THE BOLT PLATFORM

TOOLSET & FEATURES
The Bolt Hardware is a WiFi Chip with an inbuilt Mic32-bit RISC CPU which operates at 3.3v and a 80Mhz Clock Frequency.

The chip can be interfaced with sensors and actuators via the GPIO and UART pins for collecting the data and pushing to the Bolt Cloud or receiving data from the cloud.

The boot time is less than a second and the chip houses a lightweight proprietary firmware to boasts of a high speed secure connection and communication with the Bolt cloud.
GUI Based Configuration

A visual interface that lets you initialise the GPIO pins for your hardware operations. You can either setup for Bolt GPIO’s or UART.

This helps in setting up the platform for your projects very quickly, saving you time and moving straight to coding for your use case.

All you need to do is simulate or map your physical setup onto the dashboard and assign a variable name to each pin.
IDE - Code Editor

A **Product** in the Bolt dashboard is your IoT application or use case in the form of a code that includes all your configurations, which will ultimately be performing all your functions of either monitoring, control or notification.

The product section lets you configure, code, edit and link the product to your devices.

This feature solves the problem of having to manually configure each of your products when a tweak is required. You can reprogram the system remotely to accommodate changes and additions to your product.
Write the code to implement the demo. We have written it for you right now.

```c
// The variable name should match the one in your code.
void main() {
    // Code line 1
    // Code line 2
}
```
Monitoring and Analysis

Once the product is setup for sensing and data collection, you can choose from a range of visualisation tools to monitor your data over a period of time, tools include various visualisation types like graphs, charts, gauges and you can even use other libraries for a customised visualisation.

All the data collected on the cloud is securely stored for retrieval at any time. Bolt allows you monitoring of data that is real time.
Monitoring Pollution Levels
Air quality sensing system designed to allow anyone to collect high resolution readings of NO2 and CO concentrations.

Flood and Contamination
GPS, temperature and salinity sensors can help detect floods, contaminants, and other conditions in waterways.

Earthquake and Landslides
Calculate soil movement in real time and send out alerts to communities before an event occurs.

Wildlife Protection
GSM modules connected to the cloud can help researchers and herders track wild animals.
Applications

City Monitoring

Waste Management
Smart bins that have real-time data collection and alerts to let municipal services know when a bin needs to be emptied.

Smart Parking
Optimized revenue, parking space availability and reduced environmental impact on quick assignment of parking space.

Electricity Management
Measure line current, calculate consumption levels, Identify meter tampering, malfunctions, and installation issues.

Smart Street Lighting
Intelligently provide the right level of lighting needed by time of day, season, and weather conditions.
Notifications

The cloud lets you take automated actions based on the data values received. You can set thresholds for your data and every time it crosses, you can define the system to send an automated SMS or E-Mail to notify you about the same.

This feature is important in systems where parameters like temperature, humidity, water levels may be critical and need immediate action.
Open API’s

The API key of the Bolt Platform provide you access to the data collected via the Bolt Platform, act as an authentication medium between the Bolt Cloud and other servers and mobile applications, reading and writing data securely and for output commands for actuation.

This key is unique to each Bolt device and helps you identify the device and communicate with third party servers, apps and hardware devices.
Remote Control

Since the Platform provides a two way communication, you can even perform control functions such as switching actuators and appliances on and off or varying control parameters remotely over the Internet.

This feature is Ideal for Home Automation and Control System projects.
Sensors mounted onto machines will allow plant operators to keep a track of machine health and predict failures before they even happen.

Data collected over a period of time can be used to take decisions and further automate those decisions over time.
Predictive Maintenance

Sensors installed inside equipment will monitor if any parts have exceeded their designed thresholds, and will automatically send reports to owners and manufacturers if they have. Early predictions on equipment malfunctions can be made with parts and service maintenance can be automatically scheduled ahead of an actual part failure.

Agriculture

Optimized real-time sensor data from soil moisture levels, weather forecasts, and pesticide usage from farming sites into a consolidated web dashboard. Farmers can use this data with advanced imaging and mapping information to spot crop issues and remotely monitor all of the farms assets and resource usage levels.
Your Bolt devices can be shared with a team mate or any other associates for reviewing the functionality of the product.
Similar to software updates on your smartphone, you can push your latest firmware updates wirelessly to all your devices with a single click.

This feature makes it convenient when you have a deployment of a multitude of devices at different locations.