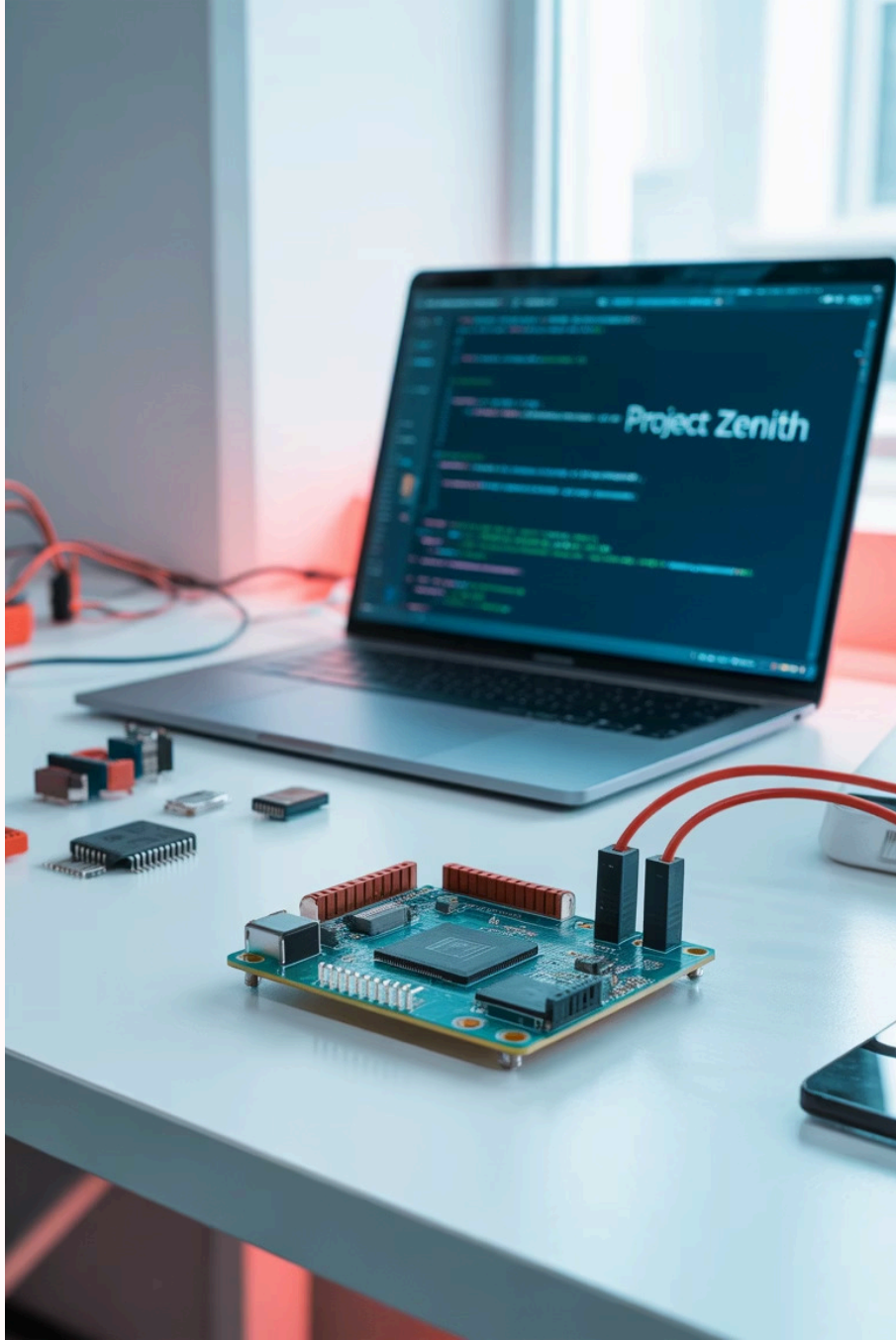
FREE Hands-on Embedded Systems & Firmware Training for IoT Products

Duration: **45 Hours** (9 Working Days, Bi-Weekly Program)

Organized by **Innotrat Labs**

Next Batch Starts: **5th September**

Only 10 Seats Available

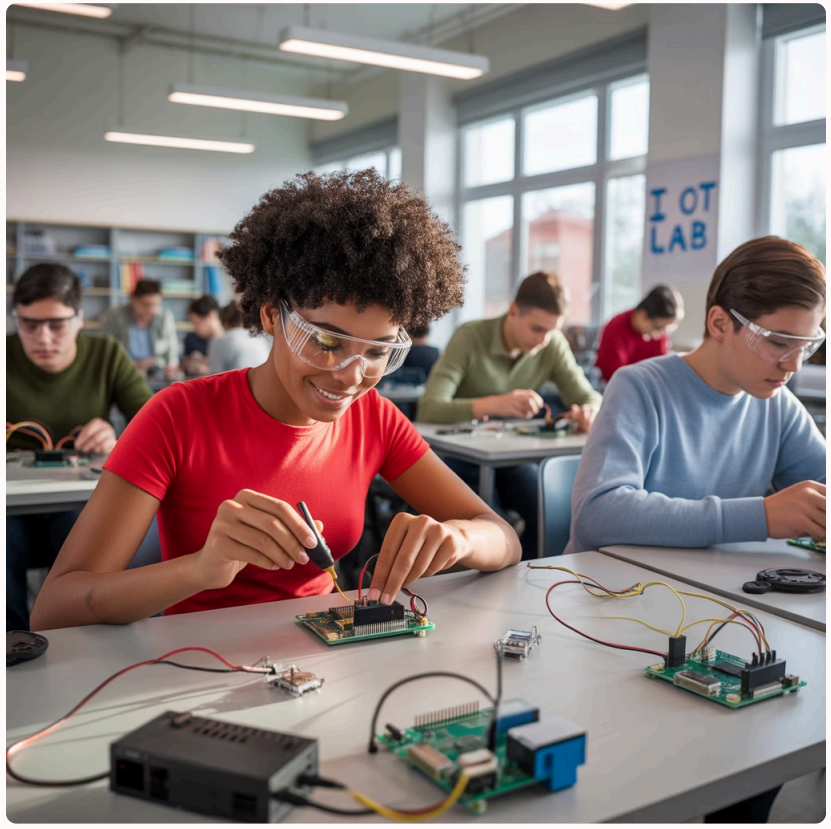


Why FREE Training?

Our mission: **empower students with real-world IoT skills** that bridge the gap between academic theory and industry practice.

The training is **100% free** – we only charge for the development kit because we believe knowledge should be accessible to all passionate learners.

Students keep the kit after training for continued learning, research & innovation – giving you the tools to keep building long after the course ends.



What's the Development Kit?

STM32 MCU Board

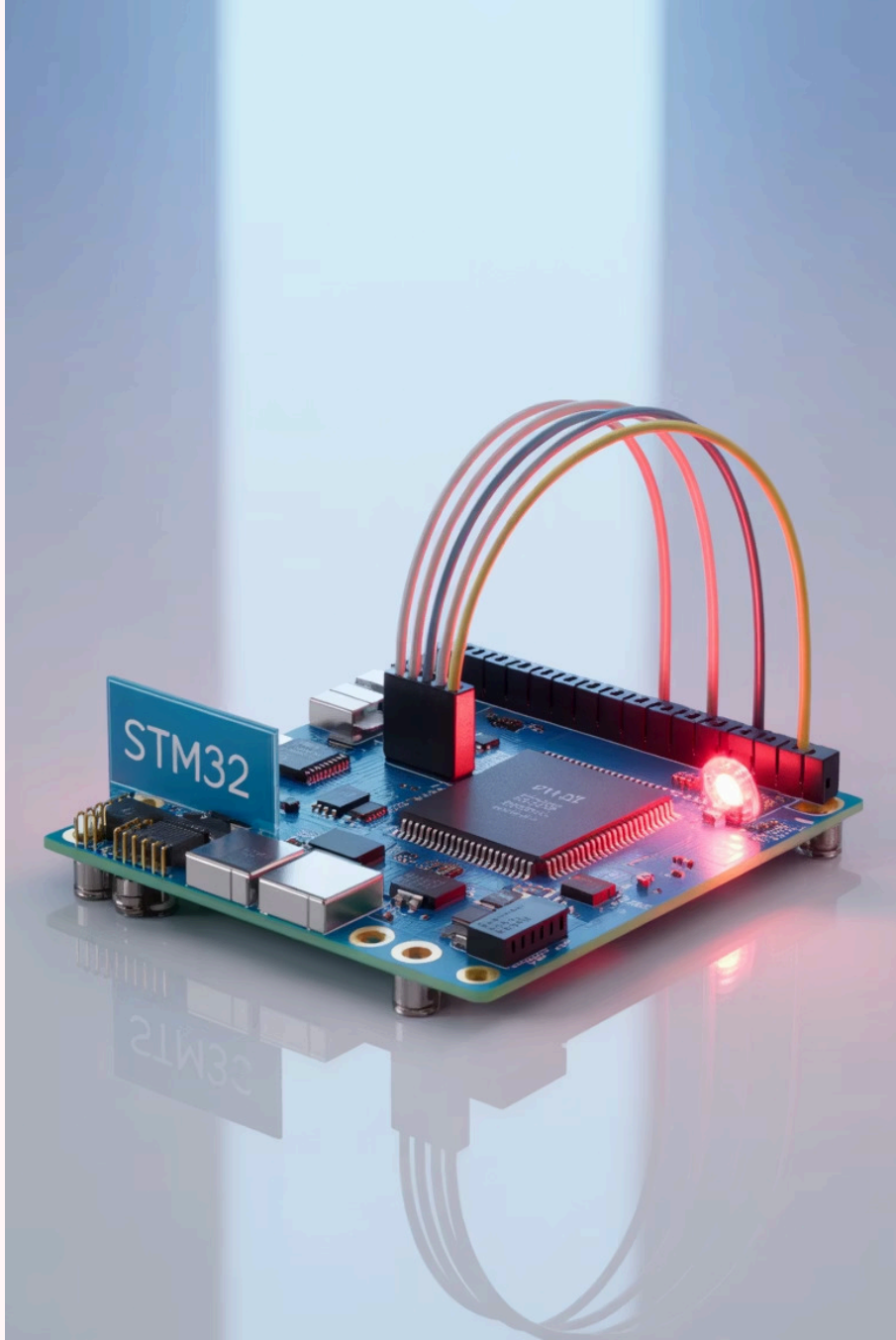
Professional-grade STM32 series microcontroller board with advanced processing capabilities for IoT applications.

Sensors & Components

Multiple sensors (temperature, humidity, motion), LEDs, buttons, and connectivity modules for complete prototyping.

Yours to Keep

Worth more than the course fee, this kit becomes your personal lab equipment for continued learning and project development.



Why Embedded Systems & IoT?

Explosive Market Growth

The global IoT market is projected to reach $1.6 trillion by 2025, with billions of connected devices creating unprecedented demand for embedded systems expertise.

High-Demand Career Path

Embedded engineers command competitive salaries with a significant skills gap in the industry - companies are struggling to find qualified talent.

Hands-on Independence

Owning your personal development kit accelerates learning and gives you the freedom to experiment, build, and innovate on your schedule.

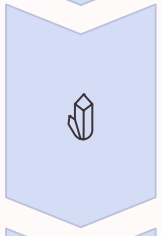
Who Should Join?

Engineering Students

Pursuing degrees in ECE, EEE, CSE, or Mechatronics who want to supplement theoretical knowledge with practical, industry-relevant skills.

Recent Graduates

Looking to stand out in the job market by gaining hands-on experience with IoT product development and embedded systems programming.



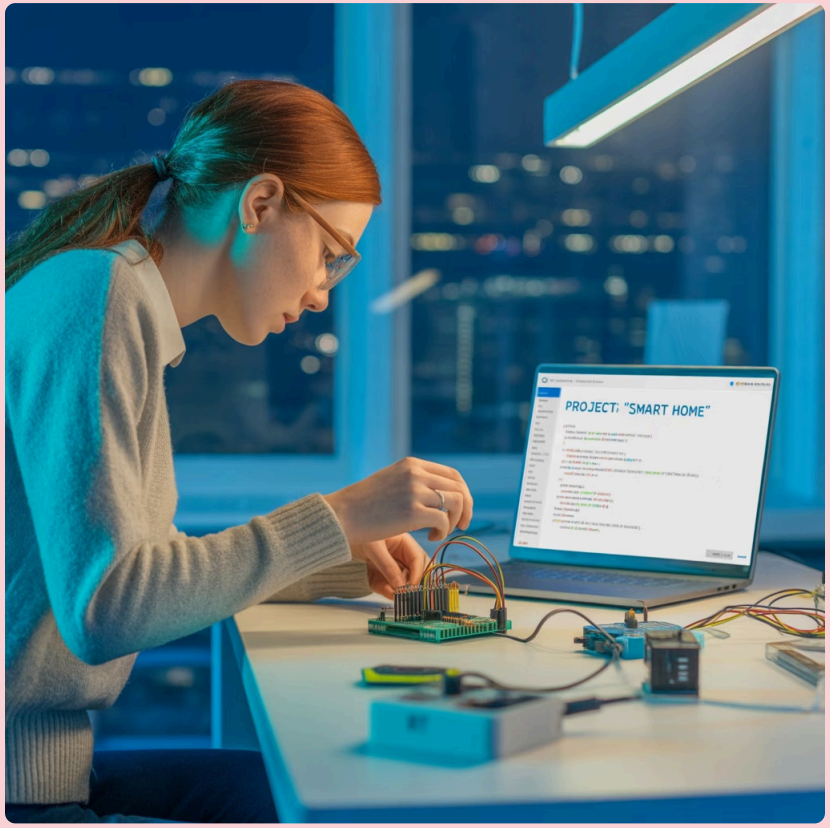
Hobbyist Makers

Tinkerers and innovators passionate about electronics who want structured training and their own professional-grade development kit.

Future Entrepreneurs

Aspiring founders who want to build IoT product prototypes and gain the technical foundation needed to launch hardware startups.

What Makes This Training Special?



100% Hands-on Learning

No passive lectures - you'll be building, coding, and testing from day one with your personal development kit.

FREE Professional Training

Just bring your curiosity and commitment - the 45 hours of expert instruction costs you nothing.

Your Personal Hardware Lab

Keep your development kit after training - unlike courses where you return equipment, this becomes your permanent tool for innovation.

Complete Learning Cycle

Learn → Build → Own → Continue innovating long after the course ends with your personal equipment.

Duration & Format

45 Hours

9 Working Days | Bi-weekly Format

Designed for flexibility to accommodate your schedule while providing sufficient depth and hands-on practice time.

Hardware Design

Learn embedded hardware fundamentals and industrial design principles using your development kit.

Firmware Development

Master the programming skills needed to bring hardware to life with efficient, reliable code.

IoT Testing

Apply real-world validation techniques to ensure your connected devices perform reliably.

Project Showcase

Present your working prototype to industry professionals and fellow innovators.

Training Highlights

FREE Guided Training

Expert-led instruction from industry professionals with real-world IoT product development experience.

End-to-End IoT Journey

Experience the complete product development lifecycle from concept to working prototype.

Your Own Dev Kit

Take home professional-grade hardware that serves as your personal laboratory for continued learning.

Working Prototype

Build a functional IoT device you can demonstrate to potential employers or investors.

Industry Presentation

Showcase your creation to professionals who can provide feedback and career opportunities.

Future-Ready Skills

Develop the practical expertise that employers are desperately seeking in the IoT ecosystem.

What You'll Learn: Hardware

1

Kit Exploration & Basics

Get familiar with your STM32 development kit components, pinouts, and capabilities. Learn fundamental electronics concepts and how to safely handle and connect components.

2

Circuit & Schematic Design

Understand circuit diagrams, component selection, and design considerations for IoT applications. Learn to read and create basic schematics for your projects.

3

PCB Concepts

Introduction to PCB layout, design rules, and manufacturing considerations. Understand how commercial IoT products are designed for production.

4

Building Prototypes

Assemble working circuits using breadboards, jumper wires, and your kit components. Learn proper prototyping techniques used in industry R&D departments.

What You'll Learn: Firmware

Microcontroller Programming

Master C/C++ programming specifically for embedded systems. Learn memory management, interrupts, timers, and efficient coding practices for resource-constrained environments.

IoT Connectivity

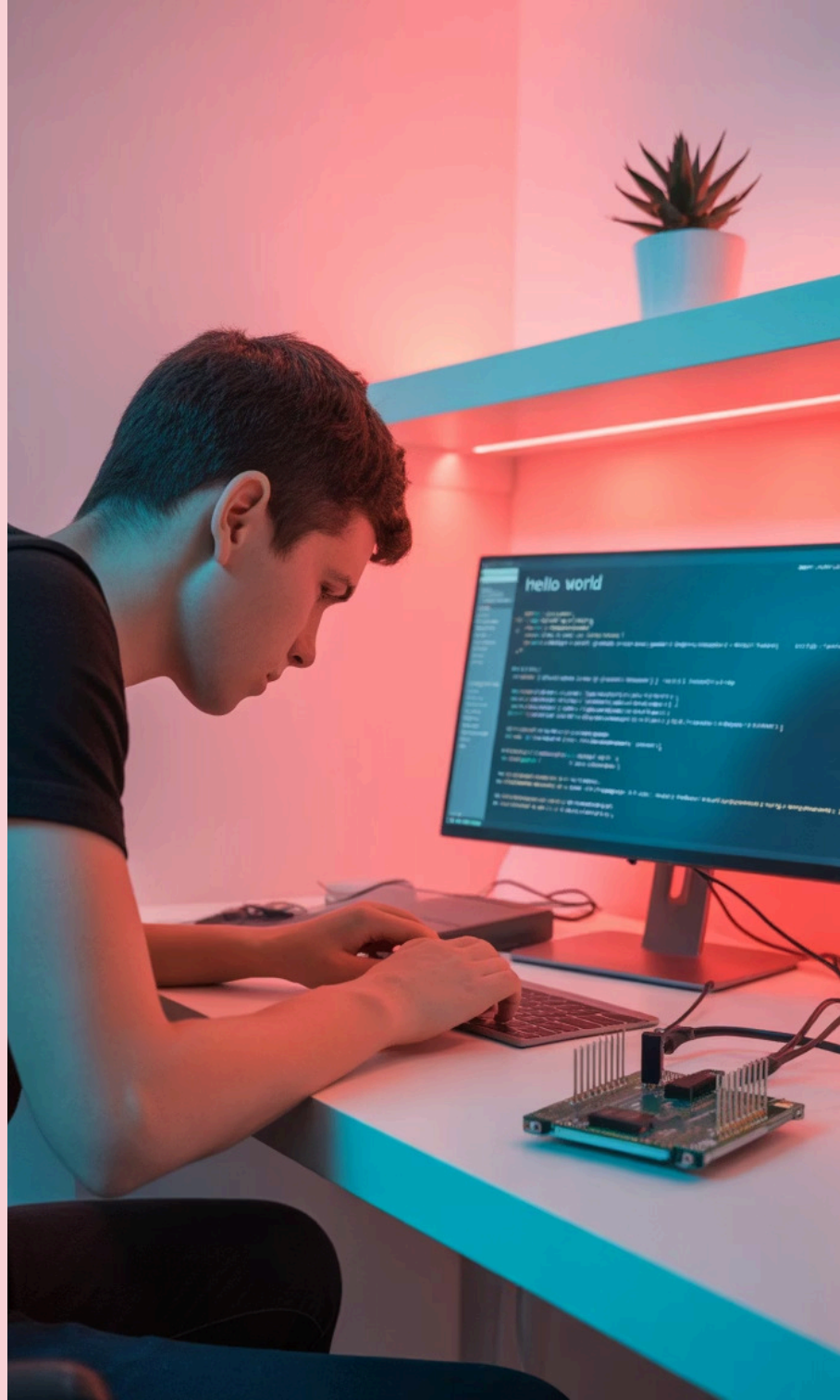
Implement WiFi and Bluetooth Low Energy (BLE) communication protocols. Understand data formatting, security considerations, and reliable transmission techniques for IoT devices.

Code Deployment & Debugging

Practice uploading firmware to your development kit, debugging common issues, and using professional tools to validate code performance and reliability.

Real-time Demonstrations

Build mini-projects throughout the course that demonstrate key firmware concepts, reinforcing learning through immediate application on your personal kit.



What You'll Learn: Integration

Hardware + Firmware Integration

Learn the critical skill of making hardware and software work together seamlessly. Understand timing issues, power management, and system optimization techniques.

Sensor Interfacing

Connect and program various sensors (temperature, humidity, motion, etc.) to capture real-world data. Master different communication protocols like I2C, SPI, and UART.

IoT Application Testing

Implement end-to-end testing of IoT systems including connectivity, data transmission, and cloud integration. Ensure your device performs reliably in various conditions.

Systematic Troubleshooting

Develop methodical debugging skills using your kit's tools. Learn to identify and resolve common hardware-software integration issues that plague IoT products.

Capstone Project

Build a Complete IoT Device Using Your Kit

Apply everything you've learned to create a functional IoT prototype that solves a real problem. This isn't just an exercise - it's your first professional portfolio piece.

Real Product Development

Experience the entire product development cycle from ideation to testing - just like in industry.

Personal Project Ownership

Since you keep the kit, you can continue refining your project even after the training ends.

Portfolio Builder

Create something impressive you can show to potential employers or investors.

Industry Showcase

Professional Presentation

Present your working IoT prototype to external industry professionals who can provide valuable feedback and connections. Learn to communicate technical concepts clearly to both technical and non-technical audiences.

Career Opportunities

The showcase often leads to job offers, internships, and mentorship relationships as companies are constantly searching for talent with practical IoT skills. This is your chance to make connections that could launch your career.

Pitch Training

Develop the confidence and skills to present hardware ideas effectively - an essential skill whether you're interviewing for jobs or pitching to investors. Learn how to demonstrate technical prowess while highlighting business value.

Entrepreneurial Edge

Beyond Technical Skills: Building Your Startup Mindset

This training goes beyond pure engineering to prepare you for the entrepreneurial journey in IoT product development.

Innovation Frameworks

Learn methodologies for identifying problems worth solving and validating IoT product ideas before full development.

From Prototype to Product

Understand the steps to transform a working prototype into a manufacturable, market-ready IoT product.

Personal R&D Lab

Your development kit becomes the foundation for continued experimentation and innovation after the program ends.

Career Opportunities

The practical skills you'll develop open doors to some of today's most in-demand technical roles:

Embedded Systems Developer

Design and implement firmware for microcontroller-based products across industries like automotive, consumer electronics, and industrial automation. Average starting salary: $85,000-$110,000.

IoT Firmware Engineer

Specialize in creating the software that powers connected devices, focusing on reliability, security, and power efficiency. High demand across smart home, wearables, and industrial IoT sectors.

R&D Hardware Engineer

Work on cutting-edge product development, designing and testing the next generation of embedded systems and IoT devices. Exciting opportunities in research labs and innovation centers.

Entrepreneur / Startup Founder

Launch your own IoT venture, building products that solve real problems. The hands-on skills from this program provide the technical foundation needed to bring innovative ideas to life.

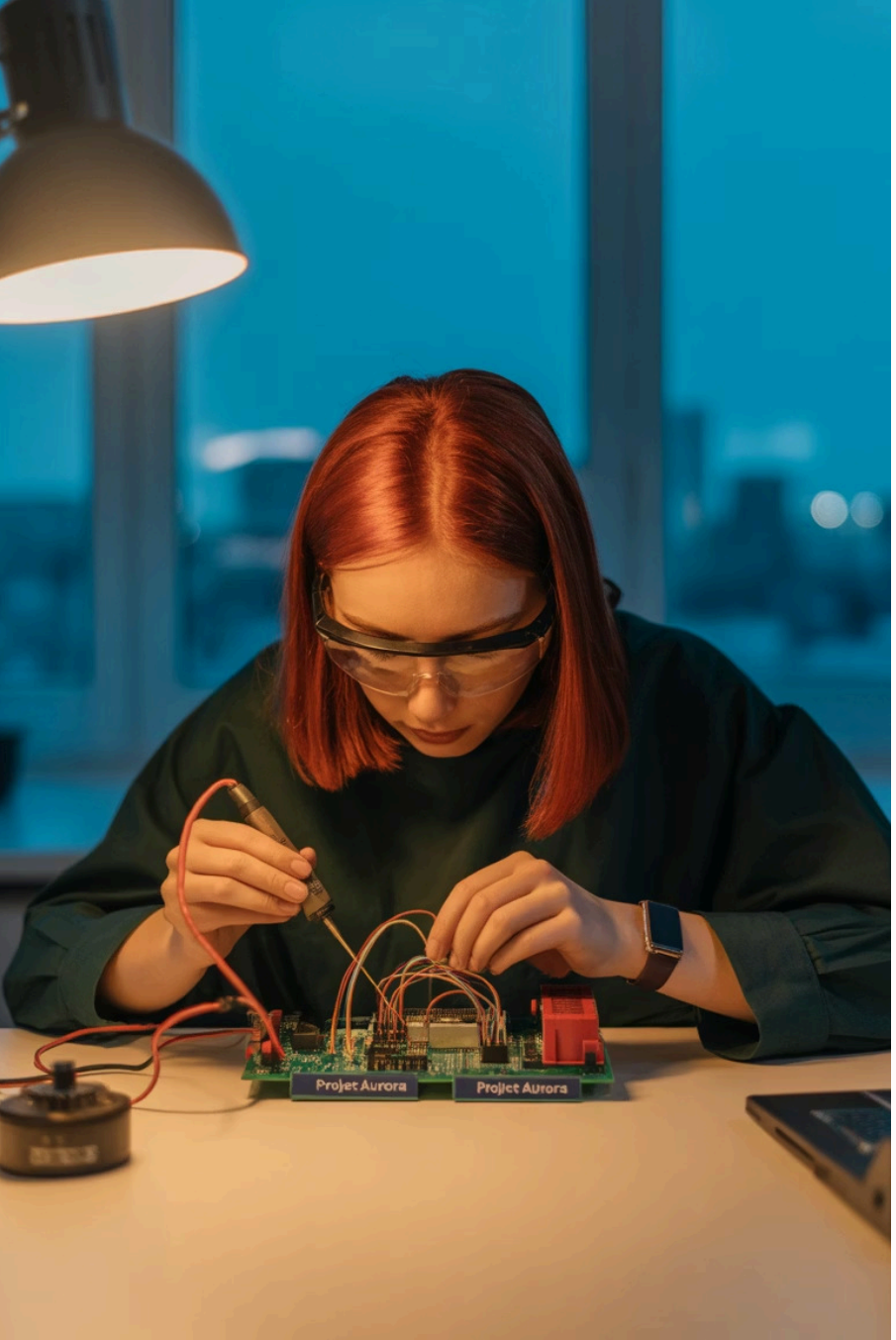
Why FREE Is Possible?

Innotrat Labs invests in student talent

We believe in removing barriers to technical education. By providing free training, we're investing in the next generation of embedded systems innovators.

You only pay **Rs. 3600** for your development kit (including GST) - which becomes your personal property.

The professional training (worth thousands) is our contribution to nurturing technical talent and supporting future innovators in the IoT space.



Kit Ownership Advantage

Keep Your Tools Forever

Unlike other courses where you return equipment after training, your development kit becomes your permanent property. This is a crucial difference that extends your learning far beyond the course duration.

Continuous Learning

Having your own hardware allows you to continue experimenting, testing new ideas, and building projects long after formal training ends. You can revisit concepts, try new techniques, and deepen your understanding at your own pace.

Portfolio Development

Use your kit to build multiple portfolio projects that demonstrate your skills to potential employers. Having physical prototypes to show during interviews gives you a significant advantage over candidates with only theoretical knowledge.

How to Enroll

01

Reserve Your Spot

Pay only Rs. 3600 (including GST) to secure your development kit and training seat. This is your total investment - the training itself is FREE.

02

Mark Your Calendar

Next batch starts **September 5th**. Be prepared for an intensive, hands-on learning experience that will transform your technical skills.

03

Act Quickly

With only **10 seats available**, spots fill rapidly. Early enrollment ensures you don't miss this opportunity.

04

Location Note

This program is available only at our Chennai office. The in-person format is essential for the hands-on nature of the training.

Contact Us

🚀 Own your kit. Learn for free. Build your future.

📧 **Email:** satya@innotrat.com

Location: Innotrat Labs, Chennai

👉 Enroll Now – Seats Filling Fast!

Don't miss this opportunity to gain in-demand skills and your own development kit at a fraction of the usual cost.

Your Journey to IoT Innovation Starts Here

> "The skills you'll learn and the development kit you'll own are your gateway to endless possibilities in embedded systems and IoT product development. Take the first step toward a future where you can build the technology that changes the world."

Only 10 Seats Available

Email **satya@innotrat.com** today to secure your spot!