

# Internship Report as an Automation Engineer

by

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An internship report submitted to the Department of Computer Science  
and Engineering  
in partial fulfillment of the requirements for the degree of  
B.Sc. in Computer Science and Engineering

Department of Computer Science and Engineering  
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January, 2026.

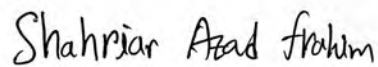
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# Declaration

It is hereby declared that

1. The thesis submitted is my own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. We have acknowledged all main sources of help.

**Student's Full Name & Signature:**

A handwritten signature in black ink that reads "Shahriar Azad Frahim". The signature is written in a cursive, slightly slanted style.

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# Approval

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# Abstract

This report presents the outcomes of an internship conducted at NEXT Ventures, a multinational fintech company, where the primary focus was on workflow automation using the open-source platform n8n, alongside frontend engineering practices. The internship aimed to identify repetitive and time-consuming operational tasks and transform them into scalable, automated workflows to improve efficiency, accuracy, and reliability within organizational processes.

Throughout the internship, several real-world automation solutions were designed and implemented, including automated payment processing, Know Your Customer (KYC) onboarding, meeting scheduling with reminders, and weekly performance tracking systems. These workflows integrated multiple services and APIs, significantly reducing manual intervention and operational errors. An iterative Software Development Life Cycle (SDLC) approach was followed to ensure continuous improvement, stakeholder feedback incorporation, and system scalability.

In addition to automation, the internship involved hands-on frontend development using modern technologies such as React, Tailwind CSS, API integration, state management, asynchronous programming, and performance optimization techniques. Close collaboration with design and product teams ensured usability, responsiveness, and alignment with business requirements.

The internship demonstrates the practical applicability of low-code workflow automation tools like n8n in a real-world fintech environment. The results highlight how effective automation and frontend integration can enhance productivity, operational transparency, and long-term process optimization. This experience contributed significantly to the development of technical, analytical, and professional skills relevant to modern software engineering practices.

**Keywords:** Workflow Automation, n8n, Frontend Engineering, Low-Code Platforms, Fintech Systems, API Integration, Process Optimization, Software Development Life Cycle (SDLC)

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# Chapter 1

## Introduction

### 1.1 Background

The internship was a good practical experience in automating processes with n8n, an open-source workflow automation tool. Most of my time at Next Ventures was devoted to designing and developing automation workflows to help mitigate operational overhead and enhance efficiency in development and deployment processes. The internship was centered on the detection of repetitive tasks, time-consuming tasks, and converting them into automated pipelines that linked various applications, services and APIs with the minimum manual intervention.

Besides automation related tasks, I also engaged in the front-end engineering work, which required me to create the user-friendly functions without compromising on the usability, performance, and scalability guidelines. This twofold engagement enabled me to learn how automation workflows may be successfully incorporated into front-end systems to produce more seamless flow of operations and efficient engineering activities.

The experience also provided me with hands-on experience with the workflow design, data flow management between linked services, and security concerns required to create scalable automation systems. The internship emphasized the role of interface development and optimized automation processes, showing that a well-constructed automation can be a productive factor, enhancing system reliability and the general efficiency of the engineering process.

### 1.2 Project Objective

The main aim of this internship entailed the design, development, and implementation of automation solutions of processes with n8n so as to improve efficiency of operations, decrease the number of manual interventions, and enhance reliability of organizational processes. The project was aimed at discovering the repetitive time-consuming tasks, and their automation, scaling, and ensuring security by combining different services and APIs.

At the end of the internship, the project was to accomplish the following specific objectives:

Develop and install a payment processing system that is automatic to have payments executed timely, accurately and uniformly with minimal human error and delays in operations.

Design lean Know Your Customer (KYC) onboarding processes that can increase regulatory compliance, greater data accuracy and lower manual processes and verification errors.

Install an automated meeting scheduling and coordination system, such as calendar syncing, automated reminders, and follow-ups, to enhance communication and scheduling with a team.

Design a weekly work review and performance tracking automation, which would allow systematically gathering, organizing, and reporting work-related data to ensure transparency and informed decision-making.

Due to the integration potential of n8n, it can be used to bridge various services and APIs, which eliminates redundancy in workflows, streamlines data flow, and enhances the scalability and sustainability of operational processes.

All in all, these goals were aimed at proving how workflow automation could be applied into practice within the framework of a real-world organizational setting and proving how automation could be used to achieve better productivity, operational stability and long-term process optimization.

# Chapter 2

## Company Profile

NEXT Ventures is a multinational financial technology company which designs and delivers technologically-based financial products and services to retail traders and online market participants. The company is reputed by its more well-known proprietary (prop) trading platform FundedNext which allows traders to capitalize on capital and share profits with traders who qualify and its international CFD brokerage platform FNmarkets which gives access to global financial markets such as stocks, commodities, futures and currencies.

### 2.1 Core Products and Services

NEXT Ventures also has a full-fledged fintech ecosystem under two major titles, namely, FundedNext and FNmarkets, both of which are designed to assist retail traders in the process of their trading journey. FundedNext is also a proprietary (prop) trading initiative, which allows future traders to engage in structured tests. Those traders who pass such tests are offered funded trading accounts as well as profit sharing. The model has been very popular in the global arena and has attracted over 150,000 traders, and has created about 7 million monthly traffic to the web sites thus demonstrating its immense presence and scalability in the market. FNmarkets however is a registered International Contract for Difference (CFD) broking company with Company License No. BFX2024210 issued by Mwali International Services Authority. The platform will give traders the opportunity to trade a wide variety of financial instruments in the world such as stocks, futures, commodities, and currencies. FundedNext and FNmarkets are jointly designed as an ecosystem of fintech that assists the traders in entering and assessing the platform to integrate into the global financial markets and ensures continuity, compliance, and technological stability.

### 2.2 Workflow of NEXT Ventures

To provide the high-quality digital products and services, NEXT Ventures adheres to the phase-based and cooperative development process backed by the qualified developers and engineers. This process will provide efficiency, code quality as well as accountability among the teams, especially in the front-end engineering domain. All workflow stages are part of the process of enhancing consistency, traceability,

and efficiency in product development.

### **2.2.1 Front end workflow in NEXT Ventures**

The NEXT Ventures frontend process is based on the latest development trends and tools. The developers have secure access to the company private Git repositories on GitHub, and the permissions are given depending on team roles and duties. This access control results in security and easy co-working of team members.

After permission is received, developers clone the repository on their local machine via normal Git commands. The first step in the setup involves preparation of environment configuration by duplicating the `env.example` file into `env` and assigning values as necessary. Depending on what package manager has been designated to be used on the project, project dependencies can be installed through `npm install` or `yarn install`.

Task management is managed with the help of ClickUp, which is also the main platform on which tasks are assigned, tracked, and managed. In every task there are set requirements, priorities and deadlines. The members of the team choose and perform tasks in accordance with their roles assigned and there is transparency and accountability in the development cycle.

In each task assigned, developers make a specific branch in the feature of Git that follows a regular coding pattern like `feature/` or `bugfix/` usually with a reference to the task name or identifier. The use of this branching strategy promotes the systematic development and eases the tracking of codes. At the development stage, the code is created, tested and formatted based on the accepted coding conventions such as the creation of modular components, the use of React hooks and the use of Tailwind CSS to style the code.

When all development is complete, developers merge their work to the remote which is then submitted as a Pull Request (PR) to the main (or development) branch. Each PR has an overview of changes and a status of the task that is also updated in ClickUp. The PR thus submitted is then reviewed by a formal code review process, with members of the team reviewing logic, performance and general quality of the code. Once the feedback is addressed, the changes are accepted and integrated into the main codebase making sure it is stable and maintains integrity.

## **2.3 Overview of NEXT Ventures**

NEXT Ventures is a multinational fintech firm based in Bangladesh, which was founded in 2016 under the Jayed Corp. name, and rebranded in 2022. The company is today catering to over 220,000 traders in over 170 countries, and has two main flagship platforms, FundedNext and FNmarkets. NEXT Ventures has a global presence with operational offices in Bangladesh, the United Arab Emirates, Malaysia, Sri Lanka, and Cyprus employing more than 450 professionals.

The company has acquired international awareness due to strategically inclined influencer cooperation and significant successes such as national award awarded to its Chief Executive Officer. Going forward NEXT Ventures has aimed to reach 50 million traders in 2033, and has a heavy focus on technological innovation, financial inclusion and trader empowerment. NEXT Ventures is considered one of the best

international startups in Bangladesh because of its fast growth and international coverage and adherence to innovations.

# Chapter 3

## Literature Review

### 3.1 Workflow Automation

Automation of workflow has become a crucial element in contemporary software development and operational management, especially in the contexts where a number of services, APIs, and data sources have to be coordinated. The fact that low-code automation platforms can shorten the development time, limit the number of people to be involved in the process, and enhance the reliability of processes have drawn the interest of both scholarly literature and practice in the field. The n8n is one of such platforms; it is an open-source workflow orchestration platform allowing the creation and use of complex automation pipelines using a visual, node-based interface.

The automation system created in the course of the internship was built on the workflow orchestration model of n8n that represents a flexible and extensible low-code platform of application, API, and database integration. The model enables workflows to be created through pre-existing nodes which can be triggered, actions, conditions and integrations and this provides quick prototyping and an iterative refinement process. The n8n graphical character makes it easier to create automation processes as well as increase the maintainability and usability of the automation process among the technical and non-technical stakeholders.

In the first stage of the implementation, a dummy database was used to recreate the interactions of real data in the world, as well as to test workflow logic without revealing sensitive data. This is the best practice based on the available literature where the test environment is normally introduced to minimize the risk and to provide a stable system before it is deployed on a large scale. The last implementation phase was to involve integration with a production-grade database which would guarantee data persistence, security, and scalability.

The following main characteristics that were often referred in the literature on workflow management and automation were seen as a prerequisite of enhancing the efficiency of operations and represented in the system design:

#### 3.1.1 Workflow Visualization and Monitoring

Similar to a Scrum or Kanban board, which is employed in project management, the workflow canvas in n8n serves as a central visualization interface of automated processes. Studies show that the visual workflow representation has a great positive impact on transparency and system understanding. With the live workflow view of

n8n, the team members are able to see the execution paths, the current execution status in real-time and the bottlenecks or failures early enough. This allows quicker troubleshooting, reduces disruption of the workflow and allows ongoing enhancement of automated processes.

### **3.1.2 Process Estimation and Process Optimization**

The proper estimation of time, calculation resources and dependencies between systems is one of the key factors in the success of automation programs. Literature about process automation highlights the necessity to have the workflow modeled and tested before implementation to prevent inefficiency and waste of resources. The node-based architecture of n8n enables the workflow to be separated, tested and optimized in place. This modular structure helps to predict the results of forecasting more easily, allows the managers to track the performance of the execution, and allows them to make data-oriented decisions in order to optimize the automation strategies.

### **3.1.3 Automation Project Scope Management**

A common theme in the literature on automation and software projects is that poorly defined boundaries of automation projects may cause scope creep and project failure due to poor scope definition. n8n encourages clear scope definition, which is achieved by explicitly configuring triggers, actions, conditions, and integrations per workflow. This is an organized process to make sure that only pre-established processes are automated, and the remainder of the operations are manual in nature. Consequently, there is less ambiguity, project goals are not lost, and the products of the workflow are consistent as desired.

In general, the literature reviewed justifies the application of low-code workflow automation platforms like n8n in the creation of scalable, maintainable, and transparent automation. The aspects which are highlighted in the literature such as workflow visualization, process estimation and scope management are more or less similar to the principles of design that were employed in this internship. Such results confirm the appropriateness of n8n as a powerful tool to automate processes in multisystems operating in dynamic conditions and give a solid theoretical basis to the practical application of the tool implemented in the current project.

## **3.2 Front End Logics**

### **3.2.1 Web Worker**

Web worker is a background script that runs from the main browser thread which helps to not freeze UI. Allows heavy or long JS operations.

#### **Use Case in NEXT Workflow:**

- For ClickUp tasks requiring large data parsing (e.g., CSV import, filtering 1000+ rows), a Web Worker is implemented.

- Reduces UI freezing and improves performance.

```
const worker = new Worker(new URL('./heavyTaskWorker.js', import.meta.url));
worker.postMessage(data); // send data
worker.onmessage = (e) => { updateState(e.data); };
```

- `const worker = new Worker(new URL('./heavyTaskWorker.js', import.meta.url));`  
`worker.postMessage(data);`  
`worker.onmessage = (e) => { updateState(e.data); };`

### 3.3 Rendering Method

Process of how UI elements are displayed on the screen with frameworks like React.

**Use Case in NEXT Workflow:**

- While creating tasks like "Create User Dashboard UI", use React to render data-driven components.
- Optimize with `React.memo`, `Suspense`, or lazy loading to improve performance.

### 3.4 API Calls

Fetching data from backend services using HTTP requests (usually with `Axios` or `fetch()`).

**Use Case in NEXT Workflow:**

- For tasks like "Show list of blog posts", call endpoints (e.g., `/api/posts`) to get data.
- Ensure use of `.env` for base URL and token auth headers.

```
const response = await axios.get(`${process.env.API_URL}/users`, {
  headers: { Authorization: `Bearer ${token}` },
});
```

### 3.5 State Management

It controls the handling of the data between components like React's `useState`, `Context API`, `Redux` etc. **Use Case in NEXT Workflow:**

- Use `useState` for local, temporary UI state.
- Use `useContext` or `Redux/Zustand` when state is shared (e.g., logged-in user info across routes).



```
const fetchData = async () => {  
  try {  
    const res = await fetch("/api/data");  
    const json = await res.json();  
    setData(json);  
  } catch (err) {  
    console.error("Failed to fetch data", err);  
  }  
};
```

## 3.6 Async Programming

Process of writing code that doesn't block the main thread, usually with `async/await`, Promises, or event loops.

**Use Case in NEXT Workflow:**

- API tasks, animations, debounce handling in forms.
- Wrapped in `try/catch` for error handling and smooth UX.

# Chapter 4

## Internship Training Phase

### 4.1 Overview

Being offered the opportunity to work as a frontend intern at Next Ventures has been a significant turning point in my academic and professional development. Students who obtain practical work experience have a significant advantage in the competitive job market of today. Additionally, it helps in the transition from school to the workplace. It can be difficult to put theoretical knowledge to use in practical situations, particularly when it comes to adjusting to real-world industry norms and procedures. I joined Next Ventures as a Frontend Development Intern, which also fulfills the internship requirement for graduation from BRAC University. More importantly, this opportunity has allowed me to learn modern development workflows, tools, and coding standards in a real tech environment. When I first started, I had very little understanding of how professional teams function—especially within startups. Fortunately, my supervisor and team leads provided guidance and made the onboarding process clear and supportive. Next Ventures doesn't follow a formal training phase for interns; instead, they assign real tasks from day one. I was involved in active sprint tasks, collaborating through ClickUp, Git, and code reviews. My supervisor has consistently helped me understand each stage of the work cycle, from repo setup to feature development and PR submission. While I've included relevant visuals and screenshots in this report, I've kept certain internal dashboards and code views confidential for privacy reasons.

### 4.2 Using Postman

Postman is a common API client that allows creating, sharing, testing, and documenting APIs simple for developers and testers. Users can make and store basic and complex HTTP/s requests, as well as read their responses. It is mainly used for various purposes. To mention a few Test APIs before coding the UI, Debug API issues, Understand response structure, Set authentication tokens easily etc.

#### 4.2.1 Usage in Front End Workflow

- **1) GET request:** To preview how an endpoint returns data before integrating it in your React component. Example: GET <https://api.nextventures.io/posts>

- **2) POST request:** To simulate form submission and check if the backend accepts your payload.
- **3) Error handling:** Test how the API responds to invalid inputs, so you know what errors to catch in the frontend (like 400, 401, or 500).

## 4.3 Tutorials and Assistance

In this case I was widely instructed by my supervisor who helped me learn the basic aspects of the workflow. Additionally, an LMS was provided which consisted of all resources and instructions of how to deal with the work perfectly.

## 4.4 Communications and Meetings

We usually conducted daily huddle meetings for the updates and workflow continuation. Additionally we conducted weekly and monthly meetings for any process updates and overview of all workflow throughout the period.

## 4.5 Work Environment

For me, working at Next Ventures has been a really interesting and worthwhile educational experience. I've had the opportunity to meet some wonderful people, and I've bonded with a few of them right away. No one stops you from sharing ideas, and the team here is very encouraging. I was treated like a regular team member from day one rather than "just an intern", which made it easier for me to fit in with the company's culture. Since the majority of the work is done remotely, we typically begin the day with a team meeting and then group calls to keep team members connected while working. This isn't required, but it certainly facilitates collaboration and fosters a vibrant, office-like atmosphere online.

# Chapter 5

## Internship Workplan

### 5.1 Overview of the Work Plan

The automation system developed during this internship was primarily implemented using n8n, following a collaborative and iterative development approach. Given that the project was executed as a team-based initiative and involved evolving operational requirements, the iterative model of the Software Development Life Cycle (SDLC) was selected as the most appropriate framework. This model supported incremental development, frequent validation, and continuous improvement of automation workflows throughout the internship period. The automation system developed during this internship was primarily implemented using n8n, following a collaborative and iterative development approach. Given that the project was executed as a team-based initiative and involved evolving operational requirements, the iterative model of the Software Development Life Cycle (SDLC) was selected as the most appropriate framework. This model supported incremental development, frequent validation, and continuous improvement of automation workflows throughout the internship period.

The major objective in the work plan was to develop and implement a sustainable and reusable automation system, which the organization could embrace in the long run. Flexibility and scalability were also stressed upon to ensure that the system can be expanded to embrace future integrations, process expansions and changes in the business without requiring major changes to the architecture. Instead of using predetermined or strict specification, the development process adopted flexibility by using the design, implementation, evaluation, and refinement cycles that were repeated.

Every development cycle followed a systematic order of activities. The first step in automation was determining the requirements by talking to the stakeholders and studying the available manual processes. These needs were then converted into executable workflows using n8n node-based architecture. The working processes were tested in controlled settings once they were implemented to make sure they were accurate, reliable and in line with the operational objectives. The team members and stakeholder feedback were then included to streamline logic, performance and usability in further iterations.

One of the most notable benefits of this incremental work plan is that it provides timely functional automation solutions, thus the ability to provide quick feedback and reduce the risk of changes at the end of the work. The continuous evaluation

and workflow improvement allowed the team to react effectively to the evolving requirements using a minimum of cost and effort. This strategy made it possible to guarantee that the end automation system was not only in technical essence but also it was highly correlated with organizational requirements, operational effectiveness, and durability.

## 5.2 Implement the project management and employee management systems

The ability to create, update, and stay informed about the several projects that are underway at the same time is the main focus, according to the preliminary requirements analysis. Typically, a single designated "Project Lead" oversees a group of highly skilled employees working on each project. Therefore, it is critical to be able to monitor both projects and the individuals working on them. Therefore, generating tables for projects and employees is the first step in the Protracker process. Design: To create an interactive, responsive, and user-friendly website, the frontend is being constructed using JavaScript and Bootstrap.

A flow chart of the workflow is shown in Figure 5.1:

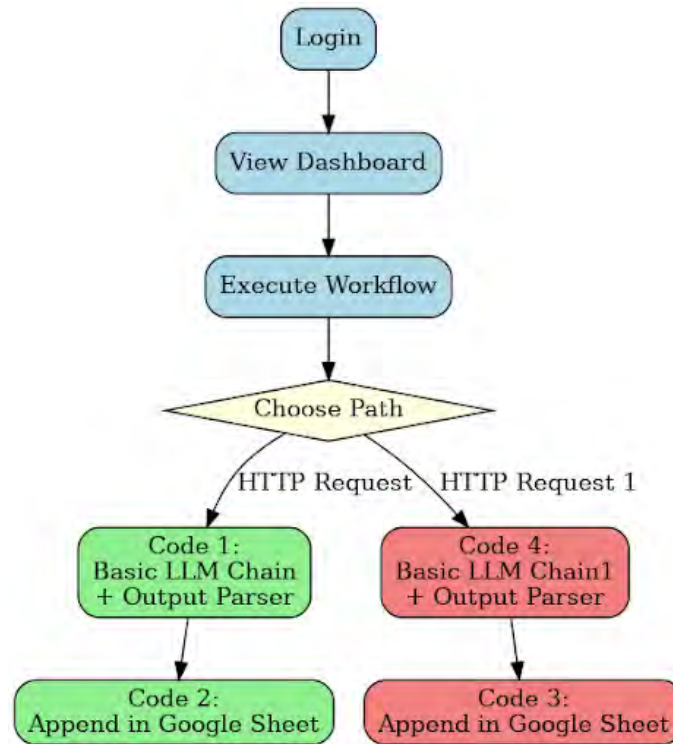


Figure 5.1: A flow chart of the workflow

## 5.3 Implement Task Management

For most employees, the scrum board popping up right after login is the most important feature of any project management system. Starting the day off with clear knowledge of the day's tasks is vital for a productive environment. Each

employee will have their dashboard tailored to tasks directly involving them, sorted by a built-in priority calculator. Users will also be able to update and create tasks, and add more users to a particular project. Users can also view their performance, generated by the app dynamically based on tasks completed and time taken to complete a task. Managers can receive reports on team performance.

# Chapter 6

## Development Phase

### 6.1 Early Stage Development

#### 6.1.1 Quality Analysis

As any Software Development Life Cycle, the first, and probably the most important step is Analysis. After interviews with fellow teammates, the following primary requirements were identified:

- The app must track projects, viewable and updateable by select staff.
- The app must track individual tasks.
- Generate performance reports.



#### 6.1.2 Design

n8n is being developed using the code-first approach. However, The following ER diagram has been drafted to aid database creation early on in the design stage.



### 6.2 Working with other departments for collaboration

#### 6.2.1 Working with design team

The design team is responsible for creating the visual and interactive layout of the product using tools like Figma. I get thorough component breakdowns and user

interface mockups as a developer, which help me organize the code I write. Using tools like React and Tailwind CSS, I convert these static designs into dynamic, responsive web components. I speak with the designers directly to offer substitutes or ask for clarification when there are unclear or technically impossible design details. This back-and-forth ensures technical viability while preserving design accuracy.

### **PC/Desktop Design**

- Designed for large screens (typically 1200px and above).
- Full layout with sidebars, navigation bars, and more complex component structures.
- More space is available for charts, tables, and detailed content.

### **Tablet Design**

- Optimized for medium-sized screens (768px to 1024px).
- Layout often shifts to a single-column structure or collapsible menus.
- Touch-friendly elements are introduced.

### **Mobile Design**

- Designed for small screens (typically under 768px).
- Prioritizes core content and features in a simplified, scroll-based layout.
- Navigation is usually hidden behind a menu.

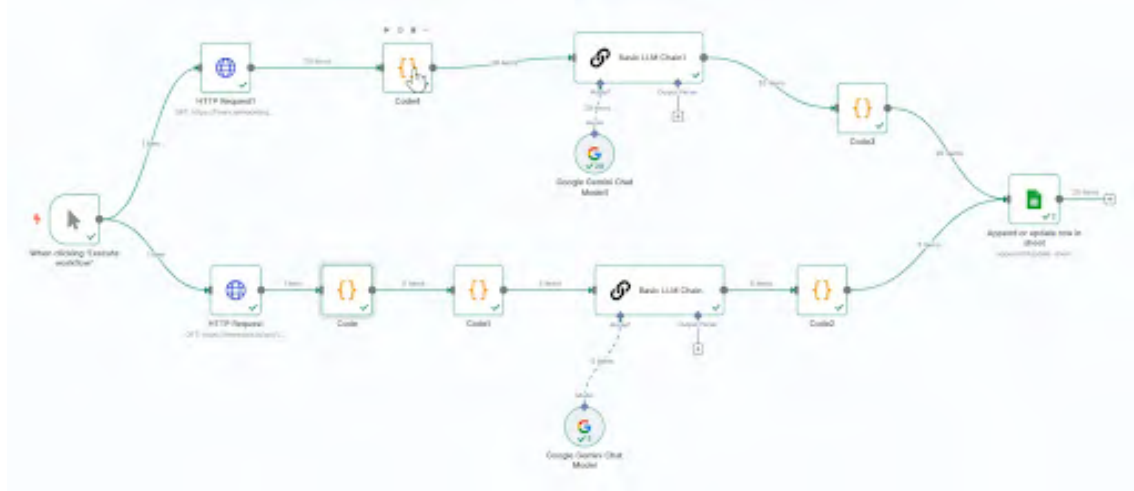
## **6.2.2 Working with product team**

The product team outlines the functional goals and user stories for each task. They manage the overall direction of features through platforms like ClickUp, where tasks are detailed with specific requirements and acceptance criteria. During sprint planning or task breakdown sessions, I work with the product team to understand the scope, purpose, and expected outcome of a feature. If needed, I offer input on feasibility, performance concerns, or potential improvements.



## 6.3 Preliminary Development

n8n is designed to be user-friendly and time-efficient. After a user logs in, he is taken to the home page, which automatically prioritizes and lists upcoming events, daily tasks, and so on. Each event can be clicked on to further dive into details.



After executing the project it append in the google sheet in a following manner:

| id | link                                                                                                                                                    | description | publishedDate | sourceName | country | summary                                                                                                                                                 |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------|------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | CTO Realty Growth (NYSE:OTC) Insider Buying and Upcoming Financial Results                                                                              |             | N/A           | N/A        | N/A     |                                                                                                                                                         |
| 2  | Guidewire Software (NYSE:GWS) is enhancing its product offerings. This improvement is achieved by integrating marketplace                               |             | N/A           | N/A        | N/A     | I apologize, but the content of the news article was not provided, only its metadata. Therefore, I am unable to generate a summary.                     |
| 3  | McComick Real Estate (NYSE:MC) is a real estate company, and it is not directly related to the trading industry. It reports that McComick Real          |             | N/A           | N/A        | N/A     | Guidewire Software (NYSE:GWS) is enhancing its product offerings. This improvement is achieved by integrating marketplace                               |
| 4  | Walgreens Boots Alliance reported stronger-than-expected third-quarter earnings, primarily driven by effective cost-cutting mea                         |             | N/A           | N/A        | N/A     | This article is about McComick, a real estate company, and it is not directly related to the trading industry. It reports that McComick Real            |
| 5  | H.B. Fuller Inc. (NYSE:FUL) reported a significant 10% surge following the announcement of earnings per share that surpassed anal                       |             | N/A           | N/A        | N/A     | Walgreens Boots Alliance reported stronger-than-expected third-quarter earnings, primarily driven by effective cost-cutting mea                         |
| 6  | Midwestern Real Estate (NYSE:MR) reported a significant 10% surge following the release of its fourth-quarter earnings, which significantly surpassed a |             | N/A           | N/A        | N/A     | H.B. Fuller's stock experienced a significant 10% surge following the announcement of earnings per share that surpassed anal                            |
| 7  | Acuity Brands (NYSE:ATY) reported strong financial performance for its third quarter. The company successfully surpasses                                |             | N/A           | N/A        | N/A     | Midwestern Real Estate (NYSE:MR) reported a significant 10% surge following the release of its fourth-quarter earnings, which significantly surpassed a |
| 8  | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Acuity Brands (NYSE:ATY) reported strong financial performance for its third quarter. The company successfully surpasses                                |
| 9  | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |
| 10 | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |
| 11 | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |
| 12 | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |
| 13 | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |
| 14 | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |
| 15 | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |
| 16 | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |
| 17 | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |
| 18 | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |
| 19 | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |
| 20 | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |             | N/A           | N/A        | N/A     | Midwest Technology (NYSE:MT) reported strong financial performance for its third quarter. The company successfully surpasses                            |

Project Lead is the Staff/Manager in-charge of that project. As a developer, or Executive officer, it is required to know who is responsible for any given project. The Update History table shows the previous iterations of said project, and the tasks table lists all available tasks for that project.

## 6.4 Testing Phase

### 6.4.1 Quality Analysis

As any Software Development Life Cycle, the first, and probably the most important step is Analysis. After interviews with fellow teammates, the following primary requirements were identified:

- The system shall track projects, viewable and updateable by authorized personnel.

- The system shall track individual tasks.
- The system shall generate performance reports.



## 6.4.2 Design

n8n is being developed using the code-first approach. However, The following ER diagram has been drafted to aid database creation early on in the design stage.



# Chapter 7

## Future Work and Conclusion

### 7.1 Future Plan

#### MANAGEMENT AND KNOWLEDGE - RELATED FEATURES:

To make decisions and to manage quite successfully, it is necessary to have a clear picture of the current processes of work in order to have access to the indicators of the performance, which are measurable. As a next step, the automation framework created with the help of n8n could be expanded to offer better monitoring of the workflow and performance metrics. Monitoring key workflow indicators, i.e., the average duration of automated operations, incidence of workflow failures, and the number of problems identified after each workflow cycle, the managers will be able to obtain information that can be acted upon to gain a better understanding of the efficiency of the processes and the stability of the system used. These metrics would help in making data-driven decisions and it would be possible to identify bottlenecks in the performance.

Even though n8n offers a lightweight monitoring mechanism by default, it may grow into collecting more metrics either via custom logging, dashboard integration or external monitoring tools in the future. These improvements would enable teams to track trends during the years, compare the working of the workflow between departments, and determine the influence of automation on the productivity of operations.

Knowledge reuse and institutional learning is another important aspect that should be considered in the future. Because n8n is built to coordinate many workflows in various projects and areas, automation logic written in one application could be reused, modified, or extended to another. This reusability also helps developers and process managers to make reference to workflows that were implemented in the past, to examine how similar problems were resolved, and use tested solutions to emerging or changing issues. In the long term, this practice may result in the emergence of a centralized body of automation expertise enhancing uniformity, minimizing development expenses, and speeding up development cycles.

With improved workflow measures and systematic knowledge reuse, optimization of the automation system can eventually transform itself in the future to become

more than a task execution tool, and instead, a strategic management tool. This would enhance the organizational learning, increase the operational transparency, and maximize long-term worth of process automation at the company further.

## Image Representations of Work:



## 7.2 Conclusion

The internship took place at NEXT Ventures and its main goal was process automation with n8n which is an open source workflow automation system. The internship goal was to investigate the available manual and redundant ways of operations and convert them into automated workflow processes that enhance efficiency, accuracy, and scalability. This project provided the application of theoretical information regarding workflow automation in a practical and organizational environment.

A Software Development Life Cycle (SDLC) model was used in an iterative manner to facilitate the group work and the ongoing improvement. The requirements related to automation were identified in collaboration with team members, implemented as n8n workflows and tested with the help of controlled environments and improved during successive iterations according to the feedback. This methodology has made it possible to deliver workable automation processes and introduce changes at low cost and risk.

The internship involved a number of automation use cases that were designed and built such as automated payment processing, KYC verification processes, meeting scheduling with reminders and follow-ups, as well as weekly work review and reporting automation. These workflows showed that n8n can be successfully used to combine various services and APIs to decrease the amount of manual intervention, decrease operational errors, and enhance consistency of the processes.

Another area of relevance of visualization of the workflow, scope management, process monitoring in automation systems was also noted in the project. Through the n8n node-based architecture, workflows had a clear definition, became easier to manage, and they could be reused in various operational situations. This reusability helps in scaling in the long term and retention of knowledge in the organization.

Summing up, the internship showed that n8n and automation of processes are practical in the context of a fintech. The exercised workflows offer the company a base of any future automation operation at NEXT Ventures and demonstrate the potential of low-code automation tools to be relevant in enhancing the efficiency of operations. This internship enhanced the technical knowledge of automation systems as well as professional competence in the area of development in collaboration, process analysis, and optimization of systems.

## References

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