**Sept 13th, 2024**

Chuckwoo Pack

1440 N Campus

Dr Brookings, SD 57006

**Subject: Thank You for Considering BPU Software Solutions**

Dear Dr Pack,

Thank you for selecting BPU Software Solutions for your software development needs. We truly appreciate the opportunity to work with you and are confident in our ability to deliver a high-quality solution tailored specifically to your business requirements.

Based on our experience for about 8 years, our team has been a leader in the software development industry, continuously advancing and refining our skills to offer cutting-edge solutions. We are committed to working closely with you throughout the entire process, ensuring that the final product exceeds your expectations. We encourage open communication and invite you to stay connected with us, not just during development, but also after the project’s completion.

Based on our initial assessments, the estimated cost of this project is **$89,250**, though this is subject to minor adjustments as we progress. We will keep you informed of any changes in cost along the way to ensure transparency. If everything proceeds as planned, we anticipate delivering the final product by **mid-December 2024**.

We are committed to delivering your product with guaranteed quality, keeping in mind the necessary human resources, hardware, and software specifications. Based on our current timeline, we anticipate the project will be completed and delivered by mid-December.

If you have any further questions or would like to discuss the project in more detail, feel free to reach out to us at BPUssolution@gmail.com. We are dedicated to providing you with the best possible product tailored to your needs and expectations.

We look forward to working with you and ensuring your complete satisfaction.

Best regards,

CEO [Ujjwol Pudasaini]  
BPU Software Solutions

**Movie Recommendation System**

**A Software Proposal**



BPU Software Solutions

Bidhyasagar Paudel, Pralesh Rayamajhi, Ujjwol Pudasaini

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**First Edition**

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Scope

The Movie Recommendation System aims to provide users with personalized movie recommendations based on their past viewing history and preferences. By utilizing content filtering techniques, the system will analyze movie metadata such as genre, director, cast, and keywords to recommend movies that align closely with the user’s interests. This approach helps users discover movies they are likely to enjoy, improving their overall experience with the platform.

Background

The proliferation of streaming platforms has resulted in vast movie libraries, making it difficult for users to find movies that match their tastes. To solve this problem, recommendation systems are implemented to offer personalized movie suggestions. Content-based filtering is a widely used technique in such systems, which recommends items similar to those a user has liked in the past. This project leverages the content filtering method by focusing on the metadata of movies to provide relevant recommendations, enhancing the user experience and engagement.

Solution

The proposed solution will be a **Movie Recommendation System** that uses **Content Filtering** to deliver personalized recommendations. The system will analyze movie attributes such as genre, director, cast, and keywords to find similarities between movies. By comparing these attributes with movies that the user has previously liked or rated highly, the system will suggest new movies that align with their preferences.

Additionally, the system will use Singular Value Decomposition (SVD) to enhance the content filtering process by identifying latent features in the user-movie interaction matrix. This hybrid approach will combine both explicit metadata filtering and implicit patterns found through SVD, resulting in more accurate and diverse recommendations.

Software Company and Organization Chart

This system will be developed by **BPU Software Solutions**, an experienced company in building recommendation engines and data-driven solutions. The development team consists of:

* **CEO:** Ujjwol Pudasaini
* **Project Manager:** Bidhyasagar Paudel
* **Lead Software Engineer:** Pralesh Rayamajhi Each team member brings years of experience in software development, machine learning, and data processing, ensuring the successful delivery of the movie recommendation system.

Plan

The development of the Movie Recommendation System will be divided into several phases:

1. Requirement Gathering: Understand user needs and system requirements.
2. Data Collection and Preprocessing: Collect movie metadata and user interaction data.
3. Algorithm Development: Develop the content filtering algorithm combined with SVD.
4. System Integration: Integrate the algorithm with the user interface.
5. Testing and Validation: Perform unit testing and validation of the recommendation system.
6. Deployment: Deploy the system on the cloud for scalability.

Documentation Plan

The documentation will cover all technical aspects of the project, including system architecture, data models, algorithms, and deployment instructions. Comprehensive user guides will be provided to ensure that both technical and non-technical stakeholders can understand and interact with the system.

Data Management Plan

* Data Sources: Movie metadata will be collected from external APIs (e.g., IMDb) and user interaction data will be gathered from the platform's database.
* Data Storage: Data will be stored in a relational database, enabling easy querying and updating.
* Data Processing: Metadata and user ratings will be processed to create a user-movie matrix, which will be used to generate recommendations via content filtering and SVD.
* Data Privacy: User data will be anonymized and handled in accordance with data privacy regulations such as GDPR.

Risk Management Plan with Contingency

Potential risks include:

* Data Inaccuracy: Incomplete or inaccurate metadata may lead to poor recommendations. A validation process will ensure data quality.
* Scalability Issues: As the user base grows, the system must handle large datasets. The system will be deployed on a scalable cloud infrastructure to mitigate this risk.
* User Engagement: Poor recommendations could lead to low user engagement. To address this, regular feedback from users will be incorporated to improve the recommendation accuracy.

Security Plan

Security is a top priority for the system. The platform will implement:

* Data Encryption: All user data and movie metadata will be encrypted during storage and transit.
* Authentication and Authorization: Users will be required to authenticate via secure login protocols.
* Access Control: Only authorized personnel will have access to the system’s backend

Server Selection

The system will be hosted on a cloud-based infrastructure, such as Amazon Web Services (AWS) or Google Cloud Platform (GCP), ensuring flexibility, scalability, and reliability. The server will handle data storage, processing, and recommendation delivery to users.

Milestone

Critical Path Analysis

Gantt- Chart (Project Schedule)

Deliverables

* Movie Recommendation Engine: A fully functioning recommendation engine using content filtering and SVD.
* User Interface: A user-friendly interface where users can view and interact with movie recommendations.
* Documentation: Complete technical and user documentation.
* Test Results: A detailed report on testing and validation of the system.

Estimates

The estimated cost of developing the Movie Recommendation System is $89,250. This includes costs for development, testing, deployment, and ongoing support. The project is expected to be completed by mid-December 2024.

Terms of Acceptance

The project will be considered complete when the following conditions are met:

1. The recommendation system is fully functional and delivers accurate results.
2. The system passes all validation and testing phases.
3. All deliverables, including documentation, are handed over to the client.

Warranty

BPU Software Solutions offers a 6-month warranty period after deployment. During this time, any bugs or issues related to the system will be resolved at no additional cost.

Terminology

Log of Meetings and Review Process