**ARKANSAS MOVIE DATABASE**

A Bachelor's Project Report submitted to the

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**By**
**Rukshar Parwin**
**rxparwin@ualr.edu**

**Supervised by:**
**Dr. Elizabeth Pierce, Chairperson, Information Science**
**Mr. Bruce Bauer (Advisor), Information Science**
**Mr. Thomas Wallace (Client)**

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# Executive Summary

Each of the filmmakers who are interested in filmmaking in Arkansas depends on external sources to understand the landscape, movies that were shot here, and the actors who have ties to Arkansas. Filmmakers usually have high investments in this kind of project, and they may be interested to find out details on the location, incentive they may be able to get etc. Absence of central website promoted by Arkansas Film Commission makes this process costly and inefficient – and the information they may collect are prone to error. This can cost state of Arkansas unrealized revenue that it may lose and the potential job creation for the local talents in the state of Arkansas.

Providing efficient way of accessing movie information related to Arkansas keeping in mind research type of platform is the primary objective of the system. With no central website maintained by Arkansas Film Commission to provide this information, it was rather difficult to identify movies ties to Arkansas. More and more data entry rules were defined with each iteration, ranging from Movies shot in Arkansas to the Actors having some association with Arkansas. These details where used in creating tags to identify a movie that has ties to the State of Arkansas.

In order to achieve highest data quality, historical data were thoroughly reviewed. Reviewing data points provided important aspect of relation to Arkansas. This process was thoroughly practiced across all movies and appropriate tags with descriptions were implemented.

The user can access the data using the user-friendly website. The website is developed keeping in mind the requirement of the ease of access and research type of platform. This provides all the required information a filmmaker might need in their research about a movie and its ties to Arkansas. An administration account is created that will also serve as a data entry operator in an ongoing basis, including new data insertion, data retrieval, record lookup and update.

Traditionally, this kind of information was scattered in multiple manual systems. The new system provides a single source of truth that contains all Arkansas movie related data in one system. This system will improve data accessibility and data quality significantly.

# Introduction

Arkansas's uniquely diverse landscape and unspoiled beauty offer more effective and dramatic settings than most other locations. In concert with her natural beauty, Arkansas provides visionary producers with seamless and efficient single-contact access to production houses, skilled crews, casting agencies and the resources that help filmmakers get from script to wrap party.

This website is intended for filmmakers who are interested to explore filmmaking in Arkansas. Filmmaking is unique in the arts and it takes an army. Just like how a painter needs a brush, paint and a canvas, a filmmaker needs a writer, a cinematographer, a sound mixer, production designer, editor, actors, distributors and an audience – it cannot be done alone. The website is designed to provide previous successful projects that has ties to Arkansas either through its actors, or the location, and provide contact information that can connect filmmaker to talented, deepening crew base with potential workforce development incentives for studio and series productions.

The website will offer state-of-the-art navigation page, collecting movies data that has ties to Arkansas and centralizing it for design flexibility. According to Mark Smallcombe, writing for Xplenty website (*https://www.xplenty.com/blog/top-5-reasons-to-centralize-data/*), top 5 reasons for a business or organization to centralize data of their interest are 1) Helps optimize Data Assets, 2) Enhanced Consistency, 3) Focus on What's Important, 4) Enhanced Customer Experience, 5) Saves Time and Money.

Data optimization is an important aspect for effective data usage. Data, when used effectively, is a valuable asset that will help Arkansas Film commission perform better, drive unrealized revenue, and boost customer satisfaction.

Consistency with accessing is an important aspect so everyone is working with the same data and insights. The decisions a filmmaker makes based on the information driven from the website will be more transparent to other filmmakers. This will also greatly enhance marketing campaigns as this approach will ensure that each filmmaker is getting the same high-quality information consistently throughout their discovery journey. It will also provide a concrete direction to everyone interested in filmmaking in Arkansas.

Finally, in the digital age where customers have high expectations of brands, they quickly notice inconsistencies. However, when data is centralized, it's easier to deliver the same messages and experiences consistently.
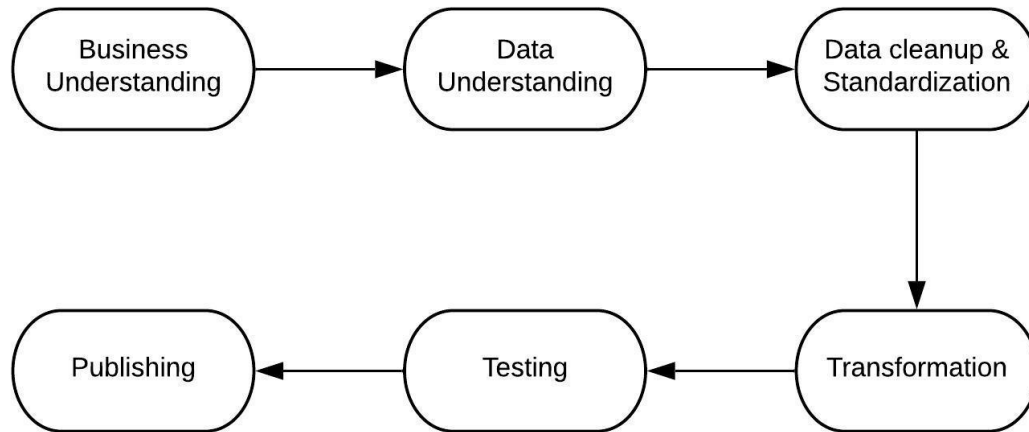
# Project Approach and Methodologies

The approach of this project development was taken keeping in mind the central need of the project, i.e., to provide filmmakers interested in Arkansas to navigate previous successful projects, share ideas, connect with each other, and nurture the new and existing film talent within our state through increased exposure to filmmakers and their art.

After thorough research and analysis, current system designs were implemented, prioritizing per the technology and time in hand to complete the project. It was clear from the starting that the website will rely on existing publicly available data sources such as themoviedb.org and Encyclopedia of Arkansas. A lot of time was spent in understanding the entire workflow. After analysis, the data flow and constraints of the data and disconnects with the existing systems such as themoviedb.org were discovered.

The next phase in the project was to create a process to populate the database with the "tags" for Arkansas related movie and improve the way of data entry without compromising the quality of data.

Data elements that are most important to handle the need of the project was examined. Based on the required elements, analysis was done, and elements were selected to capture all the required information. After initial analysis was completed, database solution was developed keeping in mind about data completeness and data consistency. Testing and working of the new system were next phase. Testing phase was done after the database creation phase. Below diagram depicts steps that were taken during database creating including testing.

```
┌──────────────┐     ┌──────────────┐     ┌──────────────┐
│   Business    │ ──▶ │     Data      │ ──▶ │ Data cleanup &│
│ Understanding │     │ Understanding │     │Standardization│
└──────────────┘     └──────────────┘     └───────┬──────┘
                                                    │
                                                    ▼
┌──────────────┐     ┌──────────────┐     ┌──────────────┐
│  Publishing  │ ◀── │    Testing    │ ◀── │Transformation│
└──────────────┘     └──────────────┘     └──────────────┘
```

Next phase dealt with data entry, wherein, the tags were created using the data from the Encyclopedia of Arkansas and was moved to the new database. As the ties to Arkansas is an important aspect and is limited as Admin functionality, test data sets were created to complete this step. Set of test accounts were created along with test Arkansas information.

Finally, an easy-to-use interface was developed to easily navigate through all this information using OutSystems. Front-end is specially designed keeping in mind that it is intended to provide research kind of platform to understand diversity of landscape.

Unifying feature of users will be people interested in films in AR. The website will include Arkansas Film Commission contact information for enquiry about filmmaking in Arkansas and potential incentive. By having direct access to all the data and contact information, any potential user can more efficiently verify, fulfill, and get information about their project.

**Assumptions**

- The data captured in themovedb.org is accurate.
- The data captures all the information related to actor, actress, and location with ties to Arkansas.

**Risks**

- The website will primarily rely on data extracted from Encyclopedia or AR and themoviedb.org. If there are future changes to these resources in terms of their data collection or accessibility, that will impact the project.

# User Interface (Accessibility)

**Adding a movie in Arkansas database.**

To add a movie in Arkansas database, user needs admin access to the application. For Admin users, "Add Movies" button will appear in the navigation. Upon clicking this, user will be redirected to following screen

[ArkansasmovieList (personal-lyxnqufg.outsystemscloud.com)](ArkansasmovieList)
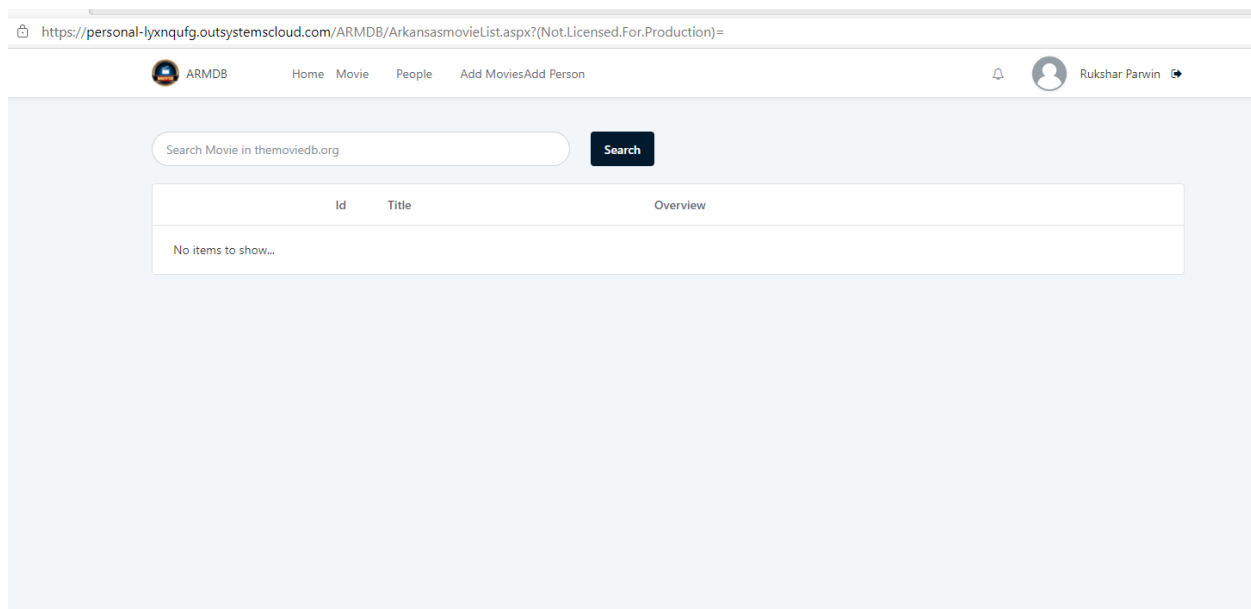


All user has to do is type in text box in the form and click on search and if search criteria match the movie in the movie database, the list will appear in grid view. For example, typing "Ark" in the search text box and clicking on "Search", the results are as shown in following screen:

| Id | Title | Overview | |
|---|---|---|---|
| 328426 | The Ark | Noah, a farmer and family man, is instructed by an angel to build an ark in the middle of a desert in order to save both his family and the faithful from a devastating flood. A seemingly impossible task, especially when his sons refuse to believe him and help, Noah risks ridicule and humiliation from the degenerate townsfolk as well as his loving but exasperated family, in his quest to carry out his God-given task. | Add |
| 85 | Raiders of the Lost Ark | When Dr. Indiana Jones – the tweed-suited professor who just happens to be a celebrated archaeologist – is hired by the government to locate the legendary Ark of the Covenant, he finds himself up against the entire Nazi regime. | Add |
| 35715 | Ark | The population of the planet Alcyone is split in two; the cultures of the Ceveans and the Storrions are locked in eternal war, destroying their home. Led by their priestess Amiel, the Ceveans constructed the Ark in an attempt to flee their world, but the Ark was ceased by the Storrions, enslaving some of the Ceveans and banishing the rest to the wastelands. | Add |
| 104430 | Noah's Ark | The Biblical story of Noah and the Great Flood, with a parallel story of soldiers in the First World War. | Add |
| 37440 | Monster Ark | Archaeologist Nicholas Zavaterro and his student find an antique vase with an inscription that points to where Noah's Ark is hidden. They decide to go looking, but things get out of control when they encounter opposing forces, including a monster named Tama. | Add |
| 471254 | Anote's Ark | How does a nation survive being swallowed by the sea? Kiribati, on a low-lying Pacific atoll, will disappear within decades due to rising sea levels, population growth, and climate change. This exploration of how to migrate an entire nation with dignity interweaves personal stories of survival and resilience. | Add |
| 588772 | Ark at 8 | Inspired by Noah's Ark, three penguins attempt to board the historical ship when they discover that only two creatures from each species are allowed. | Add |
| 13001 | Stargate: The Ark of Truth | SG-1 searches for an ancient weapon which could help them defeat the Ori, and discover it may be in the Ori's own home galaxy. As the Ori prepare to send ships through to the Milky Way to attack Earth, SG-1 travels to the Ori galaxy aboard the Odyssey. The International Oversight committee have their own plans and SG-1 finds themselves in a distant galaxy fighting two powerful enemies. | Add |
| 74542 | Noah's Ark | The Biblical story of Noah's ark full of animals gets the Disney treatment in this animated short. | Add |
| 102381 | Noah's Ark | God is planning to flood the world, but he doesn't want this to be the end, he wants to make sure that it can be re-populated when the floodwaters recede. So he calls on Noah and tells him to build a boat, a boat big enough to carry two members - one male, one female - of every animal species on earth. Noah complies and when the rains begin, he and his family round up the animals and commence their voyage. | Add |

OutSystems Rapid Application Development tool is used to develop this functionality, On button click event, I am consuming "GetMovie" API provided by https://api.themoviedb.org and binding results from this API to table record widget.

Add functionality is added to save record in Arkansas database. It is consuming two entities to save data, namely "ArkansasMovie" entity and "Image" entity. These entities have following attributes:
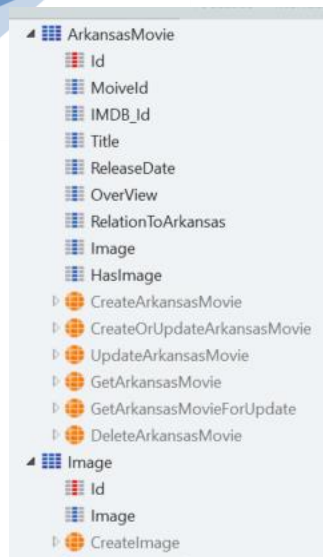
Note: IMDB_Id attribute in Arkansas movie table is used to fetch individual movie from https://api.themoviedb.org.

Once movie button is clicked a pop up will appear to add movie in entity.

Overview

Noah, a farmer and family man, is instructed by an angel to build an ark in the middle of a desert in order to save both his family and the faithful from a devastating flood. A seemingly impossible task, especially when his sons refuse to believe him and help, Noah risks ridicule and humiliation fro...  ...uest to carry out his God-given task.    Add

When Dr. Indiana J...  ...ogist – is hired by the government to locate the legenda... rk    Add

The population of t...  ...e locked in eternal war, destroying their home. Led by their...  ...d, but the Ark was ceased by the Storrions, enslaving...    Add

The Biblical story o...    Add

Archaeologist Nich...  ...s to where Noah's Ark is hidden. They decide to go looki...  ...a monster named Tama.    Add

How does a nation...  ...ppear within decades due to rising sea levels, population g...  ...ith dignity interweaves personal stories of survival a...    Add

Inspired by Noah's...  ...only two creatures from each species are allowed.    Add

SG-1 searches for a... ...the Ori's own home galaxy. As the Ori prepare to send ships through to the Milky Way to attack Earth, SG-1 travels to the Ori galaxy aboard the Odyssey. The International Oversight committee have their own plans and SG-1 finds themselves in a distant galaxy fighting two powerful enemies.    Add

The Biblical story of Noah's ark full of animals gets the Disney treatment in this animated short.    Add

God is planning to flood the world, but he doesn't want this to be the end, he wants to make sure that it can be re-populated when the floodwaters recede. So he calls on Noah and tells him to build a boat, a boat big enough to carry two members - one male, one female - of every animal species on earth. Noah complies and when the rains begin, he and his family round up the animals and commence their voyage.    Add

Noah, his family (wife, 3 sons, their wives), and various animals all help build the ark. The rains come, and the skunks barely miss the boat

---

**Add Movie to Arkansas movie list**    ✖

**Movie Name:**    **The Ark**

**Overview:**    Noah, a farmer and family man, is instructed by an angel to build an ark in the middle of a desert in order to save both his family and the faithful from a devastating flood. A seemingly impossible task, especially when his sons refuse to believe him and help, Noah risks ridicule and humiliation from the degenerate townsfolk as well as his loving but exasperated family, in his quest to carry out his God-given task.

**Relationship to arkansas:**

Add   or close

---

We can define relationship to Arkansas by adding text next to 'Relationship to Arkansas' in a text box. Add person functionality works very similar way. Person can be added to person entity by navigating to following page:

By typing person name and clicking on search button person list will appear as shown below:



A person can be added by clicking on Add button, here once again we can define relationship to Arkansas by entering on popup text box. We can also add image from this popup as shown:

| Gender | Known for department | Name | |
|---|---|---|---|
| 2 | Acting | Dan Castellaneta | Add |
| 2 | Acting | Dan Aykroyd | Add |
| 2 | | | Add |
| 1 | | | Add |
| 2 | | | Add |
| 2 | | | Add |
| 2 | | | Add |
| 2 | | | Add |
| 2 | Acting | Dan Fogler | Add |
| 2 | Acting | Dan Stevens | Add |
| 2 | Acting | Dan Benson | Add |
| 2 | Acting | Dan Hedaya | Add |
| 2 | Writing | Dan Harmon | Add |

Here Arkansas person entity is used to store person information.



On clicking "Search" button, the application is consuming "GetPerson" API provided by https://api.themoviedb.org and binding result of this API is stored to table widget in Outsystems platform.

Finally, for the public interface to this website, there are three menu items for any user. This functionality doesn't require any access and is open to all the users. The three menu items are 1) Home, 2) Movie and 3) People. By clicking "Home" menu I can access all movie and person stored in the database. This also has a search functionality to search person or movie in the database. In below example, I typed "da" and clicked on "Search". The search criteria doesn't yield any movie result as there are not movies in the database with "da". However it returns information about 6 actors that has the keyword used for search.
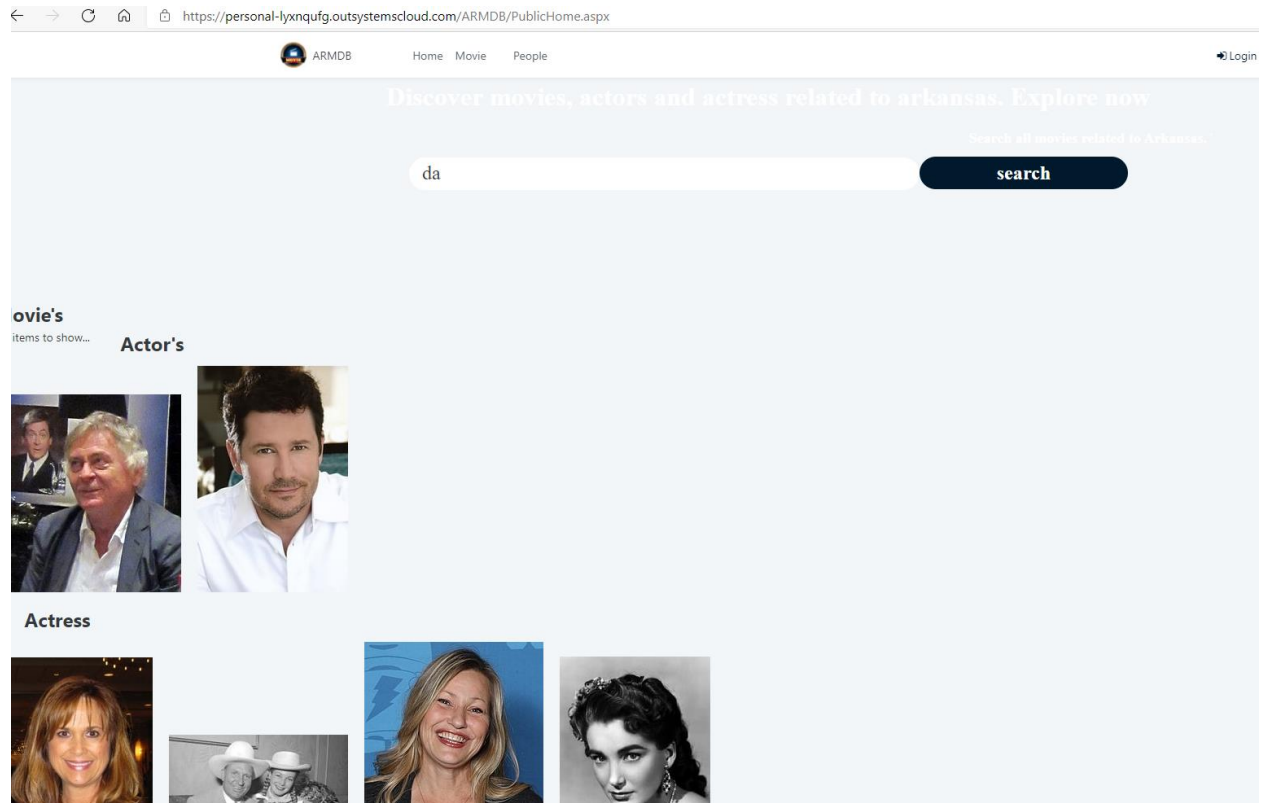


The home page for the website can be accessed using this link PublicHome (personal-lyxnqufg.outsystemscloud.com) and below is the screen capture of home page:
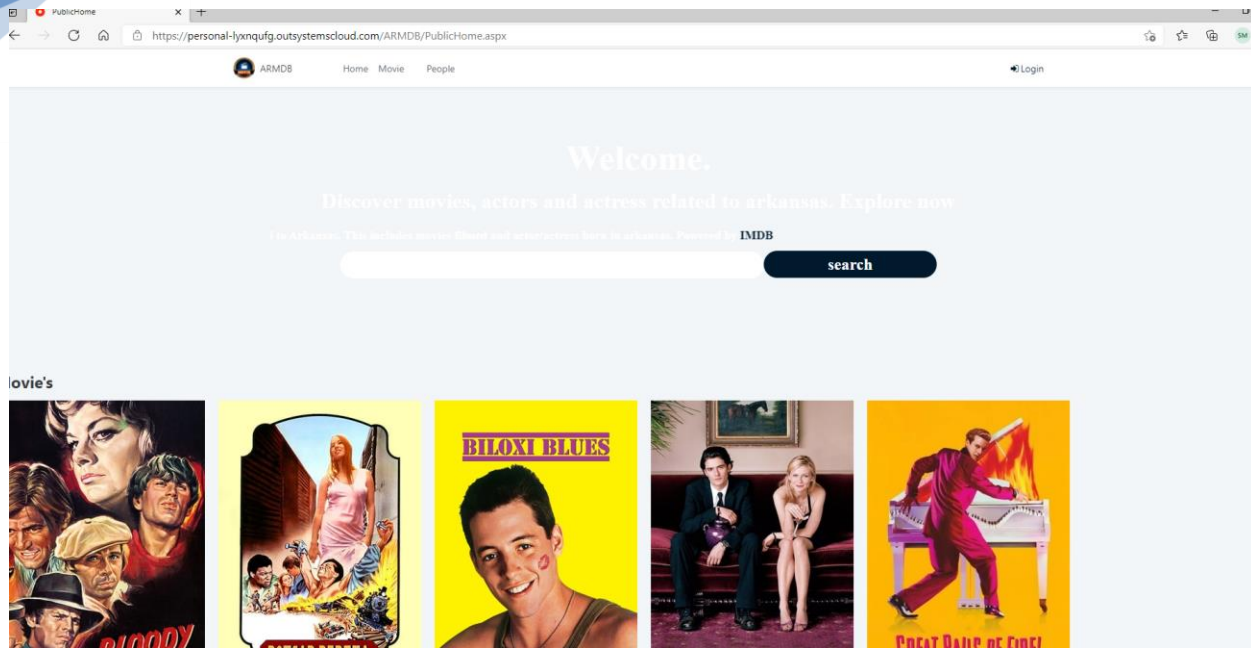
By clicking on image, we can navigate to detail for specific person or a movie. "GetMovie" and "GetCredits" API are consumed by passing individual ID stored in the database. The move or the person details are being displayed in [MovieDetails (personal-lyxnqufg.outsystemscloud.com)](https://personal-lyxnqufg.outsystemscloud.com)
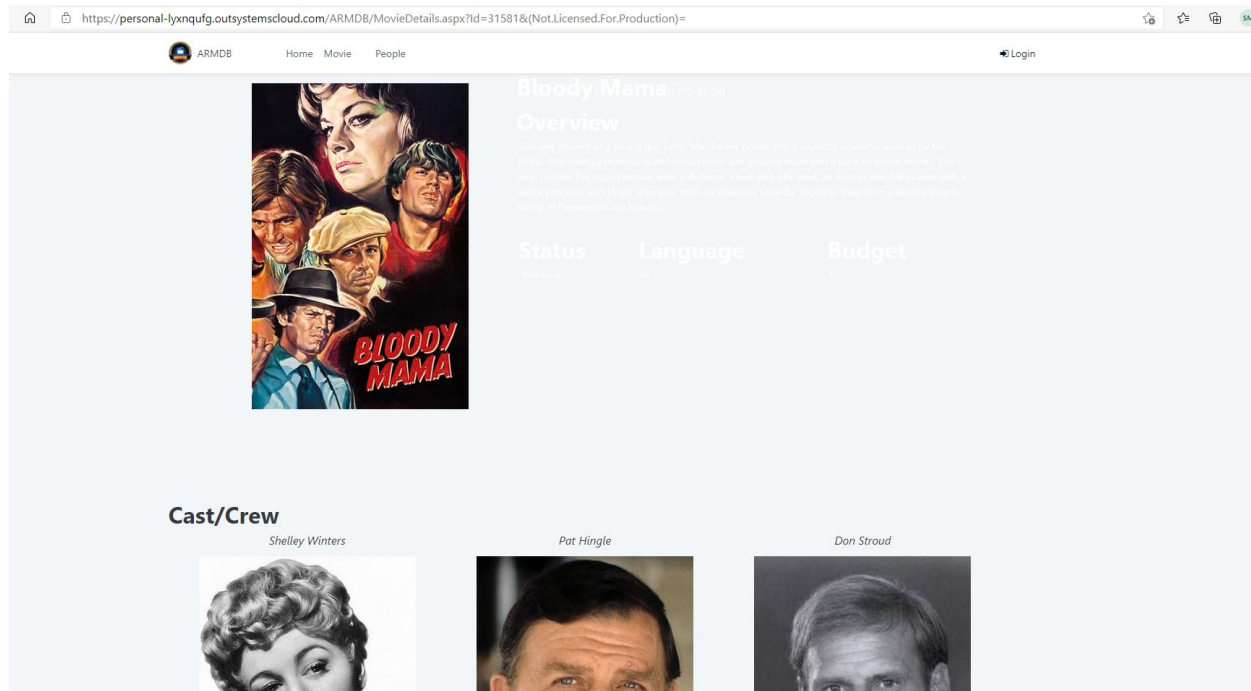


This also has "Movie" and "People" menu where Arkansas related person and movie list is displayed

https://personal-lyxnqufg.outsystemscloud.com/ARMDB/ArkansasMovies.aspx?(Not.Licensed.For.Production)=

ARMDB     Home   Movie    People        Login

Search Movie in arkansas movie database    **Search**

| Title | Over View | Relation To Arkansas |
|---|---|---|
| Mud | Two boys find a fugitive hiding out on an island in the Mississippi River and form a pact to help him reunite with his lover and escape. | Film shot in Arkansas |
| So Sad About Gloria | A young woman just released from a mental hospital moves back in with her family. However, she is soon troubled by disturbing visions in which she commits a series of axe murders. | Film shot in Arkansas |
| Great Balls of Fire! | The story of Jerry Lee Lewis, arguably the greatest and certainly one of the wildest musicians of the 1950s. His arrogance, remarkable talent, and unconventional lifestyle often brought him into conflict with others in the industry, and even earned him the scorn and condemnation of the public. | Film shot in Arkansas |
| Sling Blade | Karl Childers is a mentally disabled man who has been in the custody of the state mental hospital since the age of 12 for killing his mother and her lover. Although thoroughly institutionalized, Karl is deemed fit to be released into the outside world. | Film shot in Arkansas |
| The Legend of Boggy Creek | A documentary-style drama based on true accounts of the Fouke Monster in Arkansas, Boggy Creek focuses on the lives of back country people and their culture while chronicling sightings of the monster. | Film shot in Arkansas |
| Brüno | Flamboyantly gay Austrian television reporter Bruno stirs up trouble with unsuspecting guests and large crowds through brutally frank interviews and painfully hilarious public displays of homosexuality. | Film shot in Arkansas |
| Biloxi Blues | During the Second World War, Eugene enlists in the US Army during the last year of the War and is sent to basic training in Biloxi Mississippi. There he must live with a | Film shot in Arkansas |

https://personal-lyxnqufg.outsystemscloud.com/ARMDB/AKPerson.aspx?(Not.Licensed.For.Production)=

ARMDB     Home   Movie    People        Login

   **Search**

| Name | Gender |
|---|---|
| Alan Ladd | Male |
| Arthur Hunnicutt | Male |
| Ben Dickey | Male |
| Ben Murphy | Male |
| Billy Bob Thornton | Male |
| Bob Burns | Male |
| Brandon Keener | Male |
| Camille Keaton | Female |
| Carolina Cotton | Female |
| Chester Lauck | Male |
| Clark Duke | Male |
| Clark Duke | Male |
| Corin Nemec | Male |

By click on person name we can navigate to person details which is calling API.

Movie image can be added by clicking on Overview which requires admin access. Access to a specific movie is done through clicking on the movie title.

# Testing

The following testings' were done to make sure website is functional:

1. Manual Unit testing
2. Functional test
3. End User test

**Manual Unit Test**

During development, each component were debugged and tested to make sure methods are returning values as expected. API was consumed manually to make sure its returning correct results. To resolve any failure during testing I raised query in themoviedb forum support and the suggestions in the forum helped in resolving issues.

Below link provides the communication details with the support forum:
https://www.themoviedb.org/talk/60229a43ea37e0004140c5b7

**Functional Test**

Once the manual testing was complete and each component started functioning as expected, functional testing was the next step. This includes browsing application as admin role and as anonymous role.

During the test with admin role, test was done to ensure to add a movie, person image and with anonymous role, test was conducted to make ensure there is no admin functionality accessible.

**End User Test**

In this phase, functionality such as add and search movie name and person name was tested. This step also involved adding movie in the database. Each component of the website such as images and movies were clicked to make sure correct information is retrieved. Relationship to Arkansas was added and tested to make sure the information is displayed in the page.

Once the admin functionality test was complete, anonymous user testing was conducted which included navigation in home page, movie and person details tab and to browse all movie related to Arkansas.

## Operationalization Steps

Here are some of the steps that the end-client will need to take, to make this website operational:

1) Web hosting platform – The client will need to acquire a domain name and professional version of OutSytems platform will be required for hosting.

2) Instructions needed for setting up the production website - Navigation instructions as listed in "User Interface" section lists the details required to set up the website.

3) Resources are needed to keep the website up to date - Admin resource to manage content of website will be needed to keep the website updated with the latest information.

## Communications Strategies Employed During the Development

During the development phase, close communication with instructors were maintained via email and class participation and presentation. The inputs were tremendously helpful to achieve the current state of the website.

## Attribution

Following steps were taken to ensure the website correctly attributes the use of TMDB APIs.

1) TMDb logo is used to identify use of the TMDb APIs.

2) The following notice is prominently on the application: "This product uses the TMDb API but is not endorsed or certified by TMDb."

# Future Work

Capturing movie information and creating tags to display movies or actors related to the Arkansas with an easy, user friendly interface was an achievable task. There are areas where professional skills and experienced minds will be needed. Besides, this basic system can be expanded to include other dimensions to provide a comprehensive system for Arkansas Movie lovers and filmmakers who might need other information while researching for movies and/or actors in Arkansas.

Currently the tags system doesn't have a consistent data format. It is a text field which can store any type of information that admin would like to use as a tag. The inconsistent data format may result in incomplete information. Consistency will be achieved by adding data rules to the system.

The website can also be expanded to group movies based on what connection it has to Arkansas. The website can also be scaled by regions.

# Conclusion

In this project, the main objective was to develop the website keeping in mind that it is intended to provide research kind of platform and to understand diversity of landscape. Each of the filmmakers who are interested in filmmaking in Arkansas depends on external sources to understand the landscape, movies that were shot here, and the actors who have ties to Arkansas. Filmmakers usually have high investments in this kind of project, and they may be interested to find out details on the location, incentive they may be able to get etc. Absence of central website promoted by Arkansas Film Commission makes this process costly and inefficient – and the information they may collect are prone to error. This can cost state of Arkansas unrealized revenue that it may lose and the potential job creation for the local talents in the state of Arkansas.

When the project was started, the problem I was trying to solve was to come up with an easy-to-use technology that can develop a functioning website. OutSystems provides the most complete full-stack application development platform that can quickly create mobile and web applications, chatbots, and reactive web apps for any device. The most appealing feature using OutSystems was the Drag-and-drop UI, business processes, logic, and data models to create full-stack, cross-platform apps with the option of adding your own code when needed.

Second objective was to make the website online and ready for the use. Accuracy of the information requested was also been in focus of the system. The system presented will provide those benefit and implementation developed will also solve problems such as data accessibility, easy to use interface, and centralizing all the information.

# Tools and Technology

1. OutSystems – Personal Edition