Low-Code/No-Code Development

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title and Code	Credits	Credit distribution of the course			Eligibility Criteria	Prerequisite of the Course (if any)
		Lecture	Tutorial	Practical/Practice		
Low-Code/ No-Code Development	2	0	0	2	Class XII	NA

Learning Objectives

The learning objectives of this course are as follows:

- To understand the fundamental of low-code/no-code platforms
- Can develop Web & Mobile Apps using modern drag-and-drop platforms like Bubble.io, Adalo, Webflow, etc.
- Can automate workflows and integrate third-party services like Firebase Authentication, Airtable, OpenAI API, Stripe, Twilio, Google Maps API, etc.

Learning Outcomes

The learning outcomes of this course are as follows:

- Students can build various Web & Mobile applications with very less or no programming knowledge.
- Students can work with modern drag-and-drop tools like Bubble.io, Adalo, and Webflow.
- Students can deploy low-code/no-code applications on cloud platforms.

Main Course Structure

Unit 1: Introduction to Low-Code/No-Code Development (8 Hours)

- Overview of Low-Code and No-Code platforms.
- Understanding when to use Low-Code/No-Code solutions.
- Introduction to platforms like Bubble.io, Webflow, and Adalo, etc.

Unit 2: Building Web and Mobile Apps with Drag-and-Drop Tools (12 Hours)

- UI/UX Design principles for no-code platforms.
- Developing interactive web pages with Webflow and Bubble.
- Creating mobile apps using Adalo and Glide.

Unit 3: Automating Business Workflows (12 Hours)

- Introduction to workflow automation tools.

- Using Zapier and Make (Integromat) to connect services.
- Automating processes with Google Apps Script and n8n.

Unit 4: Integrating APIs and External Services (12 Hours)

- Connecting external APIs without coding.
- Using OpenAI API for AI-based features.
- Payment gateway integration using Stripe or Razorpay.

Unit 5: Deploying and Managing No-Code Applications (16 Hours)

- Hosting and publishing applications on various platforms.
- Security considerations in no-code applications.
- Scaling low-code solutions for enterprise needs.

Practical List:

1. **Building a Basic Web Page**: Create a simple landing page using Webflow.
2. **Developing a Mobile App**: Build a to-do list or note-taking app using Adalo or Glide.
3. **Automating Workflows**: Automate email responses using Zapier and Google Sheets.
4. **Connecting a Database:** Use Airtable as a backend for a no-code web app.
5. **Integrating AI in a No-Code App**: Use OpenAI API to add chatbot functionality to a Bubble app.
6. **E-commerce Payment Integration**: Implement Stripe or Razorpay in a no-code online store.
7. **Deploying a No-Code App**: Publish a no-code app on Firebase or a custom domain.

Project Guidelines

Students will develop a **fully functional no-code/low-code application** of their choice, following structured milestones. Example projects include:

- **Business Website or Portfolio Site** (Webflow/Bubble)
- **Task Management or To-Do App** (Adalo/Glide)
- **AI-Powered Chatbot for Customer Support** (Bubble + OpenAI API)
- **E-Commerce App with Payment Gateway** (Adalo + Stripe)
- **Automated Email Responder or CRM System** (Zapier + Google Sheets)
- **Job Listing or Hiring Platform** (Airtable + Webflow)
- **Inventory Management Dashboard** (Airtable + Make)
- **AI-Powered Image Recognition App** (Bubble + Google Vision API)

1. Teaching Methodology/Activities in the classroom

   Teach students to utilize various drag-and-drop tools for developing various no-code applications via hands-on sessions and group project.

2. Assessment Pattern for each Unit/practical. Component of Attendance in the Assessment of 1 credit theory course

S.No.		Component	Marks
1		Evaluation using practical list given in syllabus	30
2		Evaluation of quizzes conducted during semester	20
3.		Project to be developed during semester	
	A	Milestone 1: Designing the App Layout and Wireframe	5
	B	Milestone 2: Implementing Functionalities with No-Code Tools	10
	C	Milestone 3: Integrating Third-Party Services & Automations	10
	D	Milestone 4: Deployment & Final Presentation	5
Total			80

3. Mapping with the next suggestive course
   - AI-Powered Web Applications (Proposed)

4. Prospective Job Roles after a particular course

   - No-Code Developer
   - Automation Specialist
   - Product Manager

5. Essential Reading
   - Adkin, D. (2022). The No-Code Playbook: Build Scalable Software Without Coding. Adalo.
   - Bubble manual and documentation. Retrieved from https://manual.bubble.io
   - Webflow university documentation. Retrieved from https://university.webflow.com
   - Zapier help & documentation. Retrieved from https://zapier.com/help

6. Suggestive Reading
   - Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Crown Business.
   - *Integromat user guide and API documentation*. Retrieved from https://www.make.com/en/help
   - *OpenAI API documentation*. Retrieved from https://platform.openai.com/docs
   - *Stripe developer documentation*. Retrieved from https://stripe.com/docs
   - *Google Apps Script developer guide*. Retrieved from https://developers.google.com/apps-script