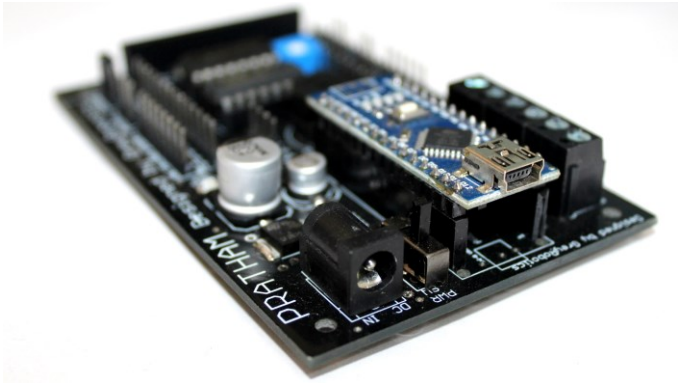
PRATHAM 1.0

ARDUINO NANO DEVELOPMENT BOARD



GreyRobotics
-In Between Black And White

Product User Manual for
Arduino Development Board

Model: PRATHAM 1.0

Ordering Information
Pratham 1.0 (Arduino Development Board) can be directly ordered from Amazon India site
https://www.amazon.in/dp/B07RFCVYH2/ref=sr_1_9?keywords=greyrobotics&qid=1557040415&s=gateway&sr=8-9

Main Purposes of Board

Robotics learning kit for students
Robotic Competitions
Robotics Workshop's and Training
Line Follower Robots
Obstacle Detection Robots
Hobby projects
Arduino Nano based projects

L x W x H	100 X 65 X 12 mm
Weight	50 grams
Controller	Arduino Nano (Atmega328p)
Voltage Input	9-18V

Product Description

Pratham 1.0 is the best way to start with electronics, coding and robotics. Having an on-board Arduino Nano platform makes it easy to go for beginners. Avoid using complex breadboard wirings for blinking your LED's, beeping your buzzer, writing to your LCD, reading your sensors, running your motors or building your robots for Line Following or as an Obstacle avoider robot. Use PrathamV1.0 as your first ever board with on-board peripherals. Test your basic to advanced coding skills using this completely documented and user-friendly development board. Just plug-in, code and see it run!

If you have any questions, suggestions or comments regarding this publication or need technical assistance, please contact us via email at: greyrobotics@gmail.com

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Product Features

- On-board DC jack and optional battery terminal for Input Power
- On-board ON/OFF switch and power LED
- On-board Voltage Regulator for stable power supply
- Arduino Nano compatible (direct plug-in for Arduino Nano board)
- Two User Programmable LED's
- Two User Programmable Switches
- On-board buzzer as Audio output
- On-board direct plug-in for 16X2 Liquid Crystal Display with contrast adjustment
- On-board L293D Motor Driver chipset
- Drive 2 Bi-directional DC motors
- Drive 2 Servo motors
- I2C communication pins available for IMU Sensor
- Pin header to connect Line Follower Sensor (up to an array of 6) with power pins
- Pin header to connect Obstacle sensor (SHARP) with power pins
- Complete breakout of Arduino Nano for other multiple uses
- On-board 5V and GND output pin to power up external modules
- Optional expansion of board using various shields

Electrical Values	
Unit Supply Voltage	9-18 V
Current Consumption: With Load Standby	800 mA 100 mA
Output Logic Level	+5 V
Input Logic Level	+3.3 to +5.0 V
Outputs	5 Digital I/O – 2 Analog Input (2 Digital I/O)
Environmental Values	
Unit Operation & Storage temperature	-35 up to +80 °C
Mechanical Values	
Weight	50 g
Dimensions (w x h x d)	100 x 65 x 12 mm

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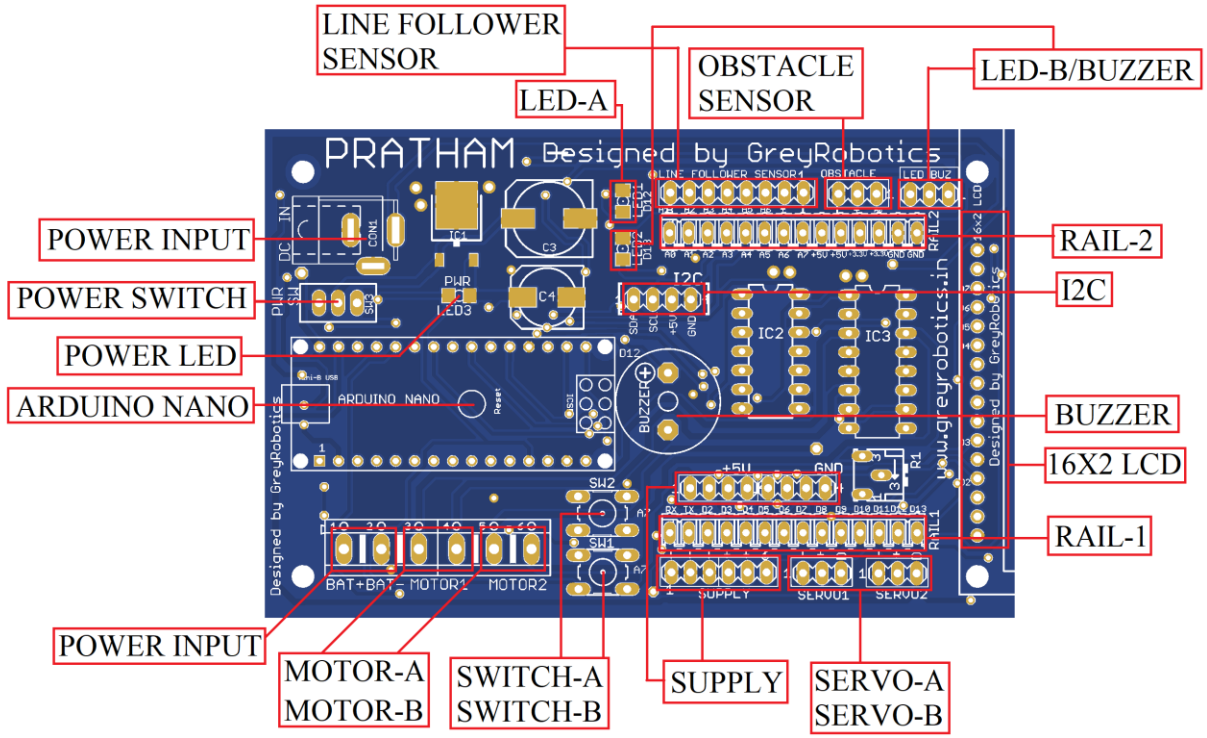
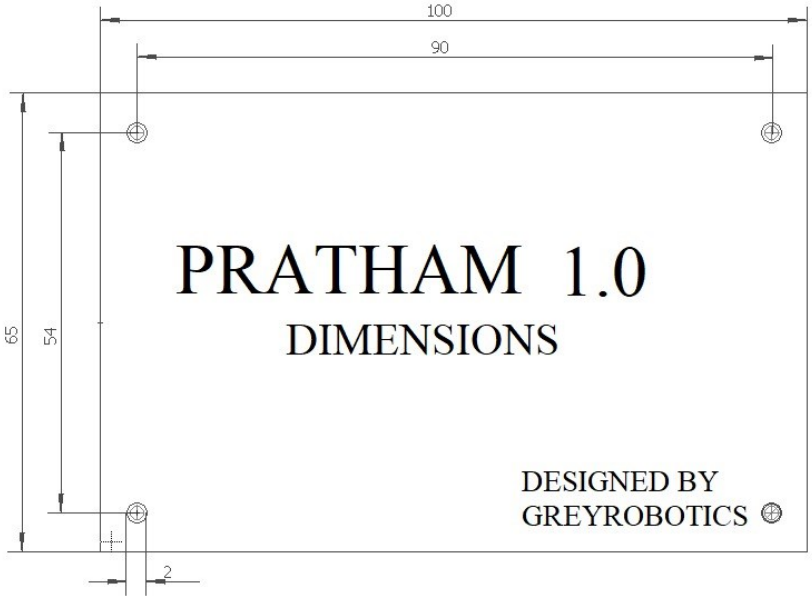
Breakouts -



Dimensions –



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Arduino Pin Mapping -

SR. No	BLOCKS	APPLICATION
1	POWER INPUT	9-18 Volts/ 1 amp from power adapter or battery.
2	POWER SWITCH	Slide Switch used to turn ON or OFF the board.
3	POWER LED	Power Indication RED LED
4	ARDUINO NANO	Arduino Nano board
5	MOTOR-A,B	DC Toy motors or Micro-gear Motor can be used to connect on these pins.
6	SWITCH-A,B	User Programmable switches
7	SUPPLY	+5Volt and Ground Supply can be used to add additional modules or sensors to the board.
8	SERVO A,B	2 Micro-gear Servo can be connected on these lines in order to get positional accuracy.
9	RAIL-1	Following arduino pins can be used for user function – D0, D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13.
10	16x2 LCD	Liquid Crystal display is used to display real time sensory data. It can be used as a menu application.
11	BUZZER	User Programmable piezo buzzer used for audio output
12	I2C	Two pin interface used for high end I2C Sensors like Magnetometer : Soft Odometer Accelerometer and Gyroscope : Self Balancing Robotic Application
13	RAIL-2	Following arduino pins can be used for user function – A0, A1, A2, A3, A4, A5, A6, A7, 5V, 5V, 3.3V, 3.3V, GND, GND.
14	LED-B/ BUZZER	Two pin jumper can be used to switch between led and buzzer application.
15	OBSTACLE SENSOR	Single pin proximity sensor (SHARP) can be interfaced on this connector
16	LED-A, B	User Programmable led used for visual indication.
17	LINE FOLLOWER SENSOR	6 Pin line follower sensor can be connected to this connector (Connector is specially designed for LFS-6 sensor)

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ARDUINO PINS	PERIPHERALS
D0	User Defined
D1	User Defined
D2	LCD – Resistor Select
D3	LCD – Enable
D4	Motor A – Direction
D5	Motor A – PWM
D6	Motor B – PWM
D7	Motor B – Direction
D8	LCD – Data 1
D9	LCD – Data 2
D10	LCD – Data 3 / Servo – A*
D11	LCD – Data 4 / Servo – B*
D12	LED- A / Buzzer (Jumper Selection)**
D13	LED – B
A0	Obstacle Sensor
A1	Line Follower Sensor – 1
A2	Line Follower Sensor – 2
A3	Line Follower Sensor – 3
A4	Line Follower Sensor – 4
A5	Line Follower Sensor – 5
A6	Line Follower Sensor – 6
A7	Switch A and B***

*It can be used for Servo motor or LCD Data
**Either function can be selected using JUMPER (Upper Right) pin
***Both switch connected to single ADC pin with different voltage divider network (Check Sample code).

Last Updated: 05-05-2019

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