



VIT[®]
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

**SCHOOL OF INFORMATION
TECHNOLOGY AND ENGINEERING**

**SUBJECT: CLOUD COMPUTING
PROJECT J-COMPONENT**

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TITLE: Nerd's Spot (One stop Website to find all Your Books & Journals.)

ABSTRACT:

There are many online book stores like Powell's, Amazon which were designed using Html. I want to develop a similar website using .NET, SQL Server. Online Book store is an online web application where the customer can purchase books online. Through a web browser the customers can search for a book by its title or author, later can add to the shopping cart and finally purchase using credit card transaction. The user can login using his account details or new customers can set up an account very quickly. They should give the details of their name, contact number and shipping address. The user can also give feedback to a book by giving ratings on a score of five. The books are divided into many categories based on subject Like Software, Database, English, Architecture etc.

In an effort to help organizations understand consumers, our study deconstructs task–technology fit into two segments: ideal task–technology fit and individual use context–technology fit. Users' continuous use of cloud-based bookstores is studied through survey methodology to collect consumer experience data related to the use of such cloud-based bookstores. In total, 185 samples were collected. Analytical results demonstrated that both ideal task–technology fit and individual use context–technology fit were significantly associated with the confirmation of users' expectations as related to cloud-based bookstores. Expectation confirmation and ideal task–technology fit also have a significant link to users' perceived usefulness and satisfaction, respectively. Furthermore, perceived usefulness significantly predicts satisfaction. Finally, perceived usefulness and satisfaction are also

significantly associated with a users' continuous use of cloud-based bookstores. As a result of this study's findings, system administrators may foster suitable strategies for an improvement of users' continuous use of cloud-based bookstores.

PROJECT OVERVIEW:

Document will include the project's requirements and overview. It includes overview of the project, its purpose, goals, risks, constraints, and direction. It gives a listing of the main requirements and their respective Use case models to illustrate the functionality. Project Plan will detail the phases, iterations, and milestones that will comprise the project. It will include a timeline for the project and a cost estimate for completing this project. It includes the Architecture Elaboration plan will define the activities and actions that must be accomplished before the Architecture Presentation. Software Quality Assurance Plan describes the required documentation, standards and conventions test tracking and problem reporting, and tools used during the project. The plan will also identify the set of quality metrics used to assess product reliability. Demonstration of at least one executable prototype is required. Projects with a graphical user interface will include an executable prototype of the user interface. This phase

The early development of electronic books (e-books) technology dates back to the 1970s starting with Project Gutenberg and the Oxford Text Archive project. This practice became widespread in the early 1990s because many publishers realized the market potential of providing content in the form of electronic books/e-books

1. In 2007, Amazon introduced their Kindle reader to widespread sales and acceptance. Following this success, e-books began to attract attention throughout the publishing market. Recently, the vast potential proliferation of e-books has

driven the major growth of smartphones, tablets, and other mobile reading devices as platforms. Thus, the e-book market has significantly affected the publishing industry. E-books are a digital form of traditionally printed books that is predominantly designed to be read digitally by using some form of e-book reader. Whenever they are compared with printed books, e-books are seen to have many obvious advantages.

2. First, one can download a title easily, quickly, and effectively from the Internet without the limitation of time and space and at a lower price point. Second, one can take along many “books”, even a whole e-library, using an e-book reader. Third, the disposal of used e-book content is both easy and costless, as this transaction is performed electronically within the e-reader. Thus, many readers have changed their reading habits from the usage of traditionally printed books over to e-book readers so that e-book technology development is now widespread. Due to such advantages, e-book sales growth has been predicted to continue a substantial rise in sales. According to an e-books market estimation report.

3. e-books revenue amounts to USD 11.862 billion in 2018 and with an annual growth rate of 3.3%. Furthermore, the e-book user-penetration rate (i.e., the number of active e-book users per 100 people) is set at 10.5% for 2018, and it is expected to reach 11.8% in 2022. Traditionally, school teachers have been considered to be among some of the most important contributors to the publishing industry. In any teaching and learning environment, one important task of the school teacher is to design better teaching activities that will improve students’ learning performance. Rich teaching materials are needed to support this task and to assist in student growth and development. In fact, evidence confirmed that electronic resources are able to meet most academics’ requirements.

4. however, many instructors do not know how to generally use technology efficiently in their teaching.

5. Likewise, they do not read e-books.

6. even though cloud-based bookstores provide rich teaching resources that are fully able to assist school teachers obtain convenient teaching materials.

Previous literature focused on the motivators for users to read or continuously read e-books or even to make the choice of e-books over printed books.

7. which would surely advance our understanding of e-book-related topics. With the increasing availability of e-books, we argue that it is time to investigate how to better manage those e-books via cloud-based bookstores, which is a subject that few studies have yet to explore. By means of cloud-based bookstores, users such as school teachers can better collect teaching materials or enrich the learning experience. Considering the plausible benefits, it seems that cloud-based bookstores may be a good source to fulfill teacher task-based teaching. The relative success of cloud-based bookstores presents a number of challenges. The TTF (task–technology fit) and ECM (expectation confirmation theory) have received significant academic attention and gained traction for their explanatory and predictive industries. Although the TTF model proposes the importance of a fit between task and technology, a theoretical gap still exists since it does not provide an overall understanding of what constitutes a task environment and how such an environment influences adoption and continual use in a cloud-based bookstores context. According to TTF theory, technology developments, use context, and sufficiency contents may all play essential roles in usability and results that influence the task performance constituting one's user experience. The decision of teachers' continual use of cloud-based bookstores is associated with an initial acceptance decision and any influence generated by the initial use experience. Regular use of cloud-based bookstores frequently forces both monetary and personal costs on teachers. Hence, teachers are most likely go through a decision process, similar to that in expectation confirmation theory (ECM), prior to making a decision affecting personal expenditure of time, finance, and effort. Thus, our study aims to investigate how to motivate school teachers' continuous use of cloud-based bookstores. The research questions addressed in this study are: What are the significant factor underlying teachers' intention to continue using cloud-based bookstores after its initial acceptance; and, how do these factors affect continuance intention in potential users? Understanding the continuance behaviour of teachers will not only help them to efficiently prepare teaching

materials, but it will also prove beneficial to publishing companies in attracting more customers, increasing revenue, and driving the development and growth of cloud-based bookstores everywhere. With the research, we contribute to an understanding of technological and cognitive aspects useful to create a novel model with a pragmatic approach. This may advance the TTF and ECM theories that will lead to a better understanding of the holistic user experience.

LITERATURE SURVEY:

Cloud-Based Bookstores:

Cloud computing, a type of computing model aimed at providing end users with a reliable, customized, and dynamic computing environment is a current trend that reveals the architecture of next-generation applications. Cloud computing delivers computing resources as a service rather than as a product, so organizations can dynamically acquire and leverage required services via network connections. Thus, cloud computing is regarded as the most promising business opportunity for the information technology industry after Web 2.0. Due to security and standardization issues remaining as big issues in the business environment coupled with a lack of consistently successful business models, many organizations have chosen not to adopt cloud computing at this time. Despite most organizations taking a wait-and-see attitude about embracing cloud-computing technology, several organizations have already utilized cloud-computing technology to further the development of an online e-book environment. Some well-known cloud-based bookstores include Kindle eBooks (Amazon), iBooks Store (Apple), NOOK Store (Barnes & Noble), and Google Books (Google), which provide e-book transaction services to their consumers. One of the better known cloud-based bookstores is Raz-Kids. It is a teaching-aid product that provides comprehensive learning resources for both teachers and students alike. This platform offers hundreds of e-books at 29 different levels of reading acuity. Students can easily read content at an appropriate level determined by teacher-student agreement. Beyond cost savings,

e-book users may use the cloud-based bookstores to collect and exhibit e-books, which offers them the benefits of movement, flexibility, and value-added functionality whenever they need to search and manipulate digital information. A number of studies have found factors that encourage users to use e-books or, they examine how users perceive e-books in general. Most of these studies adopted various theoretical perspectives, such as innovation diffusion theory, task–technology fit, technology acceptance theory or expectation confirmation theory, to undertake their respective studies. In , the authors deeply explored the diffusion of innovations theory that includes Rogers' Diffusion of Innovations curve to create innovation categories suitable for understanding e-book usage. In the authors proposed that e-book usage remains dependent on how individuals perceive the fit of this technology tool to the tasks they undertake, determining what value-added functions are provided by the content information delivery technology used to enhance reader performance. In the authors applied the technology acceptance model (TAM) to address the causal psychological mechanisms posited by the TAM, which found that perceived usefulness is more significant than perceived ease of use to satisfaction with e-books, and the greater satisfaction with e-book usage prompted the willingness to continue using e-books. However, few studies further focused on how to motivate users' continuous usage of cloud-based bookstores or digital libraries. Furthermore, it may be supposed that there is a need to further the study of e-books from adoption/usage to how to better manage a large volume of e-books via cloud-based bookstores, which forms the basis of our study.

MODELS AND THEORYS:

1.Task–Technology Fit Theory:

People often select a suitable technology to fit their task characteristics for the improvement of their task performance. In order to examine how a technology can influence task performance, it commonly adopts the task–technology fit theory (TTF) to explore whether any demonstrable relationship concerning task–

technology fit and users' performance comes into effect Fit refers to the extent to how a technology tool can assist individuals as they complete their tasks. An individual is most often willing to adopt the technology if and only if the technology resembles the tasks to be implemented . Reduced task–technology fit (Goodhue and Thompson, 1995). Several studies have used TTF to explore the performance impact among various contexts, and they have extended the model to provide a more comprehensive explanation in association with technology, task, task–technology, and technology utilization Furthermore, utilization is the behavior of an individual who uses the technology to complete his/her tasks. However, utilizing a technology J. Theor. Appl. Electron. Commer. Res. 2021, 16 360 does not necessarily guarantee better performance. Goodhue and Thompson realized that an individual's task performance mostly depends on TTF rather than on utilization.

2. Deconstructed Task–Technology Fit Theory Task–technology fit:

is reflected by the interaction among task complexity requirements, user abilities and information technology/information system functions. For the decision-making tasks, summarizes relevant task classifications that readily belong to one of Hackman's four conceptualizations or definitions for a task:

- (1) task qua task,
- (2) task serving as a behavioural requirement,
- (3) it acts as a behavioural description, and
- (4) it involves ability requirements. However, also declares that the task-qua-task approach emphasizes the actual materials to be used in a task being shown as part of the decision-making process; the behavior requirements of a task determine both what individuals have to complete to meet designated goals and how they should achieve those goals; and, the last two concepts are unlikely to advance research relative to decision-making tasks. thinks that task complexity can be integrated into the last two tasks conceptualized by the task-qua-task approach and the task as behavioral requirements approach. Furthermore, this complexity lays stress on the task's characteristics as presented to the decision makers. Based

on the structural contingency theory, the definitions of fit have been identified according to three distinct approaches, including:

- (1) fit means internal consistency,
- (2) fit functions as interaction, and

(3) fit is treated as congruency. In there is further extension of these three approaches into six fit perspectives: gestalts, profile deviation, covariation, moderation, mediation, and matching. declared that the last three aspects are criterion-free; put another way, their applicability is not unique (i.e., universal), and it is not subject to any particular dependent variable (e.g., effectiveness). However, these three conceptualizations are not suitable to link task technology fit to an effective performance of decision making. Furthermore, out of the six concepts, the first two are finite in terms of the number of variables, which are taken into consideration; precisely, they are commonly employed in assessing an association between a single predictor variable, a single moderating or intervening variable, and a single dependent variable, all of which are inappropriate for a consideration of task complexity. Following structural contingency theory, proposes that the optimal definition for technology/task fit is an ideal profile with an internally congruent set of task contingencies and technology elements which impacts the performance of decision. reported that higher level managers especially favor ample media for information processing and communication. This particular result may also imply that a task can be best supported when the right information technology is chosen. With portable devices in abundance, the services of a cloud-based bookstore can be employed from any time and/or any place, by any user. Therefore, the use of cloud-based bookstore is removed from a non-mobile IS environment. thinks there is a substantial difference between mobile and non-mobile IS results from the context relevant to the IS used. With consideration of the technological use contexts or business processes perspectives, the use context has its own role centering in the socio-technical approach to IS regard the use context as a critical indicator between mobile and non-mobile IS. The ideal concept is one in which a mutual understanding may serve to create a bridge between people and the situated context where users act, thereby leading to a continuous fit of the IS with users'

immediate needs, capabilities, and skills. Meanwhile, it is important to understand the complexity of the interwoven factors at large. These factors are composed of the user, technology, and the environment that surrounds what is focused on. Furthermore, the study of also demonstrated that information technology can provide users with the best support only when it is under the right use context. In addition, a cloud-based system has been proven as a factor that provides end users with a reliable, customized, and dynamic computing environment, referring to the fact that cloud-based systems allow for individuals to access information resources anywhere. A suitable cloud-based system is frequently limited due to location, time criticality, functionality, etc. To account for these J. Theor. Appl. Electron. Commer. Res. 2021, 16 361 limitations, it has been suggested to include the individual use context into the design of informational systems. In a socio-technical system, the communication application environment often plays a central role in IS utilization. Thus, in cloud services, it is necessary to comprehensively understand the complex and dynamic network of interrelated factors in which user behaviors and available technology surround global factor. For the overall technology evaluation that affects the technology usage and performance, claim that the performance evaluation of technology should include user–context characteristics in addition to task and technology characteristics. recommend that the task–technology fit can be further deconstructed to realize the effects of fit on the outcome of an IS. Thus, this study deconstructs the TTF into two segments: one is ideal task–technology fit, and the other is individual use context–technology fit, since “task–individual fit” does not consider the technology characteristics, which are consistent with the assertions of the authors argued that TTF is an important user evaluation concept in forecasting the utilization of a specific technology. Actually, TTF is a developing construct, and diverse forms of the TTF-based model currently subsist . In their study of information system continuance found that perceived technological characteristics are insufficient to increase continuance intention. Thus, it is necessary to extend the TTF construct to information system continuance by integrating other concepts. Therefore, this study combines the

TTF and ECM to propose a comprehensive explanation of cloud-based bookstore continuance.

IMPLEMENTATION DETAILS:

EXECUTION PLAN:

We are using HTML, CSS and Java script to design the Books store managements system website.

Python at Backend and at last we are Deploying our Huge Book Collection on Cloud to browse them using our website.

Docker-compose acts as the Services in the cloud application infrastructure facilitating a virtual gateway for the incoming request. Each service is containerized in separate directories and runs on different ports. Each service has its own requirements where the dependencies are listed.

Backend includes the files for running containerized docker application on ubuntu EC2 instance hosted on AWS.

Step-by-Step Implementation:

Step 1: Creating The Frontend For the Project:

Index.html:

Code:

```
<html>

<head>
  <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
  <meta name="viewport" content="width=device-width, initial-scale=1" />
```

```

<meta http-equiv="X-UA-Compatible" content="IE=edge" />
<meta name="author" content="colorlib.com">
<link rel="icon" href="data:,">
<link href="https://fonts.googleapis.com/css?family=Roboto:400,700"
rel="stylesheet" />
<link href="static/css/main.css" rel="stylesheet" />
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.4.1/jquery.min.js"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
<title>Cloud A3</title>

<script type="text/javascript">
$(document).ready(function () {
    document.getElementById("add-note-btn").addEventListener("click", function () {
        var newnote = prompt("Add a Note?");
        if (newnote.length > 0 && newnote.trim() != "") {
            addnotes(newnote);
        } else {
            alert("Bad Entry!Try again.");
        }
    })
});

function scrollFunction() {
    if (documentElement.scrollTop > 20 || documentElement.scrollTop > 20) {
        document.getElementById("navbar").style.top = "0";
    } else {
        document.getElementById("navbar").style.top = "-150px";
    }
}

function addBookItem(book_str) {
    var ul = document.getElementById("dynamic-list");
    var li = document.createElement("li");
    li.appendChild(document.createTextNode(book_str));
    ul.appendChild(li);
}

function addNoteItem(note_str) {
    var ul = document.getElementById("dynamic-list2");
    var li = document.createElement("li");
    li.appendChild(document.createTextNode(note_str));
}

```

```

    ul.appendChild(li);
}

function showdata(data) {
    var ul = document.getElementById("dynamic-list");
    ul.innerHTML = '';
    for (x in data) {
        doc = data[x];
        var bookobj = JSON.parse(doc.toString());
        var book_str = "title: " + bookobj.title + " author: " + bookobj.title;
        addBookItem(book_str);
    }
}

function submitform() {
    var searchString = document.getElementById("search").value;
    if (searchString.toString().trim() == "") {
        alert("Note must contain some text!");
        return null;
    }
    else {
        var catalog = document.getElementById('tmp');
        catalog.style.display = 'block';
        axios.get('http://18.213.176.85:5000/search?searchString=' +
searchString.toString())
            .then(response => {
                // console.log(response.data);
                var resdata = response.data;
                showdata(resdata);
                var btndiv = document.getElementById('btngroup');
                btndiv.style.display = 'block';
            })
            .catch(error => {
                // console.log(error);
            });
    }
}

function populateNotes(data) {
    var ul = document.getElementById("dynamic-list2");
    ul.innerHTML = '';
    for (x in data) {
        doc = data[x];
        addNoteItem(doc['note'].toString());
    }
}

```

```

}

function addnotes(n) {
  var searchString = document.getElementById("search").value;
  if (searchString == "") {
    alert("Please enter a search query!");
    return;
  }
  viewnotes()
  addNoteItem(n.toString());
  axios.get('http://18.213.176.85:7000/addNote?searchString=' +
searchString.toString() + '&note=' + n.toString())
    .then(response => {
      // console.log(response.data);
      var resdata = response.data;
      // console.log('Note Addition: Success!');
      viewnotes()
    })
    .catch(error => {
      // console.log('Note Addition: Failure. Error: ' + error);
    });
}

function viewnotes() {
  var notesSection = document.getElementById("tmp2");
  notesSection.style.display = 'block';
  var searchString = document.getElementById("search").value;
  if (searchString == "") {
    alert("Please enter a search query!");
    return;
  }
  axios.get('http://18.213.176.85:7000/findNotes?searchString=' +
searchString.toString())
    .then(response => {
      // console.log(response.data);
      var resdata = response.data;
      populateNotes(resdata);
    })
    .catch(error => {
      // console.log(error);
    });
}
</script>
</head>

```

```

<body>
  <div class="s008">

    <form onsubmit="return false;">
      <div class="inner-form">
        <div class="basic-search">
          <div class="input-field">
            <input id="search" type="text" placeholder="Type Keywords and Press
Enter" onkeydown="if (event.keyCode == 13)
                        {submitform();}" />

          <div class="icon-wrap">
            <svg version="1.1" xmlns="http://www.w3.org/2000/svg"
xmlns:xlink="http://www.w3.org/1999/xlink"
              width="20" height="20" viewBox="0 0 20 20">
              <path
                d="M18.869 19.162l-5.943-6.484c1.339-1.401 2.075-3.233 2.075-5.178
0-2.003-0.78-3.887-2.197-5.303s-3.3-2.197-5.303-2.197-3.887 0.78-5.303 2.197-2.197
3.3-2.197 5.303 0.78 3.887 2.197 5.303 3.3 2.197 5.303 2.197c1.726 0 3.362-0.579
4.688-1.645l5.943 6.483c0.099 0.108 0.233 0.162 0.369 0.162 0.121 0 0.242-0.043
0.338-0.131 0.204-0.187 0.217-0.503 0.031-0.706zM1 7.5c0-3.584 2.916-6.5 6.5-6.5s6.5
2.916 6.5 6.5-2.916 6.5-6.5 6.5-6.5-2.916 6.5-6.5z">
              </path>
            </svg>
          </div>
        </div>
        <div id="tmp">
          <nav id="navbar">
            <ul id="dynamic-list">
            </ul>
          </nav>
        </div>
        <div id="tmp2" style="margin-top: 366px;">
          <nav>
            <ul id="dynamic-list2">
            </ul>
          </nav>
        </div>
      </div>
    </div>
    <div id="btngroup" style="padding: 9px; display: none;margin-top: 310px;">
      <div>
        <input type="button" class="btn btn-success" id="add-note-btn" value="Add
Notes"/>

```

```

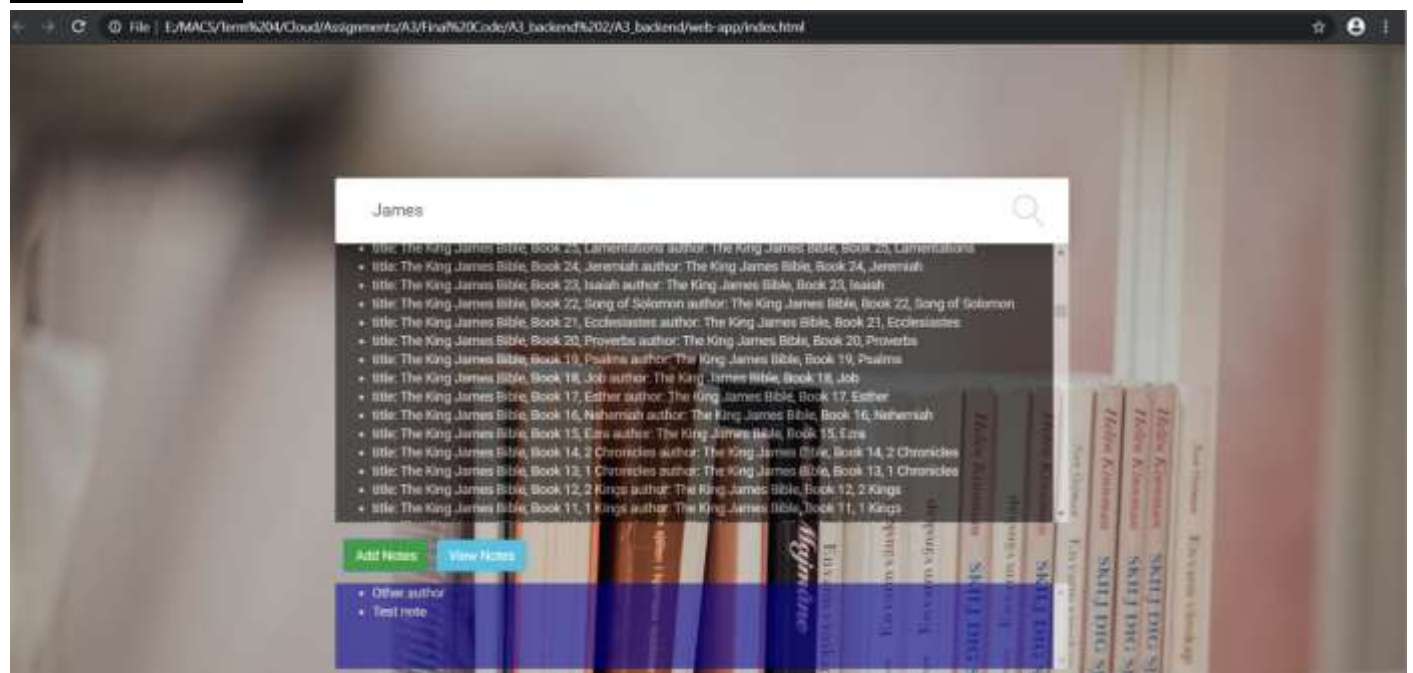
        <input type="button" class="btn btn-info" onclick="viewnotes()"
style="margin-left: 5px;" value="View Notes"/>
    </div>
</div>
</form>
<!-- <div id="btngroup" style="padding: 9px; display: none;">
    <div>
        <button class="btn btn-success" id="add-note-btn">Add Notes</button>
        <button class="btn btn-info" onclick="viewnotes()" style="margin-left:
5px;">View Notes</button>
    </div>
</div> -->
</div>
<content>

</content>
<script src="https://unpkg.com/axios/dist/axios.min.js"></script>
<script>
    window.onscroll = function () { scrollFunction() };
</script>
</body>

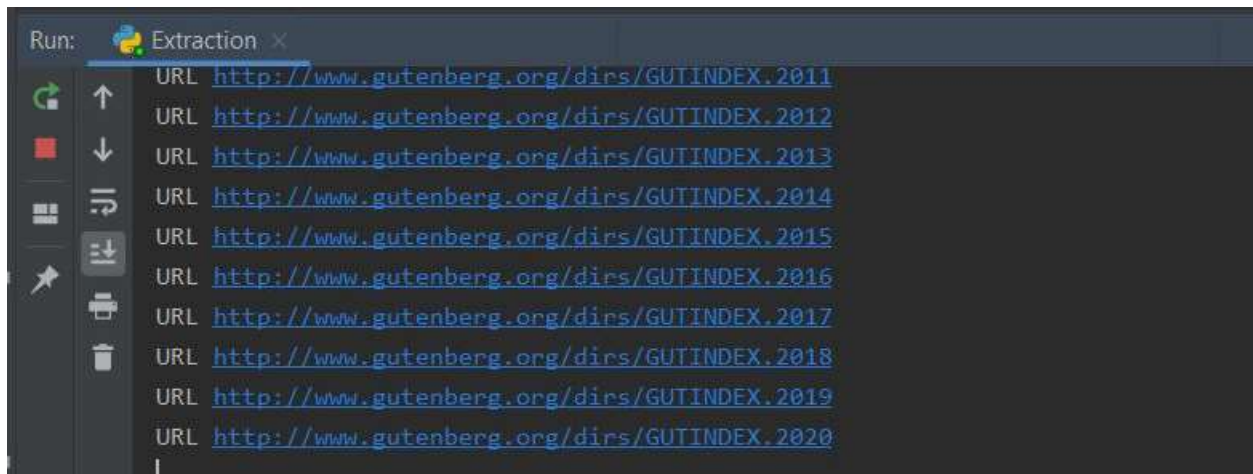
</html>

```

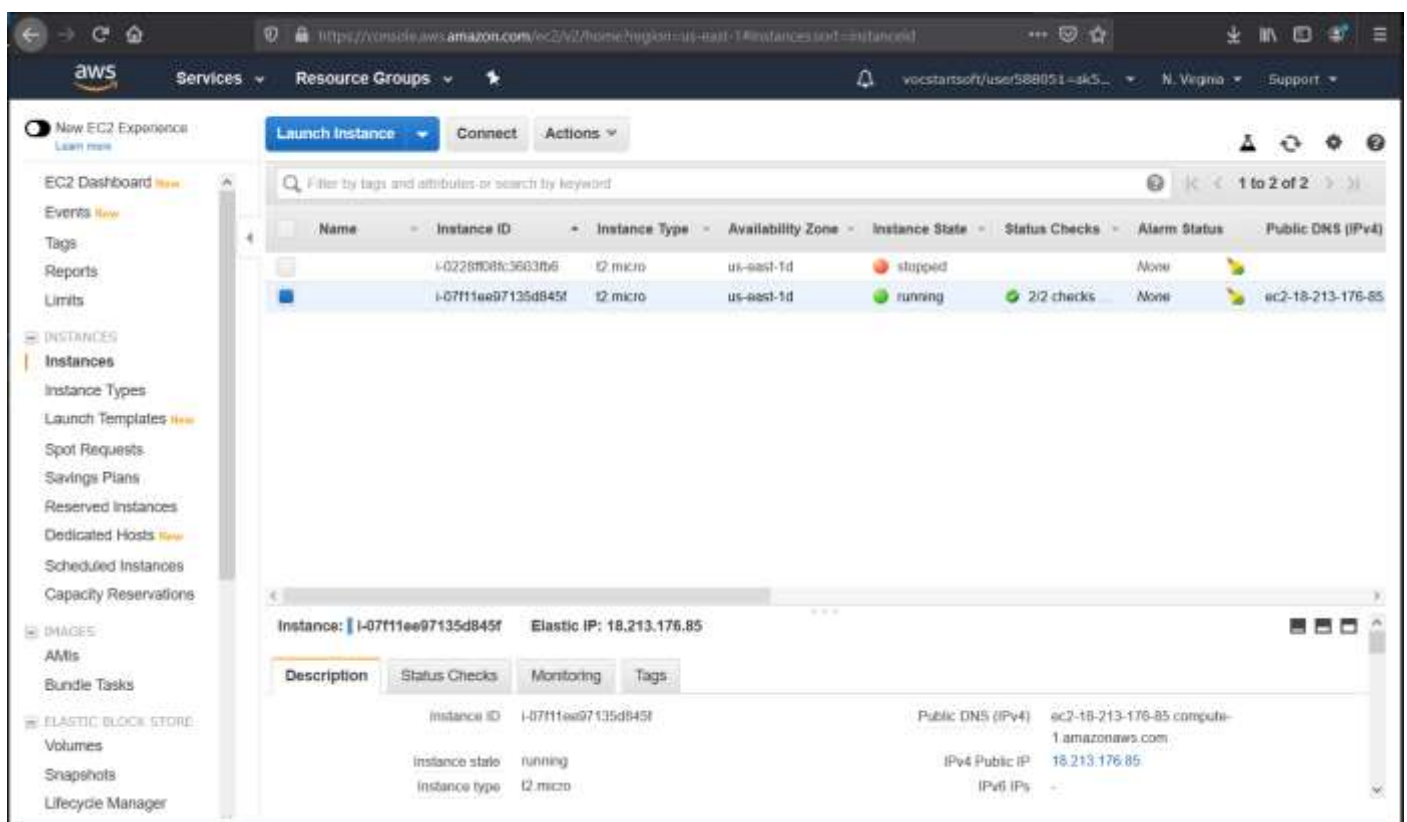
Result Set:



Step 2: Extraction Process of connecting to Client Server:



Step 3: Creating a AWS instance EC2.



Step 4: Checking Security Bounds of Instance:

EC2 > Security Groups > sg-0ac2f940ea7722877 - launch-wizard-2

sg-0ac2f940ea7722877 - launch-wizard-2

Details

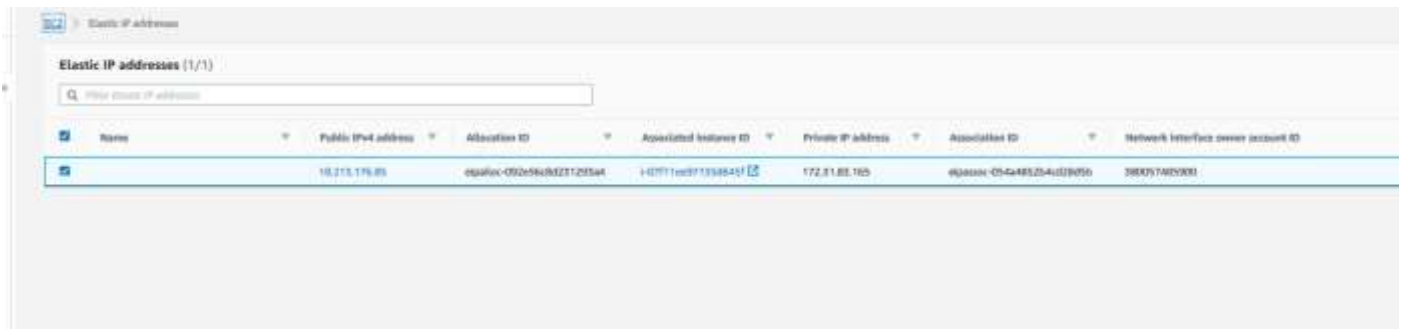
| | | |
|--|--|--|
| Security group name launch-wizard-2 | Security group ID sg-0ac2f940ea7722877 | Description launch-wizard-2 created 2020-03-19T21:20:15.506-03:00 |
| Owner 380057485900 | Inbound rules count 14 Permission entries | Outbound rules count 1 Permission entry |

Inbound rules | Outbound rules | Tags

Inbound rules

| Type | Protocol | Port range | Source | Description - optional |
|--------------|----------|------------|-----------|------------------------|
| HTTP | TCP | 80 | 0.0.0.0/0 | - |
| HTTP | TCP | 80 | :::/0 | - |
| SSH | TCP | 22 | 0.0.0.0/0 | - |
| SSH | TCP | 22 | :::/0 | - |
| Custom TCP | TCP | 5000 | 0.0.0.0/0 | - |
| Custom TCP | TCP | 5000 | :::/0 | - |
| Custom TCP | TCP | 27017 | 0.0.0.0/0 | - |
| Custom TCP | TCP | 27017 | :::/0 | - |
| Custom TCP | TCP | 7000 | 0.0.0.0/0 | - |
| Custom TCP | TCP | 7000 | :::/0 | - |
| MySQL/Aurora | TCP | 3306 | 0.0.0.0/0 | - |
| MySQL/Aurora | TCP | 3306 | :::/0 | - |
| Custom TCP | TCP | 6000 | 0.0.0.0/0 | - |
| Custom TCP | TCP | 6000 | :::/0 | - |

Step 5: Generating Elastic IP:



The screenshot shows the AWS Elastic IP addresses console. At the top, there's a header "Elastic IP addresses" and a sub-header "Elastic IP addresses (1/1)". Below this is a search bar labeled "Filter Elastic IP addresses". A table lists the Elastic IP addresses with columns: Name, Public IPv4 address, Allocation ID, Associated instance ID, Private IP address, Association ID, and Network interface owner account ID. One entry is visible with the public IP 18.218.176.85.

| Name | Public IPv4 address | Allocation ID | Associated instance ID | Private IP address | Association ID | Network interface owner account ID |
|------|---------------------|---------------------------|------------------------|--------------------|----------------------------|------------------------------------|
| | 18.218.176.85 | eaaf0ec-092e5bcb8231293a4 | i-01711ee97133a845f | 172.31.88.165 | elb-assoc-054a85254a029d5b | 3887974029001 |

Step 6: Connecting MongoDB Data base (we are using Mongo community edition) we are importing our book_collection in Database.

MongoDB Compass Community - 18.213.176.85:27017/books_db.books

Connect View Collection Help

Local

1 DBS 4 COLLECTIONS

☆ FAVORITE

HOST
18.213.176.85:27017

CLUSTER
Standalone

EDITION
MongoDB 4.2.3 Community

Filter your data

books_db

books

notes

process_log

search_log

books_db.books Documents

books_db.books

Documents Aggregations Explain Plan

FILTER

ADD DATA

VIEW

| |
|---|
| <code>_id: ObjectId("5e743f1b2787959b67f16a43")</code> <code>title: "Wuthering Heights"</code> <code>author: "Emily Brontë"</code> |
| <code>_id: ObjectId("5e743f1b2787959b67f16a44")</code> <code>title: "Agnes Grey"</code> <code>author: "Anne Brontë"</code> |
| <code>_id: ObjectId("5e743f1b2787959b67f16a45")</code> <code>title: "David Copperfield"</code> <code>author: "Charles Dickens"</code> |
| <code>_id: ObjectId("5e743f1b2787959b67f16a46")</code> <code>title: "The Moon Pool"</code> <code>author: "A. Merritt"</code> |

Step 7: Verifying Process_logs

MongoDB Compass Community - 18.213.176.85:27017/books_db.process_log

Connect View Collection Help

Local

1 DBS 4 COLLECTIONS

☆ FAVORITE

HOST
18.213.176.85:27017

CLUSTER
Standalone

EDITION
MongoDB 4.2.3 Community

Filter your data

books_db

- books
- notes
- process_log
- search_log

books_db.process_log Documents

books_db.process_log

Documents Aggregations Explain Plan

FILTER

ADD DATA

VIEW

Documents

| |
|---|
| <code>_id: ObjectId("5e743f342787959b67f16d3a")</code> <code>year: 1996</code> <code>start_time: "00:57:14.923158"</code> <code>end_time: "00:57:40.099218"</code> |
| <code>_id: ObjectId("5e74406d2787959b67f16ea6")</code> <code>year: 1997</code> <code>start_time: "01:02:40.171765"</code> <code>end_time: "01:02:53.525506"</code> |
| <code>_id: ObjectId("5e7441ae2787959b67f17168")</code> <code>year: 1998</code> <code>start_time: "01:07:53.566814"</code> <code>end_time: "01:08:14.800379"</code> |
| <code>_id: ObjectId("5e7442ea2787959b67f17349")</code> <code>year: 1999</code> <code>start_time: "01:13:14.827252"</code> <code>end_time: "01:13:30.328917"</code> |

Step 8: Search_log files

MongoDB Compass Community - 18.213.176.85:27017/books_db.search_log

Connect View Collection Help

Local

1 DBS 4 COLLECTIONS

☆ FAVORITE

HOST
18.213.176.85:27017

CLUSTER
Standalone

EDITION
MongoDB 4.2.3 Community

Filter your data

books_db

books

notes

process_log

search_log

books_db.search_log Documents

books_db.search_log

Documents Aggregations Explain Plan

FILTER

ADD DATA

VIEW

`_id: ObjectId("5e794721678ea9efc0a50d7e")`
`keyword: "Charles"`
`time: "17:50:20.343460"`
`frequency: 164`

`_id: ObjectId("5e79747b7212969031f961ce")`
`keyword: "Charlescharles"`
`time: "23:46:20.117277"`
`frequency: 2`

`_id: ObjectId("5e7999a53a3ba2d12331d292")`
`keyword: "Charle"`
`frequency: 1`

`_id: ObjectId("5e7b6afbe2c15999d54031db")`
`keyword: "mjhgghg"`
`frequency: 1`

Step 9: Notes_collection

MongoDB Compass Community - 18.213.176.85:27017/books_db.notes

Connect View Collection Help

Local

1 DBS 4 COLLECTIONS

FAVORITE

HOST
18.213.176.85:27017

CLUSTER
Standalone

EDITION
MongoDB 4.2.3 Community

Filter your data

books_db

books

notes

process_log

search_log

books_db.notes

Documents

Aggregations Explain Plan Indexes

FILTER

ADD DATA

VIEW

_id: ObjectId("5e798e98b35e4ef9eeceeb32")
 keyword: "Charles"
 Notes: Array

_id: ObjectId("5e7bd562db76bfbf84111892")
 keyword: "James"
 Notes: Array

- 0: Object
 - note: "Other author"
 - date_time: "2020-03-25 22:04:18.264664"
- 1: Object
 - note: "Test note"
 - date_time: "2020-03-25 22:04:45.097750"

Step 10: Next Step is Running Docker

```

root@ip-172-31-83-165:/home/ubuntu# cd A3_backend/
root@ip-172-31-83-165:/home/ubuntu/A3_backend# ls -lft
total 92
-rw-rw-r-- 1 ubuntu ubuntu 537 Mar 25 21:25 docker-compose.yml
drwxrwxr-x 2 ubuntu ubuntu 4096 Mar 25 21:25 catalogue_service
drwxrwxr-x 2 ubuntu ubuntu 4096 Mar 25 21:25 notes_service
drwxrwxr-x 2 ubuntu ubuntu 4096 Mar 25 21:25 search_service
drwxrwxr-x 2 ubuntu ubuntu 4096 Mar 25 21:25 web-app
drwxrwxr-x 4 ubuntu ubuntu 4096 Mar 25 21:25 static
-rw-r--r-- 1 root root 42 Mar 25 21:32 search_log.txt
-rw-r--r-- 1 root root 62750 Mar 25 21:32 data.json
root@ip-172-31-83-165:/home/ubuntu/A3_backend# cat search_log.txt
Charles : 21:32:56.751404 Total count: 1.
root@ip-172-31-83-165:/home/ubuntu/A3_backend# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
a3backend_catalogue latest             ec5021f037fe       13 minutes ago     953MB
a3backend_search     latest            3053c94f738f       13 minutes ago     953MB
a3backend_notes      latest            c3f1fa9ade79       13 minutes ago     953MB
python               3                 f88b2f01f83a       4 weeks ago        933MB
hello-world          latest            fce289e99eb9       14 months ago      1.84kB
root@ip-172-31-83-165:/home/ubuntu/A3_backend# docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
b6dc46bc928a       a3backend_search   "python search_servi*" 13 minutes ago     Up 13 minutes      0.0.0.0:5000->5000/tcp a3backend_search_1
03ac381ccc6a       a3backend_catalogue "python catalogue_se*" 13 minutes ago     Up 13 minutes      0.0.0.0:6000->6000/tcp a3backend_catalogue_1
132dc7cb720e       a3backend_notes    "python notes_servic*" 13 minutes ago     Up 13 minutes      0.0.0.0:7000->7000/tcp a3backend_notes_1
root@ip-172-31-83-165:/home/ubuntu/A3_backend#

```


Step 11: Generated Catalog_data

data - Notepad

File Edit Format View Help

```
"["{"_id\\": {"$oid\\": "\\\"5e74406a2787959b67f16e48\\\""}, "\\\"title\\\"": "\\\"A  
oid\\\"": "\\\"5e7442e92787959b67f17336\\\""}, "\\\"title\\\"": "\\\"Royalty Restored, or, Long  
Charles Darwin, Vol 1 of 2\\\"", "\\\"author\\\"": "\\\"Unknown\\\""}\\", {"_id\\": {"$oid\\": {"$oid\\": "\\\"5e7442e92787959b67f17336\\\""}, "\\\"title\\\"": "\\\"The Duchess of Berry and the Court of Charles X\\\"", "\\\"author\\\"": "\\\" Imber  
_id\\": {"$oid\\": "\\\"5e7445742787959b67f179a2\\\""}, "\\\"title\\\"": "\\\"Locrine\\\"  
ntains\\\"", "\\\"author\\\"": "\\\" Charles M. Skinner\\\""}\\", {"_id\\": {"$oid\\": {"$oid\\": "\\\"5e7445742787959b67f179a2\\\""}, "\\\"title\\\"": "\\\"The Gilded Age, Part 3\\\"", "\\\"author\\\"": "\\\"Mark Twain & Charles Dudley  
: {"$oid\\": "\\\"5e7446e72787959b67f18307\\\""}, "\\\"title\\\"": "\\\"Two Expeditions in  
\\\"}, {"_id\\": {"$oid\\": "\\\"5e7446e72787959b67f18307\\\""}, "\\\"title\\\"": "\\\"The Best Letters of Charles Lamb, ed: Edward Gilpin Johnson\\\"",  
484b2787959b67f18a4e\\\""}, {"_id\\": {"$oid\\": "\\\"5e7446e72787959b67f18a4e\\\""}, "\\\"title\\\"": "\\\"The Origin & Permanent Value of the Old  
ns of Harry Lorrequer\\\"", "\\\"author\\\"": "\\\" Charles James Lever\\\""}\\", {"_id\\": {"$oid\\": {"$oid\\": "\\\"5e7446e72787959b67f18a4e\\\""}, "\\\"title\\\"": "\\\"  
}\\", {"_id\\": {"$oid\\": "\\\"5e74487d2787959b67f1911e\\\""}, "\\\"title\\\"": "\\\"  
author\\\"": "\\\"Edward Marshall and Charles T. Dazey\\\""}\\", {"_id\\": {"$oid\\": {"$oid\\": "\\\"5e74487d2787959b67f1911e\\\""}, "\\\"title\\\"": "\\\"  
_id\\\": {"$oid\\\": "\\\"5e744a042787959b67f19d0e\\\""}, "\\\"title\\\"": "\\\"The Wife o  
\\\"Hermit Of ----- Street\\\"", "\\\"author\\\"": "\\\"Anna Katharine Green (Mrs. Charles I  
rthagena\\\"", "\\\"author\\\"": "\\\"Sir Charles Knowles\\\""}\\", {"_id\\": {"$oid\\": {"$oid\\": "\\\"5e744a042787959b67f19d0e\\\""}, "\\\"title\\\"": "\\\"  
s J. Stees\\\""}\\", {"_id\\": {"$oid\\": "\\\"5e744f132787959b67f1a979\\\""}, "\\\"title\\\"": "\\\"  
t P. Gillette and Charles S. Hill\\\""}\\", {"_id\\": {"$oid\\": "\\\"5e744f2c2787959b67f1a979\\\""}, "\\\"title\\\"": "\\\"  
5e7450762787959b67f1b0d1\\\""}, {"_id\\": {"$oid\\": "\\\"5e7450762787959b67f1b0d1\\\""}, "\\\"title\\\"": "\\\"A Letter to Hon. Charles Sumner\\\"", "\\\"  
: "\\\"5e7450872787959b67f1b305\\\""}, {"_id\\": {"$oid\\": "\\\"5e7450872787959b67f1b305\\\""}, "\\\"title\\\"": "\\\"The Academic Questions; Treatise  
id\\\": "\\\"5e7450982787959b67f1b561\\\""}, {"_id\\": {"$oid\\": "\\\"5e7450982787959b67f1b561\\\""}, "\\\"title\\\"": "\\\"Kings in Exile\\\"", "\\\"au  
\\\": "\\\"Reminiscences of Service with the First Volunteer Regiment of Georgia, Charleston I  
oid\\\": "\\\"5e7451ee2787959b67f1bab8\\\""}, {"_id\\": {"$oid\\": "\\\"5e7451ee2787959b67f1bab8\\\""}, "\\\"title\\\"": "\\\"The Raid of The Guerilla  
\\\"}]"
```



Step 12: Generated search_log

 search_log - Notepad

File Edit Format View Help

```
Charles : 18:02:34.191526 Total count: 1.  
Charles dickens : 18:04:10.710341 Total count: 1.  
Charles dickens : 18:04:32.643918 Total count: 2.
```

Step 13: Docker Compose Output

 root@ip-172-31-83-165: /home/ubuntu/A3_backend

```
root@ip-172-31-83-165:/home/ubuntu/A3_backend# docker-compose up
Creating network "a3backend_default" with the default driver
Building notes
Step 1/7 : FROM python:3
3: Pulling from library/python
50e431f79093: Pull complete
dd8c6d374ea5: Pull complete
c85513200d84: Pull complete
55769680e827: Pull complete
f5e195d50b88: Pull complete
94cdd3612287: Pull complete
3b37b69935d4: Pull complete
b9add85f08c4: Pull complete
aalf4a29beac: Pull complete
Digest: sha256:de4dad989417bdb9375e49b17602984a6883fbe4fa92e7a432983ef602bfcc28
Status: Downloaded newer image for python:3
---> f88b2f81f83a
Step 2/7 : ENV PYTHONUNBUFFERED 1
---> Running in 8e2b0862f1d9
Removing intermediate container 8e2b0862f1d9
---> e5baef36a477
Step 3/7 : RUN mkdir /notes
---> Running in 2be6c2adfee1
Removing intermediate container 2be6c2adfee1
---> 163ec875f7e3
Step 4/7 : WORKDIR /notes
---> Running in 1080f601bea5
Removing intermediate container 1080f601bea5
---> 230578aadfc3
Step 5/7 : COPY requirements.txt /notes/
---> af14400c70f5
Step 6/7 : RUN pip install -r requirements.txt
---> Running in ca96029f0278
Collecting beautifulsoup4==4.8.2
  Downloading beautifulsoup4-4.8.2-py3-none-any.whl (106 kB)
Collecting bs4==0.0.1
  Downloading bs4-0.0.1.tar.gz (1.1 kB)
Collecting bson==0.5.9
  Downloading bson-0.5.9.tar.gz (10 kB)
Collecting certifi==2019.11.28
  Downloading certifi-2019.11.28-py2.py3-none-any.whl (156 kB)
Collecting chardet==3.0.4
  Downloading chardet-3.0.4-py2.py3-none-any.whl (133 kB)
Collecting click==7.1.1
  Downloading click-7.1.1-py2.py3-none-any.whl (82 kB)
Collecting Flask==1.1.1
  Downloading Flask-1.1.1-py2.py3-none-any.whl (94 kB)
Collecting Flask-Cors==3.0.8
  Downloading Flask_Cors-3.0.8-py2.py3-none-any.whl (14 kB)
Collecting idna==2.9
```

Step 14: Docker Service logs

```
search_1      * Debugger is active!
search_1      * Debugger PID: 136-285-433
search_1      File Not Found
catalogue_1   10.213.176.85 - - [25/Mar/2020 21:32:56] "POST /catalogue-service HTTP/1.1" 200 -
search_1      <Response [200]>
search_1      142.167.57.145 - - [25/Mar/2020 21:32:56] "GET /search?searchString=Charles HTTP/1.1" 200 -
search_1      ['Charles : 21:32:56.751494 Total count: 1.\n']
catalogue_1   10.213.176.85 - - [25/Mar/2020 21:39:36] "POST /catalogue-service HTTP/1.1" 200 -
search_1      <Response [200]>
search_1      142.167.57.145 - - [25/Mar/2020 21:39:36] "GET /search?searchString=Charles HTTP/1.1" 200 -
search_1      ['Charles : 21:32:56.751494 Total count: 1.\n', 'Charles : 21:39:36.689076 Total count: 2.\n']
catalogue_1   10.213.176.85 - - [25/Mar/2020 21:57:36] "POST /catalogue-service HTTP/1.1" 200 -
search_1      <Response [200]>
search_1      142.167.57.145 - - [25/Mar/2020 21:57:36] "GET /search?searchString=Charles%20Dickens HTTP/1.1" 200 -
search_1      142.167.57.145 - - [25/Mar/2020 22:01:30] "GET /findNotes?searchString=Charles%20Dickens HTTP/1.1" 200 -
search_1      /notes/notes_service/notes.py:35: DeprecationWarning: update is deprecated. Use replace_one, update_one or update_many instead.
search_1      collection.update({"keyword": keyword}, {"keyword": keyword, "Notes": noteslist})
search_1      142.167.57.145 - - [25/Mar/2020 22:01:30] "GET /addNote?searchString=Charles%20Dickens&note=Farman%20Author HTTP/1.1" 204 -
search_1      142.167.57.145 - - [25/Mar/2020 22:01:30] "GET /findNotes?searchString=Charles%20Dickens HTTP/1.1" 200 -
search_1      ['Charles : 21:32:56.751494 Total count: 1.\n', 'Charles : 21:39:36.689076 Total count: 2.\n', 'Charles Dickens : 21:57:36.846445 Total count: 1.\n']
catalogue_1   10.213.176.85 - - [25/Mar/2020 22:02:59] "POST /catalogue-service HTTP/1.1" 200 -
search_1      <Response [200]>
search_1      142.167.57.145 - - [25/Mar/2020 22:02:59] "GET /search?searchString=James%20Joyce HTTP/1.1" 200 -
search_1      ['Charles : 21:32:56.751494 Total count: 1.\n', 'Charles : 21:39:36.689076 Total count: 2.\n', 'Charles Dickens : 21:57:36.846445 Total count: 1.\n', 'James Joyce : 22:02:59.461819 Total count: 1.\n']
catalogue_1   10.213.176.85 - - [25/Mar/2020 22:03:05] "POST /catalogue-service HTTP/1.1" 200 -
search_1      <Response [200]>
search_1      142.167.57.145 - - [25/Mar/2020 22:03:05] "GET /search?searchString=James%20Joyce HTTP/1.1" 200 -
search_1      ['Charles : 21:32:56.751494 Total count: 1.\n', 'Charles : 21:39:36.689076 Total count: 2.\n', 'Charles Dickens : 21:57:36.846445 Total count: 1.\n', 'James Joyce : 22:03:05.461819 Total count: 2.\n']
catalogue_1   10.213.176.85 - - [25/Mar/2020 22:03:21] "POST /catalogue-service HTTP/1.1" 200 -
search_1      <Response [200]>
search_1      142.167.57.145 - - [25/Mar/2020 22:03:21] "GET /search?searchString=James%20Joyce HTTP/1.1" 200 -
search_1      ['Charles : 21:32:56.751494 Total count: 1.\n', 'Charles : 21:39:36.689076 Total count: 2.\n', 'Charles Dickens : 21:57:36.846445 Total count: 1.\n', 'James Joyce : 22:03:05.461819 Total count: 3.\n']
catalogue_1   10.213.176.85 - - [25/Mar/2020 22:03:37] "POST /catalogue-service HTTP/1.1" 200 -
search_1      <Response [200]>
search_1      142.167.57.145 - - [25/Mar/2020 22:03:37] "GET /search?searchString=James HTTP/1.1" 200 -
search_1      142.167.57.145 - - [25/Mar/2020 22:04:18] "GET /findNotes?searchString=James HTTP/1.1" 204 -
search_1      142.167.57.145 - - [25/Mar/2020 22:04:18] "GET /addNote?searchString=James&note=Other%20author HTTP/1.1" 204 -
search_1      142.167.57.145 - - [25/Mar/2020 22:04:18] "GET /findNotes?searchString=James HTTP/1.1" 200 -
search_1      142.167.57.145 - - [25/Mar/2020 22:04:45] "GET /addNote?searchString=James&note=Test%20note HTTP/1.1" 204 -
search_1      142.167.57.145 - - [25/Mar/2020 22:04:45] "GET /findNotes?searchString=James HTTP/1.1" 200 -
search_1      142.167.57.145 - - [25/Mar/2020 22:04:45] "GET /findNotes?searchString=James HTTP/1.1" 200 -
search_1      ['Charles : 21:32:56.751494 total count: 1.\n', 'Charles : 21:39:36.689076 total count: 2.\n', 'Charles Dickens : 21:57:36.846445 total count: 1.\n', 'James Joyce : 22:03:05.461819 total count: 2.\n', 'James Joyce : 22:03:20.954060 total count: 3.\n', 'James : 22:03:36.978373 total count: 4.\n']
catalogue_1   10.213.176.85 - - [25/Mar/2020 22:45:49] "POST /catalogue-service HTTP/1.1" 200 -
search_1      <Response [200]>
search_1      142.167.57.145 - - [25/Mar/2020 22:45:49] "GET /search?searchString=Dickens HTTP/1.1" 200 -
```

PERFORMANCE EVALUATION:

We Successfully Deployed the cloud online book store on AWS instance

SCOPE FOR IMPROVEMENT:

We can improve the access and management modules and we can make web-UI more friendly and Server Size can be Increased.

CONCLUSION:

The purpose of our study was to study users' continuous use of cloud-based bookstores based upon a deconstructed task–technology fit perspective. The results demonstrate that an ideal task–technology fit and individual use context–technology fit are important antecedents of the confirmation of users' expectation toward cloud-based bookstores. In addition, ideal task–technology fit and expectation confirmation are critical factors of users' perceived usefulness of and satisfaction with cloud-based bookstores. Perceived usefulness predicts users' satisfaction of cloud-based bookstores.

Finally, users' perceived usefulness of and satisfaction of cloud-based bookstores are the main motivations as to why users are willing to continue using cloud-based bookstores. The results also demonstrate that our proposed model can explain a sufficient amount of variance (71.8%) of continuous intention to use cloud-based bookstores.

Quote: Let's Make Green World Start Using Cloud E-books to Save Environment.

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THANK YOU