

LOW CODE / NO CODE DEVELOPMENT PLATFORM COMPARED TO TRADITIONAL DEVELOPMENT FEATURES USES AND FUTURE

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ABSTRACT

This paper provides an overview of the low-code / no-code development platform compared to traditional development methods and examines its advantages and limitations. For decades, companies have had several options when demanding new information systems. You can develop a new system with an in-house developer or order the system from an external vendor. But today, there are new options that are gaining popularity. Low-code / no-code (LC / NC) applications efficiently meet business needs, are ready to implement, and are much cheaper than in-house developed systems. There is no or very less programming pre-requisites. On most of these platforms, users can create Web and mobile apps by dragging and dropping element without being code-agnostic. But this high-end programming concept is not that new. No-code and low-code software development is just an extension of the way programming has always evolved into a more intuitive form. For example, when programming in assembly language became too confusing computer scientists created language such as Fortran which was more readable. For simplicity we can also see an MS Excel Sheet as a kind of no-code or low-code platform that allows users to analyze and manipulate data without writing nearly any form of code.

I. INTRODUCTION

What is a Low Code Development Platform?

Low Code Development is a visual drag-and-drop development approach that simplifies application deployment by reducing manual coding as much as possible. These platforms allow citizen developers to design websites and apps with only advanced knowledge.

1. Computer science or software development concepts
2. latest software development frameworks and libraries

Platforms that enable low code development are called Low Code Development Platforms (LCDP) or Low Code Application Platforms (LCAP).

What is a no code development platform

A no code platform is produced utilising codes, just like any other technological instrument. However, the main feature is it add's a layer of abstraction so user can see only what is required for them to know. No-code platforms enable anyone to turn a basic concept into a fully functional visual app. Citizen developers can take advantage of the drag-and-drop application components and connect them to construct web and mobile apps without needing to know any code. It doesn't matter if you're a professional developer, a citizen developer, a small business owner, a business analyst, or someone with no technical knowledge if you have a no code platform on your side. A no-code platform provides a user-friendly interface that allows you to combine components with APIs to create functional apps. It eliminates the concept of legacy technology from company processes and can be used by non-technical staff.

II. METHODOLOGY

Here, we will compare the low code / no code with traditional programming, features of low code / no code platforms, low code vs no code what applications can be build using this platforms and how low code / no code platforms are future of application development.

Low code vs No code

People generally use them interchangeably. But there are big differences between them. First of all, low code requires minimal programming skills to develop and use built-in pre-built code. On the other hand, no code works perfectly with user input through declarative programming. It usually provides functionality in the area of business or start-up's compared to low-code, which is primarily useful to low-code developers.

1. Coding Skills

No Code is a wiser option for citizen developers as it abstracts the coding layer from the app development process. B. End business users. On the other hand, working with low code requires programming knowledge. Low code is an exact abbreviation for simplification and is useful for both civil and professional developers.

2. User Interface

Low-Code gives developers more flexibility. Low code allows developers to convert handwritten code into a visually designed and functional app. On the contrary, there is no closed platform code that allows users to use only existing predefined UI components.

3. Core Theme

On the no-code platform, end users use the drag-and-drop feature to select an app theme. The low code solution also provides drag and drop functionality. However, unlike the no-code development platform, the low-code development platform has a coding-dependent architecture.

III. MODELING AND ANALYSIS

Let's discuss some features of low code / node platforms that can help to built an application with easy.

Features of low code / No code platform**1. Drag-and-drop interface and visual modeling**

The use of visual methods and models for app development accelerates the process significantly over conventional coding. There are no built-in modules in the code, making it more user-friendly and readable. It is simple to use for anyone, from novices to experts.

2. Modular reusability

Another advantage of no-code development is the ability to use pre-configured components for your app. The no-code development modules can be reused to create various solutions and to build an efficient app development process from start to finish.

3. Integration of databases and APIs

Connecting the front-end and back-end is critical for any business. A no-code platform includes a number of API integrations, back-end services, and databases. These connectors have the potential to speed up the app development process. The core competency of a no code platform is its seamless integration capabilities. No code development offers simple modules to assist you in integrating your API with minimal complexities.

4. Simplifying the Software Development Life Cycle

No code development shortens development time by reducing testing, debugging, and deployment. Additionally, developers have access to all information about their apps and their operations. They can also switch to previous versions at any time using version control options.

5. Governance and Scalability

Another great feature of No-code development is its easy scalability, which allows users to create new apps based on their business and customer size. Assist them in tracking business-critical KPIs such as growth and engagement with relative ease.

6. Rapid deployment across multiple form factors

Some no-code platforms, allow you to create apps that work across all platforms quickly – web, mobile, and tablet. Before going live, a powerful designer assists app developers in configuring their frontend and previewing how their apps will look across various screen sizes.

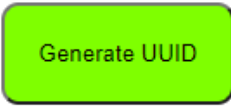
IV. RESULTS AND DISCUSSION**Comparison of Traditional programming and Low-code / No-code platforms.**

Problem statement create an app to built an UUID (universally unique identifier)

Using Traditional Programming :-

In depth Knowledge of HTML, CSS and JavaScript is required.

Output :-

A bright green rectangular button with rounded corners and a thin black border, containing the text 'Generate UUID' in black.

Click the Button to Generate UUID

Code :-

Index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <link rel="stylesheet" href="style.css">
  <script src="https://cdnjs.cloudflare.com/ajax/libs/crypto-js/4.1.1/crypto-js.min.js"
                                                    integrity="sha512-
E8QsvWZ0eCLGk4km3hxSsNmGWbLtSCSUcewDQPQWZF6pEU8GIT8a5ff32wOl1i8fdMhssTrF/OhyGWwonTc
XA=="
    crossorigin="anonymous" referrerpolicy="no-referrer"></script>
  <title>Generate UUID</title>
</head>
<body>
  <div class="main">
    <div class="btn_uuid">
      <button id="btn">Generate UUID</button>
    </div>
    <div class="btn_uuid">
      <label id="show_uuid">Click the Button to Generate UUID</label>
    </div>
  </div>
</body>
<script>
  let uuid_txt;
  document.getElementById("btn").addEventListener("click", myFunction);
  function myFunction() {
    uuid_txt = crypto.randomUUID();
    document.getElementById("show_uuid").innerHTML = uuid_txt;
  }
</script>
</html>
```

Style.css

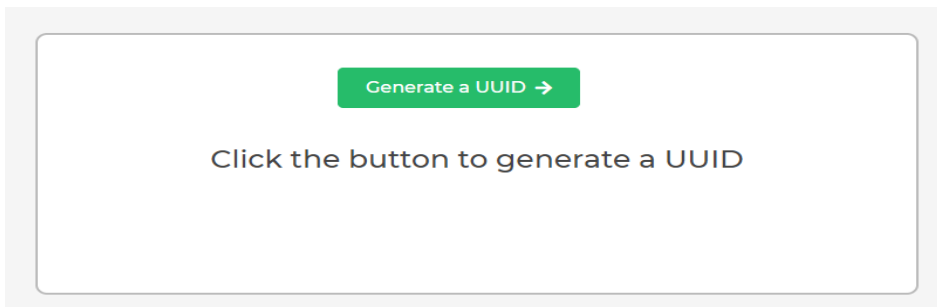
```
.main {
  border: 2px solid rgb(73, 71, 71);
```

```
border-radius: 10px;
width: 50%;
}
.btn_uuid{
display: flex;
justify-content: center;
align-items: center;
padding: 10px;
}
#btn{
background-color: chartreuse;
padding: 20px;
border-radius: 10px;
}
```

Using Low Code / No code platform :-

No or very less knowledge of programming is required.

Just drag drop 1 button and 1 label and only 2 lines of code is required.



Just we have to bind this code on click event of button and we get a completely working web page that will generate UUID for us.

Javascript Code

```
1 function JSCode( output ) {
2   output = crypto.randomUUID();
3
   return output;
}
```

So, as we can see for generating UUID in traditional code we have to write at least 50 lines of code where as on a no-code platform it can be done with just few drag drops and 1 line of code.

What applications can be built with Low-code / No-code platforms.

1. Mobile applications

Developers can create powerful applications that improve the mobile experience. No code platform includes mobile-specific tools to assist you in developing field force or other applications.

2. Database user interfaces, administration panels, and CRUD applications

You can easily create various applications, from CRUD apps to customer support tools, without writing any code. It can connect to PostgreSQL, MySQL, MongoDB, and RedShift databases in order to create front-ends for viewing, adding, editing, and deleting data.

3. Interactive forms

To collect valid form field data and auto-generate reports, you can create offline-enabled animated forms with an interactive interface.

4. Operational applications

Simple application for managing databases, sales funnels, and technical solutions while increasing productivity by integrating multiple tools across departments.

5. Process workflows

Helps you formulate a workflow for repetitive tasks like sending emails, reminders, invoices, or any other task that you desire.

Why Low-Code / No-code is Future.

1. Coordinating Business and IT Operations

When a organization faces a problem, the IT team addresses the problem in the order of identity, research, understanding, and resolution. The whole process takes about a month or more. Until then, the problem had changed. However, by sharing data to coordinate business goals with no-code and IT teams, you can change that scenario, improve communication and complement each other to maximize the potential of all teams. You can withdraw.

2. Eliminate IT Obstacles

If your business IT team is struggling to keep up-to-date applications, it won't help. Delivery maintenance works to encourage civilian developers to engage in more important programs and provides opportunities for both professional and civilian developers to educate themselves.

3. Expand developer resources

Citizen Developers can also add great value to enterprises under IT supervision, thereby expanding their skills. This allows companies and citizens with no programming experience to meet the growing demand for applications in a more flexible, collaborative and scrum-oriented way.

4. Internal tools will be no code

No code will help you build safe and simple apps according to your needs. Today, most companies use custom employee-only apps built with No code tools for internal communication, progress tracking, and task reporting. Especially for low-margin companies that don't have a SAAS platform and need highly customized apps.

5. Empowering a New Line of App Developers

Now, the founders of new tech companies no longer have to look for investors to launch an MVP. There is no need for large-scale financing. You can create an alpha or beta version of your app in about a week. Also, there is no code to help you test, so you can start selling as soon as possible.

V. CONCLUSION

As we can see in comparison that to make a very small application using the conventional programming needs around 50 to 80 lines of code and knowledge of at-least 3 programming languages and time required to built this app is around 1 to 2 hours. But by using any low code / no code platform it can be done just with one line of code, few drag-drops, also no programming language knowledge is required and around 5 to 10 minutes of time so as discussed earlier we can achieve rapid development and it can also help a business to cut some cost as more experts are not required and existing employees can be trained for this kind development. So as discussed low code / no code will be future of development for mobile and web applications.

VI. REFERENCES

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