**PROJECT REPORT**

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**DECLERATION BY STUDENTS**

We hereby declare that this Project Report is an authentic record of our own work .This is our own study done under the guidance of our respected mentor Mr. MPS Bhatia. We hereby declare that the contents of this report are true and performed with the best of our abilities.

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**ABSTRACT**

Currently there exists various desktop applications that recommend recreational video games to users. In our project we are trying to build a light and stable online system. This system using machine learning will recommend recreational video games to the user on the basis of his past data, likes/dislikes, interests etc.

Generally these systems are implemented using python but in our project we are using recently developed and superior development tool called MEAN( Mongodb, Node.js, Express.js, Angluar.js ). This technology helps us build faster and more scalable server side applications.

The user shall initially give us his/her interests, on basis of these interests and future purchases our system will be able to judge the likes and dislikes of the user and therefore recommend various recreational video games to the user.

**LEARNINGS**

1. **Node.js**® is a JavaScript runtime built on [Chrome's V8 JavaScript engine](https://developers.google.com/v8/). Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient. Node.js' package ecosystem, [npm](https://www.npmjs.com/), is the largest ecosystem of open source libraries in the world.
2. **Express** is a minimal and flexible Node.js web application framework that provides a robust set of features for web and mobile applications.
3. **MongoDB** is a [cross-platform](https://en.wikipedia.org/wiki/Cross-platform) [document-oriented database](https://en.wikipedia.org/wiki/Document-oriented_database). Classified as a [NoSQL](https://en.wikipedia.org/wiki/NoSQL) database, MongoDB eschews the traditional table-based [relational database](https://en.wikipedia.org/wiki/Relational_database) structure in favor of [JSON](https://en.wikipedia.org/wiki/JSON)-like documents with dynamic [schemas](https://en.wikipedia.org/wiki/Database_schema) (MongoDB calls the format [BSON](https://en.wikipedia.org/wiki/BSON)), making the integration of data in certain types of applications easier and faster.
4. **AngularJS** :HTML is great for declaring static documents, but it falters when we try to use it for declaring dynamic views in web-applications. AngularJS lets you extend HTML vocabulary for your application. The resulting environment is extraordinarily expressive, readable, and quick to develop.
5. **Machine Learning**: It is needed to develop an algorithm that shall learn from the user’s data and hence understand his/her likes and dislikes.

**Design and Front-end**

1. **Bootstrap** - Bootstrap is the most popular HTML, CSS, and JS framework for developing responsive, mobile first projects on the web.(<http://getbootstrap.com/> )
2. **Jade** - Jade is a terse language for writing HTML templates.
   * Produces HTML
   * Supports dynamic code
   * Supports reusability (DRY)

([http://jade-lang.com](http://jade-lang.com/))

1. **Credit Card Icons** - (<http://www.smashingmagazine.com/2010/10/21/free-png-credit-card-debit-card-and-payment-icons-set-18-icons/>)
2. **jQuery Raty** - A star ratings plugin(<https://github.com/wbotelhos/raty> )
3. **Game information** - Parsed from Gamespot.com and Amazon.com
4. **jquery.meow** - javascript notifications when rating a game(<http://zacstewart.com/Meow/> )
5. **jquery.validate** - This jQuery plugin makes simple clientside form validation easy, whilst still offering plenty of customization options(<http://jqueryvalidation.org/> )

**Features Included in Project**

1. Personalized game recommendations based on the rating / purchase patterns of similar users
2. Profile with XBOX 360 achievements, rating system, custom signup and login components
3. Custom comments system, store purchases, YouTube trailer previews

**Softwares Used**

1. JetBrains IntelliJ IDEA 12
2. GitHub

**Database Details**

We are using MongoDB to implement our database

Following are mentioned various schemas that shall be used to design the database

* In Mongoose everything is derived from Schema. Hence we create the following three schemas:

1. User Schema: This has the following fields:
   * userName
   * Password
   * firstName
   * lastName
   * Email
   * joined\_on
   * Interests
2. Game Schema: This will have the following fields:
   * Title
   * Publisher
   * largeImage
   * releaseDate
   * Genre
   * Summary
   * Description
   * Price
   * Youtube
   * Rating
   * votedPeople
   * purchaseCounter
3. Comment Schema: This will have the following fields:
   * Body
   * User
   * Game
   * Date

**Algorithm**

Presently we are at our initial stages of learning the concepts of Machine Learning.

We did try and formulate a naïve algorithm to solve the issue at hand. It’s as

Follows :

if user purchased Games < 1

display 6 games based on interests

sort by the highest rating of peers (rated games)

Else

display 3 games based on interests

sort by the highest rating of peers

display other 3 games based on the genres of purchased Games

sort by the highest rating of peers (purchased games)

**CONCLUSIONS**

The functions to be performed by our Game recommendation System other than recommending games are

* Record the details of an user and allow the user to view and modify it as he pleases.
* The system is very user friendly and is easily accessible to the user.
* It is responsive, quick and secure and has a high storage capacity allowing at least 5 users to simultaneously access their inventory lists.

**Deliverables expected**

**Accuracy:**

The Game Recommendation System gives the user a quick response with very appropriate suggestions.

**User-Friendly:**

The Game Recommendation System has a very user-friendly interface. The system can be learnt just by simply using it a few times. The software provides accuracy along with a pleasant interface.

**Scalable:** The project is scalable. Hence it can be expanded easily, without any complications.