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Design of an Online Book Rating/Ranking System

Nwachukwu Nwokeafor K.C, Igbajar Abraham

Computer Engineering Department, Michael Okpara University of Agriculture, Umudike

Nwachukwuken7@gmail.com, Igbajar35@gmail.com

ABSTRACT

Over the years there have been a great need of easy and fast means of identifying and reading relevant and resourceful books, without having to stumble over too many cumbersome books that may be time wasting has been a challenge. Lecturers and students can see the highest rated books to know what to go for, library authorities may also find it helpful.

The Michael Okpara University of Agriculture, Umudike, book ranking system is a method for calculating the relative and qualitative/useful contents contained in a book over another.

This online book rating system is a system used on books, to estimate the relevant materials in a book over others, based on readers' perspective or how helpful the book was to the reader. They can be used by institutions, government agencies, Teachers/lecturers and students. The systems is used to determine the best book to go for based on the view of readers and how useful it have been to the user. This paper focuses attention on an online system that provides the functionality that enables user/readers to rate a book with respect to it helpfulness to them. The system is web based and it is developed using "php programming language" as the front-end (graphical user interface), then MySQL data base at the back end to store information about the book rate. The result shows that a viable system has been achieved.

Keywords: PHP, SQL, ODB, Html, JQuery, DB Table

1. INTRODUCTION

The work Software Rating/ranking SYSTEM provide concise and objective information about the content in books, journals, manual etc, so readers, especially students, can make informed choices. The ratings software have three parts. A rating system is designed to use this available information with regards to peculiar area of user need and to make valid estimations about the unknown parameters tand options of the users. Rating systems are also used for predicting future encounters, and are profitable when correct predictions are rewarded, like betting on the winner of a tennis match. An accurate rating system that can foresee better than other parties can surely make great impact on education and research. This need for rating is present in educational and research area and it is often encountered in many other areas, from educational systems to ranking web pages/books.

A rating system provides fun, opinion poll for the participants. And the system is fun and helpful when the outcome is assisting the readers to make quick decision and when the participant are rating from their experience of a particular book,at work. Succeeding in a challenging rank feels very rewarding when viewing, and individuals usually enjoy it and find it beneficial as well.

1.2 BACKGROUND OF THE STUDY

The percentage of book that is ranked high says something about the participants and about the book. One can get a very high percentage just by choosing a book. Naturally, we aim to make decision on the unknown by being guided by majority decisions out of their experience, a fitting example is like using the audience options in "who want to be a millionaire. Ideally, increasing the star rate of a book per each participant would bring balance and help readers make a better choice, and if most of the participant would be near a 50% ratio, the ranking by win percentage would not be informative.

1.3 OBJECTIVE OF THE WORK

Rating systems implement appropriate algorithms for setting the parameters in the models devised, in order to obtain comparable (preferably better) performance which will guide researchers on which book to read first. This paper propose a suitable system that will help feel in this need. The target of this project is to evaluate the efficiency and efficacy of developing online book rating.

Book ratings give parents, Researchers, Lecturers and students' alike, important information about books, content and richness, but it's ultimately up to one to decide whether a book is suitable for a desired research work. This rating system has been designed to help guide researchers when selecting books etc. This system ratings could be a guideline for setting standards, particularly the rating descriptors that give more detailed information on why the book is in that rating category.

1.4 STATEMENT OF PROBLEM

There can be no doubt that much of the books in this area speculates on the future role of safe means (mini-library) none of which is particularly clear. Since (1995). Designing an air-tight and reliable rating system is therefore a great task, in that, the system that must be developed must be accurate and not easily manipulated. It came about as a result of the findings of a study of the rating process of an institution. Online book rating system will endeavour to make rating on books easily accessible and help students choose the most beneficial books.

1.5 SCOPE OF THE WORK

The work can be implemented as a standalone site (recommended) or can also be embedded in an already existing institution official website. When different books that are related in topics and discussion are posted, they will have an option of rating by some participants from the general public who must have read the books and rate in favour of the one that is more useful to them. This rating is done and incremented using conditional statements and probability. For the Sake of this paper, the system will be hosted locally with wampserver. However this paper does not cover how to host a website in online server.

2.1 LITERATURE REVIEW

Over the years the word have attempted into the adventure of providing a suitable rating system for best performance competitors, one of such was recommender, according to Jan Boehmer, Yumi Jung, and Rick Wash (2013)Recommender systems are a vital part of today's information society to deal with information overload, especially in e-commerce. Recommender systems help retailers to choose items to display based on customers' preferences, help users to search for items in personalized ways, and help streaming services create customized playlists. The introduction of the PG-13 rating in 1984 expanded the scope of the

rating system. Not intended to be tied to any specific age, the rating is a stronger note of caution suggesting to parents to further investigate the content of the motion picture before allowing their children to see it. Through these changes, our mission remains the same: to inform parents about the content of the many great movies released every year. This hope to provide parents with a useful social service, while allowing filmmakers to connect meaningfully with appropriate audience e.t.c.

3.1 METHODOLOGY

For the sake of this project we will adopt the Iterative and Incremental model:

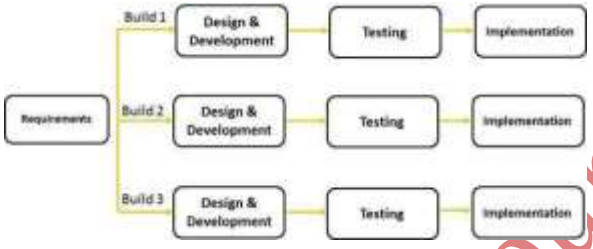

Fig. 3.2 A typical Iterative model diagram (Tutorial Point, 2015)

Iterative model diagram model is most often preferred, however, in the following scenarios:

- Requirements of the complete system are clearly defined and understood.
- Major requirements must be defined; however, some functionalities or requested enhancements may evolve with time.
- There is a time to the market constraint.
- A new technology is being used and is being learnt by the development team while working on the project.
- Resources with needed skill set are not available and are planned to be used on contract basis for specific iterations.
- There are some high risk features and goals which may change in the future.

3.2 DESIGN

This paper presents a simple hypothesis testing procedure to verify the quality of probability of default estimates

The paper is organized in sections. One of such is statistical framework forming the basis of a Default generating process using binomial distribution is briefly reviewed, then we derive the probability of default to be associated with a single "option" rating of a major rating agency and the paper also discusses several approaches to checking whether the performance of a certain rating source is equivalent to a single "option" rating or its equivalent in terms of probability of default as determined earlier. This is done by means of their realized default frequencies.

This quantity is used in the rating calculations and the effective number of star rating conveys the approximate reliability of a rating on the scale of a rate count.

For each participant, let N be the number of star a book has, or for unrated book, the value assigned from Step 1 of the algrithm. Let $R0$ be the book.

3.3 RATING ALGORITHM

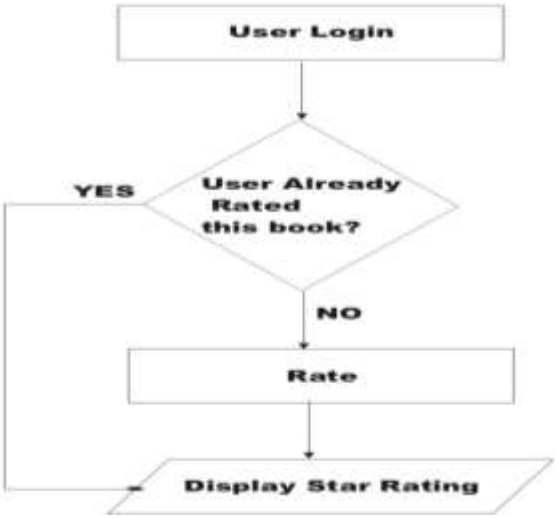

Fig 3.1 Flow chart of the rating system

The flowchart above represents the working of the system, this shows that a user cannot rate the same book more than once as the opinion or choice of a particular user can only be one not multiple. A user must login to rate, the system will now analysis and check if the user has rated that particular book before, if "yes" the system will display the star progress, if "No the system will enable the user to rate and immediately after rating the system will display the star progress rating for that book. It can be summarized by the probability formula such that,

Probability is the measure of how likely an event is. And an event is one or more outcomes of an experiment. Probability formula is the ratio of number of favorable outcomes to the total number of possible outcomes.

$$P(A) = \frac{Number\ of\ favorable\ outcomes}{Total\ number\ of\ possible\ outcomes} \quad \text{--------(1)}$$

Measures the likelihood of an event in the following way:

- If P(A) > P(B) then event A is more likely to occur than event B. ----------(2)
- If P(A) = P(B) then events A and B are equally likely to occur ----------(3)

(Probability Formula, http://www.probabilityformula.org/#)

The estimation is done in the context of all the other factors: when we multiply all of them together, the posterior distribution that summarizes the other factors will become very compact. Its variance would be very small, compared to any single likelihood term. When we make our approximation for one term, we are interested in its product with the summarizing posterior constructed using information from the other factors. Thus, we do not need to capture all the details in every individual likelihood function, all we really need to get a good approximation is to represent very well the zone that overlays with the posterior.

4.1 SYSTEM IMPLEMENTATION AND TESTING

The rating system was implemented using webserver. The software components of the GUI screens serve as the front-end. The database was implemented using MYSQL. The system was tested will be tested with a set of book from the book online store.

The design perform the following prior to project completion:

- Review and approve submittals from relevant materials during design;
- visually review the results of the rating process
- Review final the final documents, including but not limited to the operations

I applied if then statement (decision) for inferring the skills of the software, and the equations for a multiple factors model.

Fig 4.1 Star rating

Fig 4.2 the output Design

The star of any book is incremented as each participant is clicking or rating in favour of the book, the star progress is under the book icon, and the participants that has participated can only see the star progress and cannot be able to see the option of rate.

4.2 AUTHENTICITY

Each person can participate just once in the rating process.

The system can ensure that by allowing each registered user to rate only once. The participants have to Log in with their username and password to cast the rate. The person would then be Expected to provide a username and password known only to him during Registration, if the articipant is eligible then the login will be successful but if the User is not eligible it will bounce back with an error message.

The system is designed in such a way that the database is managed effectively.

This allows users' data to be retrieved, added, updated, deleted, sorted and traversed easily and quickly.

Data is also stored with regard to the user choice results and other information relevant to the system.

Implementation of controls to avoid double Rating:

User identification and access control functionalities are built into the system so as to guard against double rating from same user on same book. Also, these features would help to prevent anyone without the proper authorization to gain access into the system. This means that user who attempts to rate second time will be denied access as prompted by the system.

4.3 SOME CODES TO CHECK IF THE USER HAS RATED ALREADY:

```
session_start();
if ((isset($_SESSION['hasRated']))) {
//Already rated
}
else {
//Process the rate
}
```

4.4 SECURITY AND AUTHENTICITY:

The system is allowed the Preparation and printing of various reports, ranging from user Registration details to rating Results. Provision of personalized portal to all registered user:

Some of the codes Includes;

```
<FORM NAME ="form1" METHOD ="GET"
ACTION ="process.php">

<?PHP print $question; ?>
<P>
<INPUT TYPE = 'Radio' Name ='q' value= 'A'
<?PHP print $answerA; ?>><?PHP print $<img
src=”images/odega.jpg” width=”12
height=”12”>Odega Andrew Chinedu; ?>
<P>
<INPUT TYPE = 'Radio' Name ='q' value= 'B'
<?PHP print $answerB; ?>><?PHP print $<img
src=”images/odega.jpg” width=”12
height=”12”>Njoeteni Mercy; ?>
<P>
<INPUT TYPE = 'Radio' Name ='q' value= 'C'
<?PHP print $answerC; ?>><?PHP print $<img
src=”images/odega.jpg” width=”12
height=”12”>Okoh John Mikel; ?>
<P>

<INPUT TYPE = "Submit" Name = "Submit1"
VALUE = "<img src=”iamges/star.jpg">

</FORM>

Database connection
   $server="localhost";
   $user="Idumuesah";
   $pass="Idumukpa";
   $db="tutorials";

   // connect to mysql
        mysql_connect($server, $user, $pass) or
die("Sorry, can't connect to the mysql.");
        // select the db
        mysql_select_db($db) or die("Sorry, can't
select the database.");
  ?>
Database code
<?php
   session_start();
   require("includes/connection.php");
   if(isset($_GET['page'])){
              $pages=array("products", "cart");
              if(in_array($_GET['page'], $pages)) {
                                        $_page=$_GET['pag
e'];
                   }else{
          $_page="Authenticate";
                   }
          }else{
             $_page="Fake";
          }
 ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD
XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-
transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
        <meta http-equiv="Content-Type"
content="text/html; charset=utf-8" />
    <link rel="stylesheet" href="css/reset.css" />
    <link rel="stylesheet" href="css/style.css" />
        <title>Authentic</title>
  </head>
  <body>
     <div id="container">
        <div id="main">
           <?php require($_page.".php"); ?>
        </div><!--end of main-->
        <div id="sidebar">
      </div><!--end of sidebar-->
</div><!--end container-->
</body>
</html>
```

Footer

```
<?php
            // This file is the place to store all basic
functions
            function confirm_query($result_set) {
                        if (!$result_set) {
                                    die("Database query
failed: " . mysql_error());
```

```
        }
    }
    function get_all_subjects() {
        global $connection;
        $query = "SELECT *
                FROM subjects
                ORDER BY
position ASC";
        $subject_set =
mysql_query($query, $connection);
        confirm_query($subject_set);
        return $subject_set;
    }

    function
get_pages_for_subject($subject_id) {
        global $connection;
        $query = "SELECT *
                FROM pages
                WHERE
subject_id = {$subject_id}
                ORDER BY
position ASC";
        $page_set =
mysql_query($query, $connection);
        confirm_query($page_set);
        return $page_set;
    }
?>
```

Header

```
<html>
    <head>
        <title>MOUAU</title>
        <link
href="stylesheets/public.css" media="all"
rel="stylesheet" type="text/css" />
    </head>
    <body>
        <div id="header">
            <h1>Widget Corp</h1>
        </div>
        <div id="main">
```

Cascading style sheet (css)

```
/* Site Colors:
    #1A446C - blue grey
    #689DC1 - light blue
    #D4E6F4 - very light blue
    #EEE4B9 - light tan
    #8D0D19 - burgundy
*/
html { height: 100%; width: 100%; }
body { width: 100%; height: 100%; margin: 0px;
padding: 0px; border: 0px;
    font-family: Verdana, Arial, Helvetica,
sans-serif; background: #D4E6F4;
    font-size: 13px; line-height: 15px; }
img { border: none; }
table, tr, td { border-collapse: collapse; vertical-
align: top; font-size: 13px; line-height: 15px;}
a { color: #8D0D19;}
#header { height: 70px; margin: 0px; padding: 0px;
text-align: left;
    background: #1A446C; color: #D4E6F4; }
#header h1 { padding: 1em; margin: 0px;}
#main { margin: 0px; padding: 0px; height: 600px;
width: 100%; background: #EEE4B9; }
#structure { height: 600px; width: 100%; }
#footer { height: 2em; margin: 0px; padding: 1em;
text-align: center;
background: #1A446C;  color: #D4E6F4; }
```

5.1 CONCLUSION

Book rating system will be a useful research tool that will open up new techniques for rating and selection of research material. It saves time and reduces errors to its minimum level as compare with manual approach which have limiting point. In designing application for verifying certificate online mysql database, php and JavaScript was

used. The system is more convenient to use and it is less prone to errors.

Username and password and other verification process should be sustained, and admin approval of participant should be adopted. This would be the only way to ensure public confidence in such systems.

It is recommended that a more elaborate and extensive research be fashioned out using php programming language to be used in the execution of a very complex application/process which is expected to surpass what is in this research work, due to the parallel approach method that were adopted in the system.

REFERENCES

Engr. Chiagunye Tochukwu, Engr. Nwachukwu nwokeafor K.C, Engr. Udeani Henrieta (2015) *Designing a Web Based Digital Library Management System for Institutions and Colleges IJISET* - International Journal of Innovative Science, Engineering & Technology, Vol. 2 Issue 3.

Engr. Chiagunye Tochukwu, Engr. Igbajar Abraham, Engr. Ilo Somtoochukwu. (2015) *Designing a Secured Online Course Examination System for Institutions and Colleges;* International Journal of Electrical, Electronic, Computer Science and Engineering (IJEECSE), Vol. 01, No. 01, P. 96-106, 2015.

Tutorial Point *(2015) online article on software design Methodology and Design* http://www.tutorialspoint.com/sdlc/sdlc_quick_guide.htm

http://filmratings.com/why.html

http://filmratings.com/how.html

François Coppens, Fernando González and Gerhard Winkler (2007) *The Performance of Credit Rating Systems in the Assessment of Collateral Used in Euro system Monetary Policy Operations.*

Abu Dhabi urban planning council (2010) The Pearl Rating System for *Estidama Building Rating System Design & Construction*

Prof. Mark E. Glickman, Thomas Doan (2015) the USCF Rating System

Jan Boehmer, Yumi Jung, and Rick Wash (2013), Recommender Systems Michigan State University

Jack Valenti(1992) Protect and Defend

(Probability Formula, http://www.probabilityformula.org/#)