

MICHIGAN STATE

U N I V E R S I T Y

Project Plan

AMPED

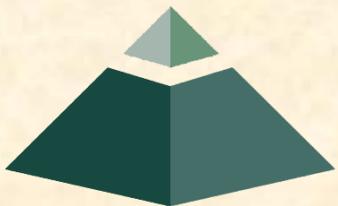
The Capstone Experience

Team Amazon

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

Functional Specifications

- Provide additional source of revenue
- User uploads audio contents
- Speech to text
- Perform NLP on text
- Relevance evaluated based on a set of heuristics
- Return items with Amazon Product API
- User selects items from refined list

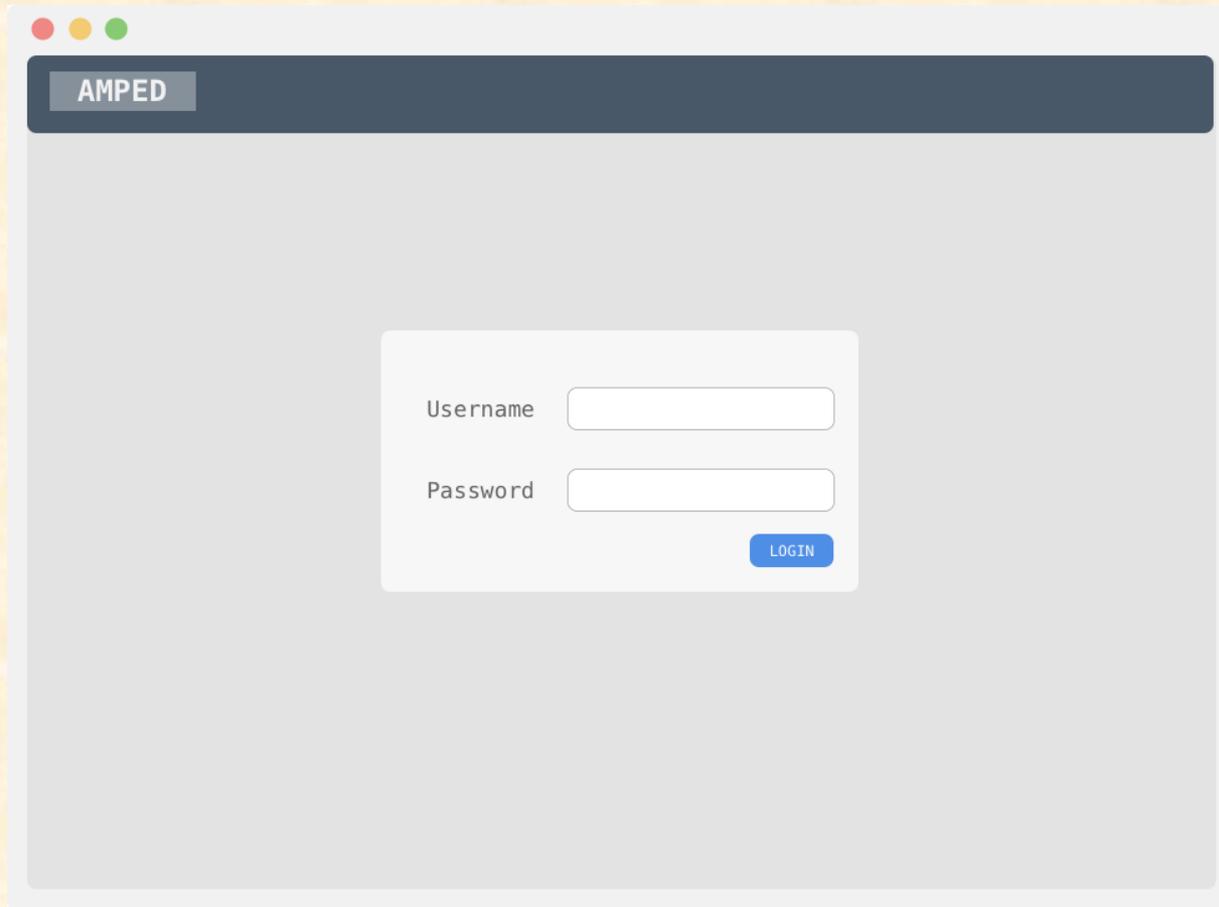


Design Specifications

- Secure user authentication
- Drag and drop file upload interface
- Web application dashboard
- Real time progress updates
- Visual representation of product performance
 - Number of clicks
 - Revenue per product



User Login Page



A mockup of a user login page. The page is displayed within a browser window with a dark blue header bar containing the text "AMPED". The main content area is light gray. In the center, there is a white rounded rectangle containing a login form. The form has two input fields: "Username" and "Password". Below the "Password" field is a blue button with the text "LOGIN".

AMPED

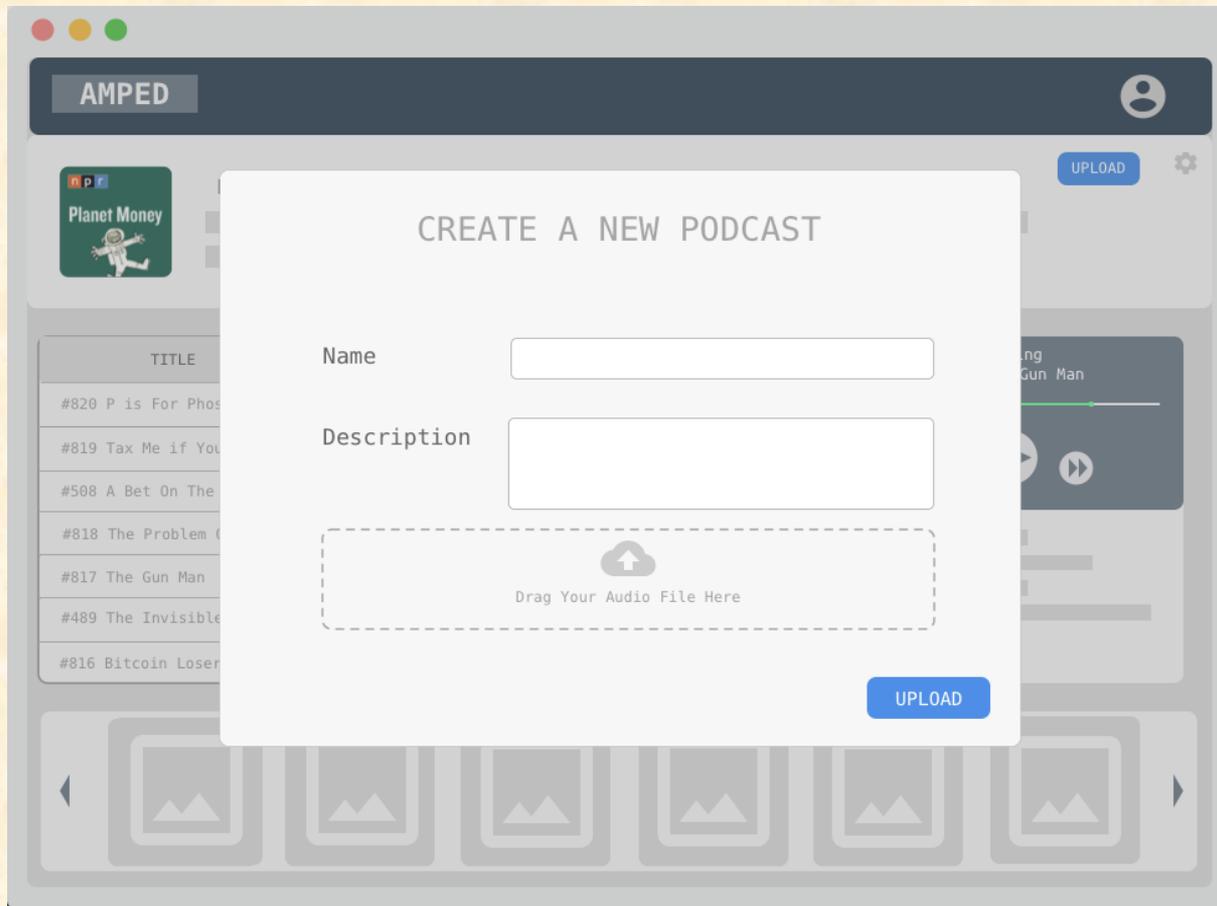
Username

Password

LOGIN



Podcast Upload Modal



Web App Dashboard

The dashboard, titled 'AMPED', features a dark blue header with a user profile icon. Below the header, there's a section for 'NPR - Planet Money' with an 'UPLOAD' button and a settings gear. The main content area is divided into two parts: a table of audio files and a media player.

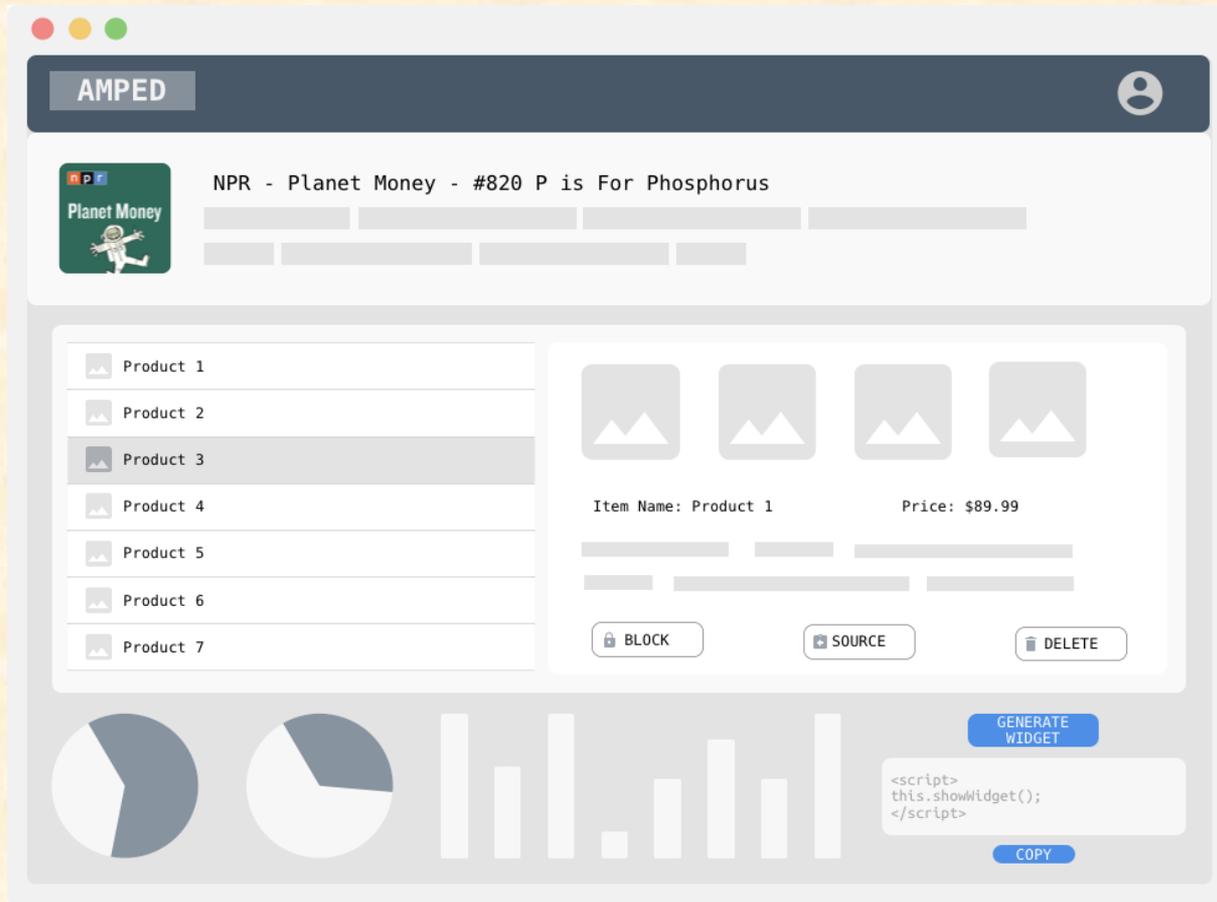
TITLE	STATUS	CREATED TIME	ACTIONS
#820 P is For Phosphorus	● Transcribing	2018-01-26, 8:00PM	▶ ⚙
#819 Tax Me if You Can	● Comprehending	2018-01-24, 8:56PM	▶ ⚙
#508 A Bet On The Fut...	● Comprehending	2018-01-19, 8:00PM	▶ ⚙
#818 The Problem Of Root	● Transcribing	2018-01-17, 8:00PM	▶ ⚙
#817 The Gun Man	● Completed	2018-01-12, 8:00PM	▶ ⚙
#489 The Invisible Plu...	● Failed	2018-01-10, 8:00PM	▶ ⚙
#816 Bitcoin Loser	● Completed	2018-01-05, 8:00PM	▶ ⚙

The media player on the right is currently playing '#817 The Gun Man'. It includes a progress bar, play/pause, previous, and next buttons, and a list of tracks below.

At the bottom of the dashboard, there is a horizontal carousel of six image thumbnails, each with a play button icon, and navigation arrows on either side.



Podcast Details Page

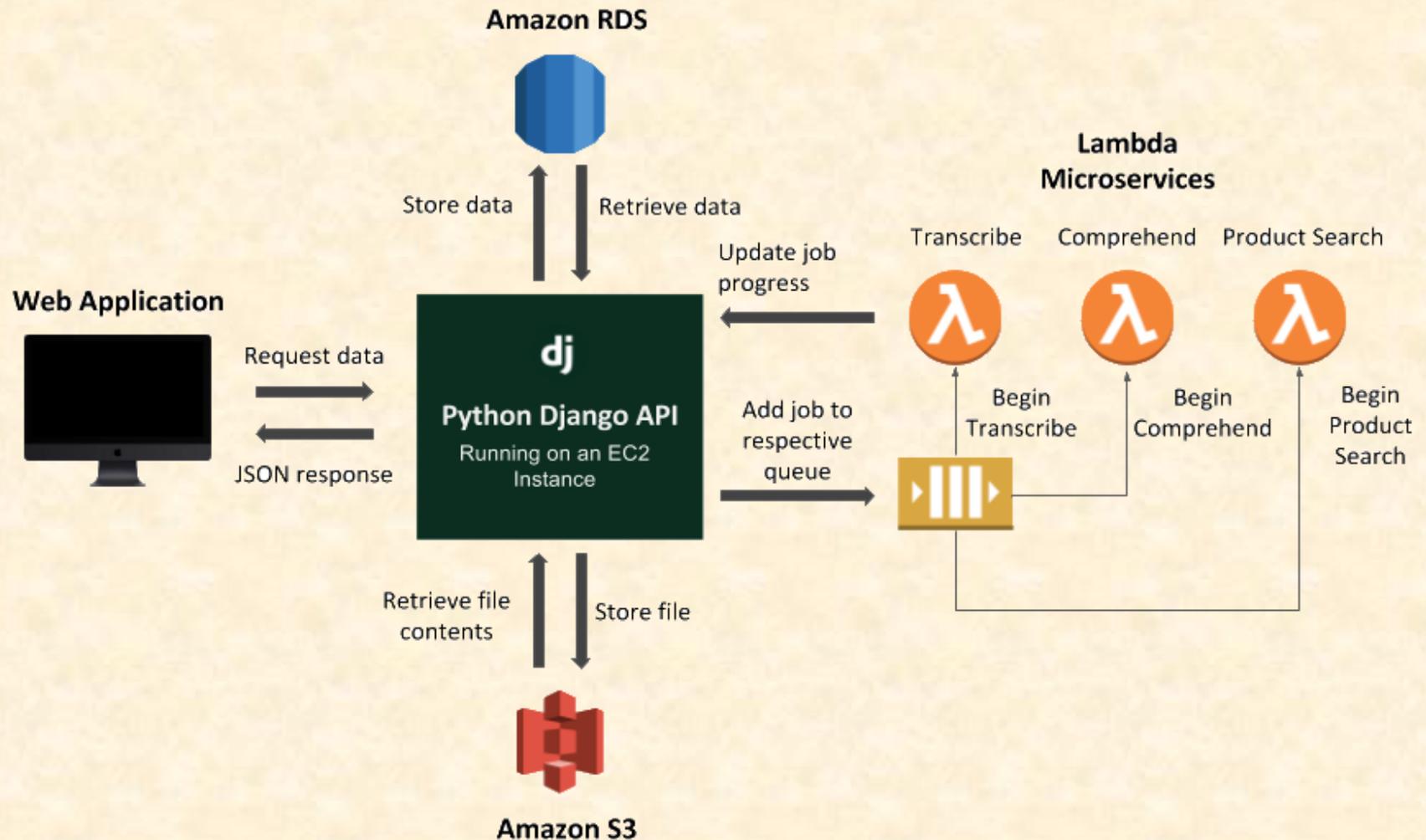


Technical Specifications

- S3: store audio files
- Transcribe: speech to text
- Comprehend: identify products and sentiment
- ItemSearch: search for **most relevant** products
- Back-end: process returned JSON objects
- Databases: persist acquired results
- Front-end: show player, progress and statistics



System Architecture



System Components

- Hardware Platforms
 - Elastic Cloud Compute (EC2) 64-Bit Servers
 - iMacs for developments
- Software Platforms / Technologies
 - Ubuntu Server, Nginx, MySQL
 - AWS SDK for Python and NodeJS
 - Jupyter Notebook, VS Code
 - Django, React
 - Amazon Web Services & APIs



Risks

- **Natural Language Processing (Comprehend) | Difficulty: Medium**
 - Sentiment analysis only available for whole document, not very helpful...
 - Consider parsing subsections of text using the offsets provided.
- **Limitations on API Usage | Difficulty: Hard**
 - Comprehend has an input limit of 5000 bytes.
 - Break large text down into segments.
- **Search Algorithm | Difficulty: Hard**
 - Creating a search algorithm that returns high quality products
 - Utilizing the Amazon APIs as much as possible, then construct our algorithm which will add needed features.
- **Tracking affiliate transactions | Difficulty: Hard**
 - We do not have access to the user shopping histories.
 - Use click counts to estimate revenue.



Questions?

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