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**ENGINEERING**  
**COMPUTER STREAM**  
**THESIS PROJECT**  
**Journal Publishing System**

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background**

An academic journal, also known as a scholarly journal, is a periodical publication that publishes academic works in a specific discipline. Academic journals provide permanent and open forums for the presentation, scrutiny, and discussion of research findings. Typically, they are peer-reviewed or refereed. Articles presenting original research, review articles, or book reviews are common types of content. They have played a huge role in the further improvement of society starting from the late seventeenth century, by providing a platform where knowledge can be incrementally increased.

In recent times the scholarly communication process as a whole has been subject to profound transformative pressures, driven principally by technology and economics. At the same time, though, the underlying needs of researchers remain largely unchanged changes can be considered under three headings. These are changes to the publishing market (like globalization and the growth of emerging regions), changes to the way researches are conducted (e.g. use of networks; growth of data intensive and data-driven science; globalization of research) and changes to public policy. This makes sure that

The Internet has revolutionized the production of, and access to, academic journals, aiding the aforementioned transformation making their contents available online via services subscribed to by academic libraries. Individual articles are subject-indexed in databases such as Google Scholar. Some of the smallest, most specialized journals are prepared in-house, by an academic department, and published only online – such form of publication has sometimes been in the blog format though some, like the open access journal Internet Archaeology, use the medium to embed searchable datasets, 3D models, and interactive mapping. Currently, there is a movement in higher education encouraging open access, either via self-archiving, whereby the author deposits a paper in a disciplinary or institutional repository where it can be searched for and read, or via publishing it in a free open access journal, which does not charge for subscriptions, being either subsidized or financed by a publication fee. The existence of online publishing platforms facilitates this process.

## **1.2 Statement of Problem**

Our country Ethiopia has long been hailed as the source of a vast amount of knowledge and history in ancient times. Despite this glowing past our recent reputation is nowhere near that in a lot of aspects including the education system. One of the reasons this happened is because we as a society have a very low culture of passing on knowledge and building on it. The proposed system makes sure that high quality researches are critically reviewed raising their standards and afterwards accessible to anyone interested.

## **1.3 Objective**

### **1.3.1 General Objective**

The general objective for the development of this Academic Journaling System is to enable Ethiopian scholars to have access to high quality peer reviewed articles, and also to enable researchers across the globe have access to articles published by Ethiopian researchers without any form of restriction.

### **1.3.2 Specific Objectives**

In order to achieve the general objective, the following specific objectives are identified.

- Provide an online file tracking system.
- Provide online submission and management of all content related to a researcher.
- Provide a secure user and file access management.
- To implement a clear research review process.
- Provide a vast repository that is able to hold various researches.

## **1.4 Scope**

The scope of this project is to develop an Academic Journaling System and provide environment through which researchers can publish their work and get critically reviewed. This project aims to provide online research curating system with information about how far along the review process a certain research is and give access for uploading new studies, view both published and pending works.

Limitation of the project include sandboxed environment was used to develop the system.

## **1.5 Significance of the Study**

The proposed system will provide an easy and convenient way to facilitate the review and publishing of academic researchers conducted by Ethiopian researchers. By doing so it will create a system where researchers can ensure that they can actively track and monitor the stage of reviewing process their work is at. This means that they can hold publishers accountable to publishing their work in a timely manner. In addition to this it'll create a rich community of academics that have a platform to get their work out there. Articles in scientific journals can be used in research and higher education. Scientific articles allow researchers to keep up to date with the developments of their field and direct their own research. This creates a much-needed system which is severely lacking in Ethiopia, with the availability of readily available research material laying the groundwork for further improvement it'll bring about significant growth in the country.

## CHAPTER TWO

### LITERATURE REVIEW

**The STM**, reported an overview of scientific and scholarly journal publishing. Journals form a core part of the process of scholarly communication and are an integral part of scientific research itself. Journals do not just disseminate information, they also provide a mechanism for the registration of the author's precedence; maintain quality through peer review and provide a fixed archival version for future reference. They also provide an important way for scientists to navigate the ever-increasing volume of published material. The proportion of electronic-only journal subscriptions has risen sharply, partly driven by adoption of discounted journal bundles. social media do seem likely to become more important given the rapid growth in membership of the newer scientific social networks (Academia, Mendeley, ResearchGate), trends in general population, and the integration of social features into publishing platforms and other software. The adoption of mobile computing devices in the general population has been, and continues to be extremely rapid, even by the standards of the internet age. There are important technology choices to be made for publishers in addressing the overlapping issues of mobile access that go beyond the scope of this report. Our journal website platform will offer a mobile-optimized interface by using responsive or adaptive design. [1]

**ARNO**, the ARNO project—Academic Research in the Netherlands Online—has developed software to support the implementation of institutional repositories and link them to distributed repositories worldwide. Project participants include the University of Amsterdam, Tilburg University, and the University of Twente. Released for public use in December 2003, the ARNO system has been in use at the universities of Amsterdam, Maastricht, Rotterdam, Tilburg, and Twente. It is designed to provide a flexible tool for creating, managing, and exposing OAI-compliant archives and repositories. The system supports the centralized creation and administration of repository content, as well as end-user submission. While ARNO offers considerable flexibility as a content management tool, the system does not provide an end-user interface with end-user search capabilities. Our journal repository will be accessible to end users with a broad aspect of functionalities. [2]

# CHAPTER THREE

## METHODOLOGY

### 3.1 Methodology Used

Methodology specifies the method and technology used to develop the software system such as, the methods used to gather data, approach used to design the software system, software and hardware requirements used to implement the system. The main goal of this study is to develop NFT marketplace on Ethereum with polygon and next.js by using agile software development method.

#### **Agile software development method**

Agile software development refers to software development methodologies centered on the idea of iterative development. The ultimate value in agile development is that it enables teams to deliver value faster, with greater quality and predictability and greater aptitude to respond to change. The benefits of agile are:

- Highly responsive to customers development requests
- Faster time to market
- Project visibility and transparency
- Risk reduction

Agile helps teams deliver high quality software on time and on budget.

#### **ReactJS**

React.js is a JavaScript library that was created by Facebook. React is a library for building composable user interfaces. It encourages the creation of reusable UI components, which present data that changes over time. React implements one-way reactive data flow, which reduces the boilerplate and is easier to reason about than traditional data binding. React "reacts" to state changes in your components quickly and automatically to re-render the components in the HTML DOM by utilizing the virtual DOM. The virtual DOM is an in-memory representation of an actual DOM. By doing most of the processing inside the virtual DOM rather than directly in the browser's

DOM, React can act quickly and only add, update, and remove components which have changed since the last render cycle occurred.

React provides different features the major features include:

- **JSX:** JSX is JavaScript syntax extension. It isn't necessary to use JSX in React development, but it is recommended.
- **Virtual DOM:** This characteristic of react helps to speed up the app development process and offers flexibility.
- **Component Based Architecture:** React is all about components. You need to think of everything as a component. This will help you maintain the code when working on larger scale projects.
- **Unidirectional data flow and Flux:** React implements one-way data flow which makes it easy to reason about your app. Flux is a pattern that helps keeping your data unidirectional.

React is based on components and states. This is what makes react such a popular library. When you want to create an application, you usually break it into simpler parts. When programming with React, you will want to break your interface into its most basic parts, and those will be your React components.

## ASP.NET

ASP.NET is an open-source, server-side web-application framework designed for web development to produce dynamic web pages. It was developed by Microsoft to allow programmers to build dynamic web sites, applications and services. ASP.NET works on top of the HTTP protocol, and uses the HTTP commands and policies to set a browser-to-server bilateral communication and cooperation.

ASP.NET is a part of Microsoft .Net platform. ASP.NET applications are compiled codes, written using the extensible and reusable components or objects present in .Net framework. These codes can use the entire hierarchy of classes in .Net framework.

The ASP.NET application codes can be written in any of the following languages:



- C#
- Visual Basic.Net
- Jscript
- J#

ASP.NET is used to produce interactive, data-driven web applications over the internet. C# is used to develop the proposed project.

## C# (C Sharp)

C# is a general-purpose, object-oriented programming language that is structured and easy to learn. It runs on Microsoft's .Net Framework and can be compiled on a variety of computer platforms. As the syntax is simple and easy to learn, developers familiar with C, C++, or Java have found a comfort zone within C#.

C# is a boon for developers who want to build a wide range of applications on the .NET Framework—Windows applications, Web applications, and Web services—in addition to building mobile apps, Windows Store apps, and enterprise software. It is thus considered a powerful programming language and features in every developer's cache of tools.

## Features of C#

The C# programming language has many features that make it more useful and unique when compared to other languages, including:

- **Object-oriented language:** Being object-oriented, C# allows the creation of modular applications and reusable codes, an advantage over C++. As an object-oriented language, C# makes development and maintenance easier when project size grows. It supports all three object-oriented features: data encapsulation, inheritance, interfaces, and polymorphism.
- **Simplicity:** C# is a simple language with a structured approach to problem-solving. Unsafe operations, like direct memory manipulation, are not allowed.
- **Speed:** The compilation and execution time in C# is very powerful and fast.
- **A Modern programming language:** C# programming is used for building scalable and interoperable applications with support for modern features like automatic garbage

collection, error handling, debugging, and robust security. It has built-in support for a web service to be invoked from any app running on any platform.

- **Type-safe:** Arrays and objects are zero base indexed and bound checked. There is an automatic checking of the overflow of types. The C# type safety instances support robust programming.
- **Interoperability:** Language interoperability of C# maximizes code reuse for the efficiency of the development process. C# programs can work upon almost anything as a program can call out any native API.

## HTML

HTML is a markup language that defines the structure of our content. HTML consists of a series of elements, which we use to enclose, or wrap, different parts of the content to make it appear a certain way, or act a certain way. The enclosing tags can make a word or image hyperlink to somewhere else, can italicize words, can make the font bigger or smaller, and so on.

## CSS

Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of a document written in HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS describes how elements should be rendered on screen, on paper, in speech, or on other media. CSS is among the core languages of the open web and is standardized across Web browsers according to W3C specifications.

## 3.2 Hardware Requirement

The only hardware requirement to develop the system is personal computer which will enable us to host a local server in order to see our progress and test the frontend functionalities by using necessary web development software tools.

### 3.3 Software Requirement

The software tools that are used to design the system are: Visual Studio Code, Postman, Node.js, and Python.

**Visual Studio Code:** Visual Studio Code is a code editor redefined and optimized for building and debugging modern web and cloud applications. It is compatible with all platforms and environment.

**Postman:** Postman is an API development tool which helps to build, test and modify APIs. It has the ability to make various types of HTTP requests like GET, POST, PUT, PATCH, saving environments for later use, converting the API to code for various languages like JavaScript, Python.

**Node.js:** Node.js is an open-source, cross-platform, back-end JavaScript run runtime environment that runs on the V8 engine and executes JavaScript code outside a web browser.

### 3.4 WorkPlan

Month	April				May				June	
Week	1	2	3	4	1	2	3	4	1	2
Literature Review										
Write A Proposal										
Define Requirements										
Design										
Development										
Testing										
Deployment										
Conclusion And Recommendation										

### 3.5 Budget Breakdown

Items	Quantity	Cost(ETB)
Web Hosting Per Year	1	10,000
Laptop Computers	2	100,000
Internet Package (Quarterly)	1	2,100
<b>TOTAL</b>		<b>112,100</b>

## **CHAPTER FOUR**

### **CONCLUSION**

Technology has made significant progress over the years to provide various people across the globe easy and free access to up-to date knowledge. This project proposes to bring about these advances into the publishing and research scene making them readily available using state of the art methods. The main problems it solves are those of accessibility of local researches and provides researchers with a chance to be able to actively track and monitor the state of their research review.

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