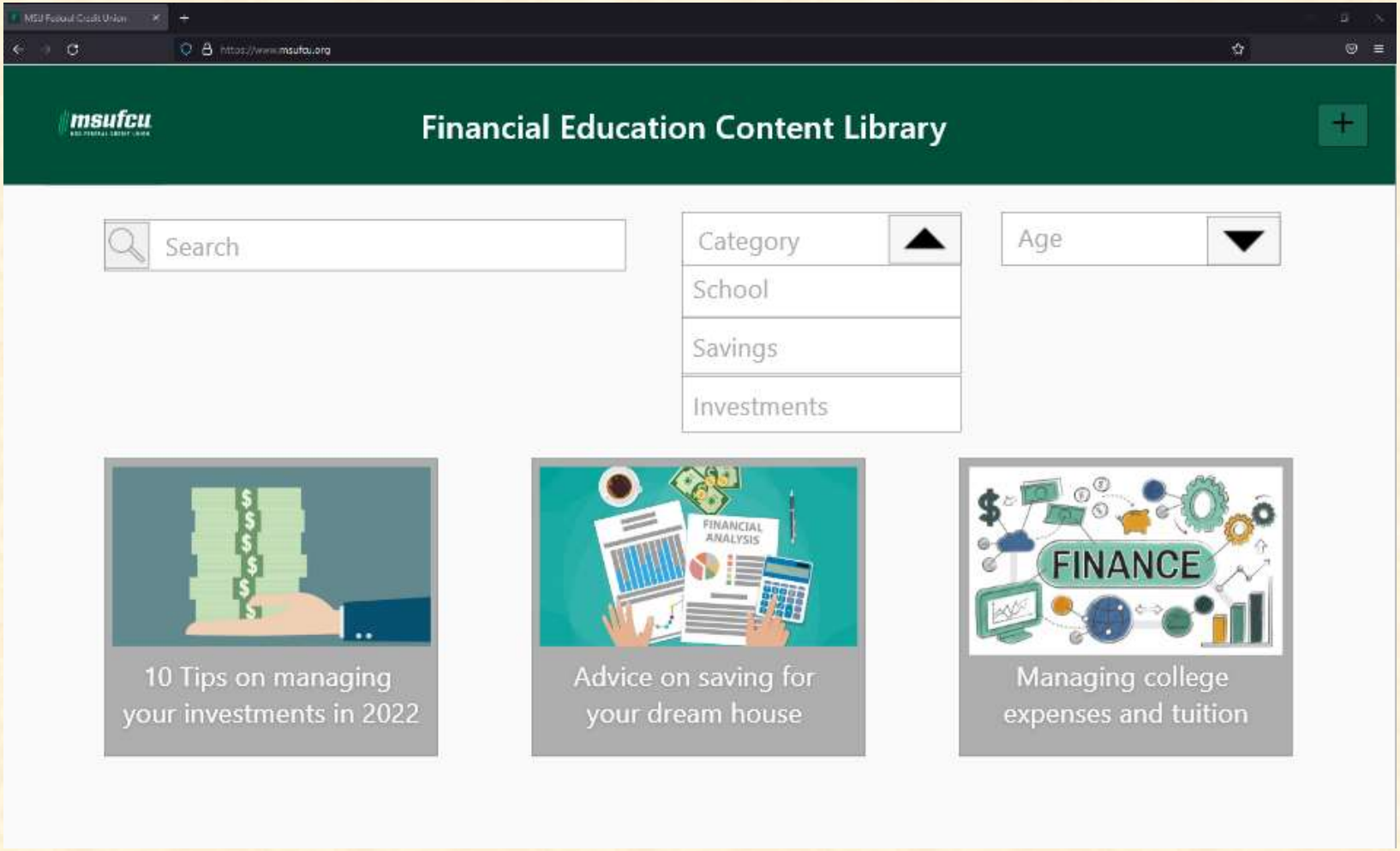
Design Specifications

- Platform is available on a web browser.
- Drop down menus for both the article category and its age focus.
- Search bar for user to find all relevant articles.
- Button for website user to add articles by file upload.

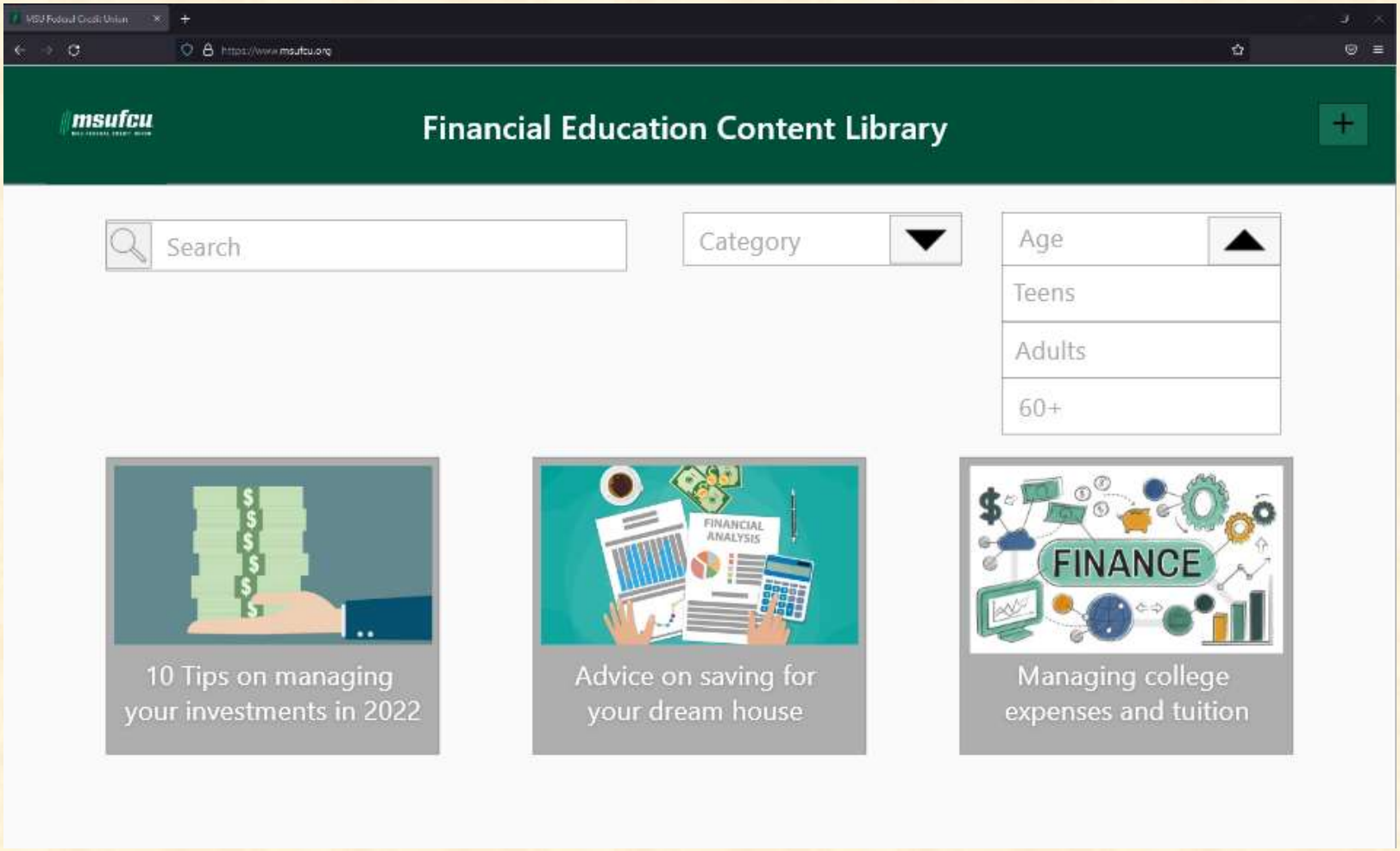
Screen Mockup: Home



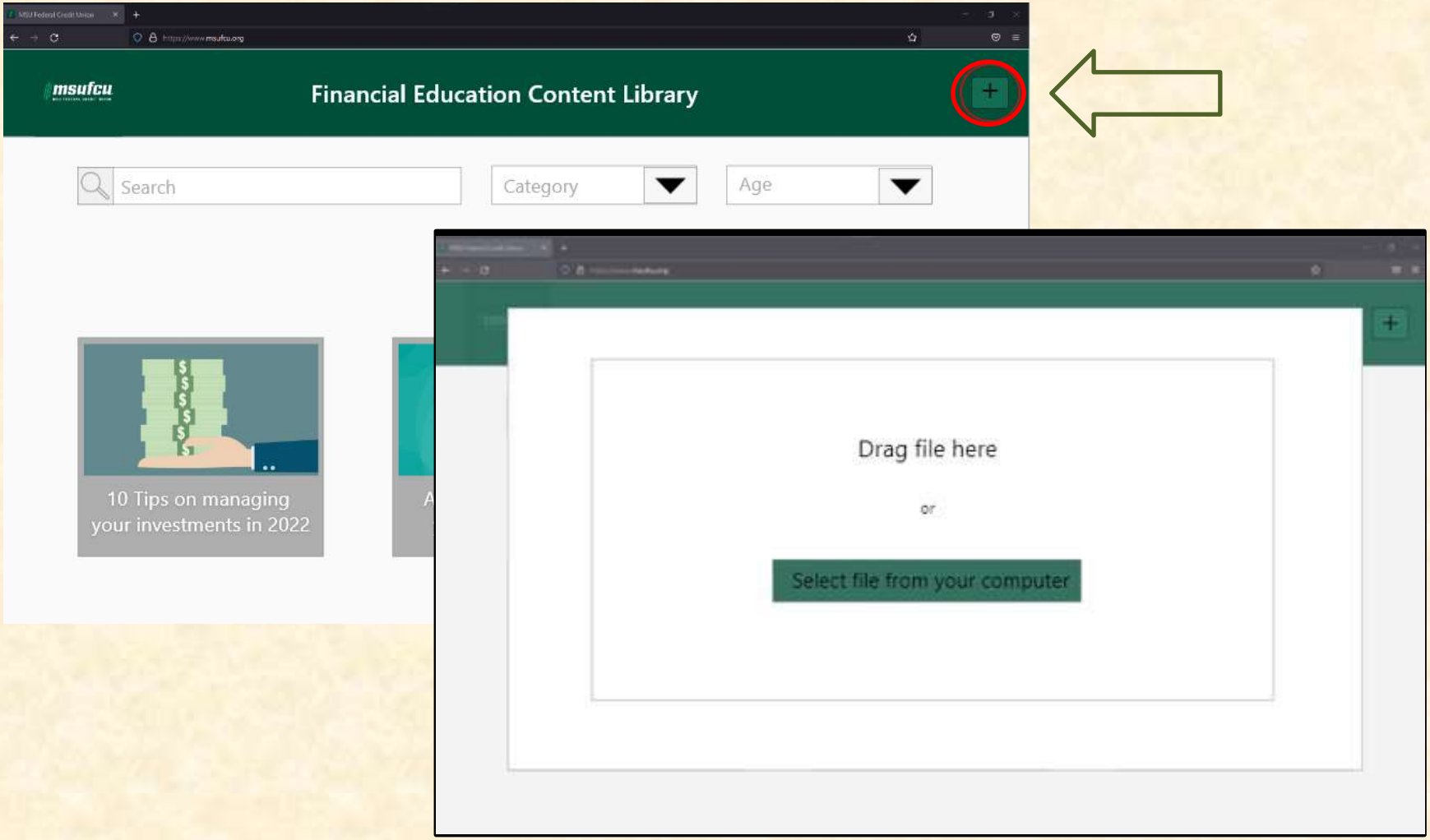
Screen Mockup: Categories



Screen Mockup: Demographic



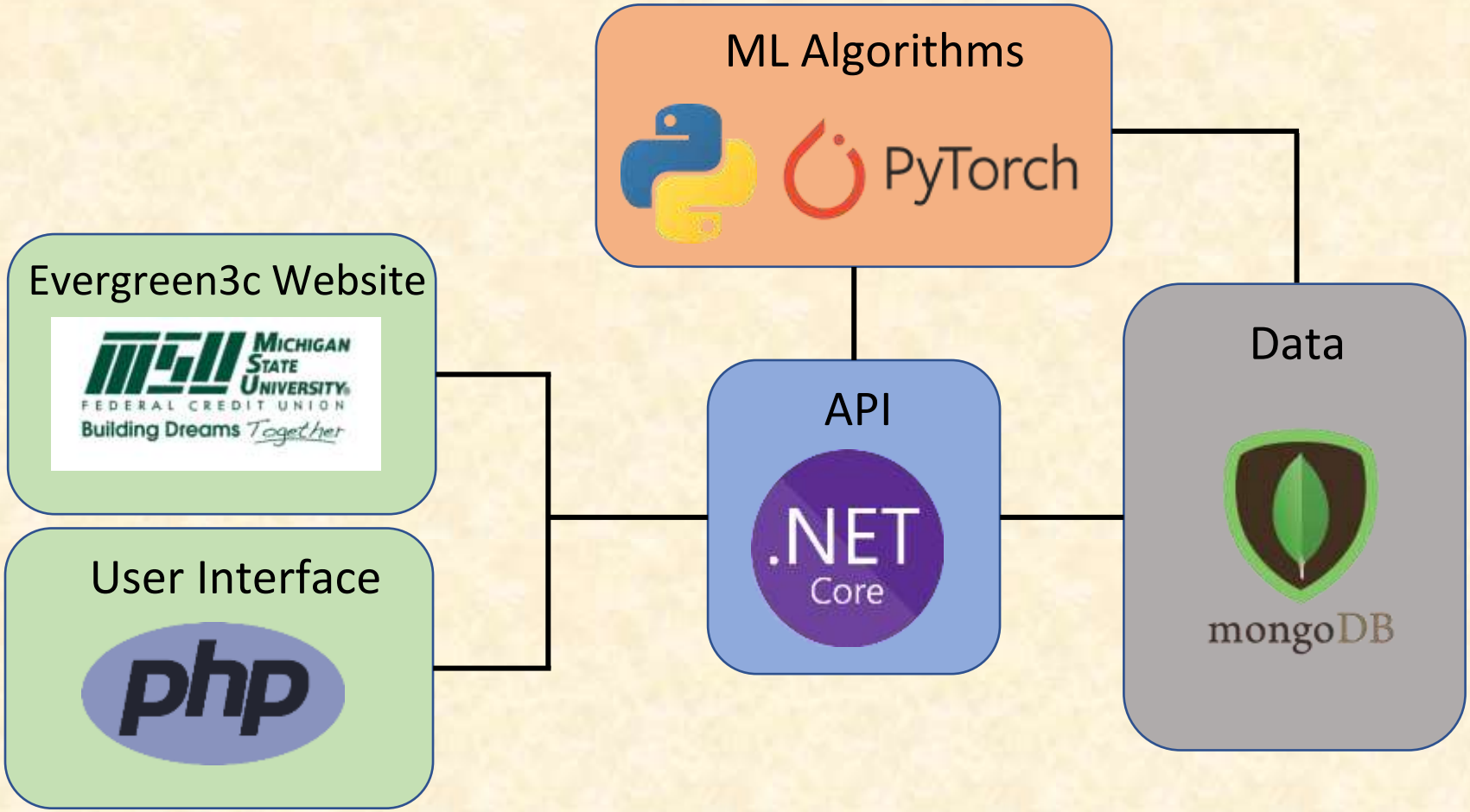
Screen Mockup: New Article



Technical Specifications

- PHP – front-end development/User Interface.
- .NET – HTTP API client used for communication between the UI and DB.
- Python/PyTorch – train and use our machine learning models for classification and search.
- MongoDB – Distributed database that will store the articles and data needed for searching.

System Architecture



System Components

- Hardware Platforms
  - Capstone Lab iMacs - hosting our MongoDB and web server.
- Software Platforms / Technologies
  - Visual Studio Code for .NET/C# development.
  - PHPStorm for PHP development.
  - PyCharm for python development.
  - MSU CSE's GitLab for source control.

Risks

- Obtaining Labeled Data
  - Our task requires supervised ML algorithms. Such algorithms require labeled training data which we currently do not possess.
  - Met with MSUFCU to discuss risk. They are looking for a solution on their end, but we may have to generate our own data.
- ML Algorithm
  - Multiple options are available for what ML algorithms to use – each one is dependent on the quality and size of the training set. It is just a matter of what we deem as the best choice.
  - Met with two professors with experience in ML and were told about BERT. We are confident using BERT will ease this risk. Testing will have to be done on the model to ensure it is producing accurate results.
- Smart Search
  - How do we implement a search on a database of text that returns results based on content meaning rather than a keyword search?
  - Look at related technologies like Google and other financial news sites to explore the methods they employ.
- Feature Creep
  - Possible our project may not be large enough for our group of 6. How do we add new features without hurting our ability to complete the project by week 15?
  - Create a strict project timeline and only add features that we deem necessary and feasible within the remaining time.

Questions?