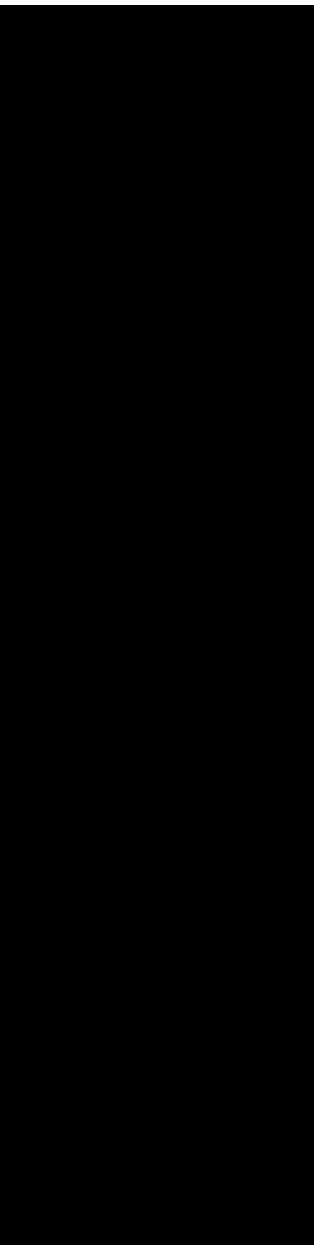


# DREAM KIT

USER MANUAL



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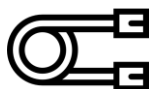
- GETTING STARTED
- WHAT IS INSIDE THE BOX?
- KIT CONTENTS IN DETAIL
- DREAM KIT STUDIO
- USING KIT AND STUDIO TOGETHER
- BASIC PROJECTS

# GETTING STARTED



UNBOX DREAM KIT

DOWNLOAD DREAM  
KIT STUDIO



CONNECT ADD -ON  
MODULES  
TO THE HUB

IDENTIFY THE ADD -  
ON MODULES



DRAG & DROP  
PROGRAMMING

UPLOAD THE CODE



# WHAT IS INSIDE THE BOX?

The beginner kit contains components that can be used to understand the working of DREAM Kit. You can make simple projects in less than 10 minutes after unboxing the kit.

## THE BOX



HUB x 1

BUZZER MODULE x 1

RGB LED MODULE x 1

LDR MODULE x 1

PING SENSOR MODULE x 1

SERVO MOTOR x 1

WATER LEVEL INDICATOR MODULE x 1

WATER LEVEL INDICATOR WIRE x 1

WIRES x 6

BATTERY x 1

BATTERY CONNECTOR x 1

# KIT CONTENTS IN DETAIL

The HUB is the central brain of the kit and the add-on modules are connected to it.

**TEN PORTS TO CONNECT TEN  
DIFFERENT ADD-ON MODULES.**

**CAN BE POWERED BY AN EXTERNAL  
DC SOURCE RANGING FROM 7-24 V.**

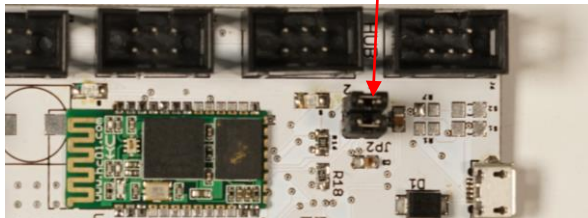
**CAN BE UPLOADED VIA BOTH USB  
CABLE AND BLUETOOTH.**

To upload via USB you must remove the 2 Jumper pins on the HUB. Replace the Jumper pins if uploading is done via Bluetooth.

HUB



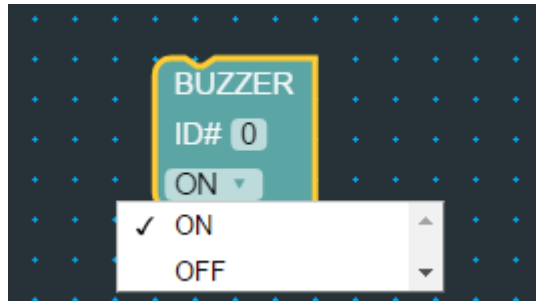
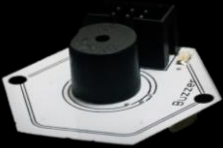
JUMPER PINS



# KIT CONTENTS IN DETAIL

The buzzer module is used for making beeps, tones and alerts. It can be switched ON or OFF as required.

## BUZZER



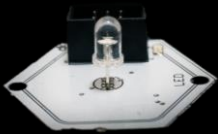
It can be used in the following projects:

1. OBSTACLE AVOIDER ROBOT
2. BLIND CANE

# KIT CONTENTS IN DETAIL

An RGB LED is actually three LEDs, red, green, and blue inside one package. You can produce various other colours by combining these three colours in different proportions.

## RGB LED



It can be used in the following projects:

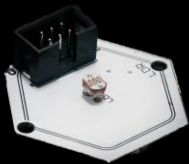
1. AUTOMATIC STREET LIGHTS
2. AUTOMATIC TRAFFIC SIGNALS



# KIT CONTENTS IN DETAIL

A Light Dependent Resistor (LDR) module is an input add-on that detects the amount of light incident on its surface. The intensity varies from 0-100 with 0 corresponding to darkness and 100 corresponding to bright light.

LDR



It can be used in the following projects:

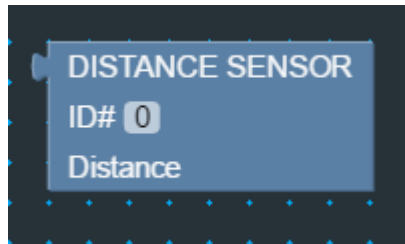
1. **AUTOMATIC STREET LIGHTS**
2. **SOLAR TRACKER**
3. **LIGHT FOLLOWING ROBOT**

## PING SENSOR



# KIT CONTENTS IN DETAIL

The PING Sensor (Ultrasonic Sensor) Module is an input add-on that can measure distance between itself and any object placed in front of it. It can measure a minimum distance of 3cm and maximum distance of 100cm.



It can be used in the following projects:

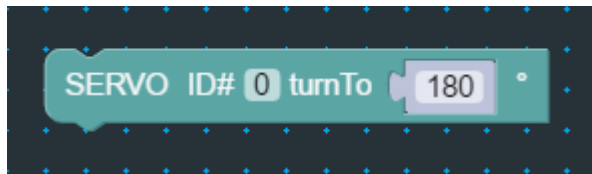
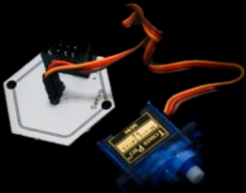
1. **OBSTACLE AVOIDER ROBOT**
2. **BLIND CANE**
3. **AUTOMATIC FILLING OF WATER**

Distance sensor gives zero (0) value when the object is out of range.

# KIT CONTENTS IN DETAIL

The Servo Motor on the module is a DC motor that can be rotated to any angle between 0-180 degrees.

## SERVO



It can be used in the following projects:

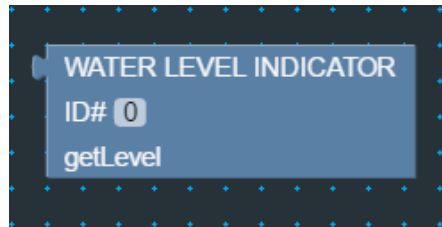
1. ROBOT ARM
2. SOLAR TRACKER
3. AUTOMATIC TOILET FLUSH

## WATER LEVEL INDICATOR



# KIT CONTENTS IN DETAIL

The Water Level Indicator Module is an input add-on that detects water levels by giving 3 values. It gives value of zero (0) when there is no water, value of 1 when the water is rising and value of 2 when the water is full.



The Black wire should be placed at the bottom of the tank, the Brown wire at 10% and the Red wire at 90% of the tank respectively.

It can be used in the following projects:

- 1. AUTOMATIC WATER TANK FILLING SYSTEM**



# DREAM KIT STUDIO

In order to use DREAM Kit, you will need to download **DREAM KIT STUDIO** on to your computer.

Visit [www.dtilabz.com](http://www.dtilabz.com) to download the software & follow the simple installation instructions.

During the DREAM Kit Studio installation process **do not skip** the Driver Software Installation step.

After installing the software and when you open it and you will be presented with 3 regions:

- 1. Discover – Detects add-on modules**
- 2. Code – Graphical User Interface**
- 3. Debug – Displays program & errors**

Most of the work will be confined to the Code region of the software.



# DREAM KIT STUDIO

The Code region of the DREAM Kit Studio has mainly three action buttons.

PORT

Select the correct port to which the HUB is connected.

CONNECT

Once the port has been selected and the add-on modules are plugged to the HUB, use this button to identify the modules connected.

UPLOAD

After the code has been developed, press this to transfer the program onto the HUB. This process takes approximately 2 minutes to complete.



# USING KIT AND STUDIO TOGETHER

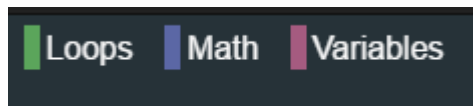
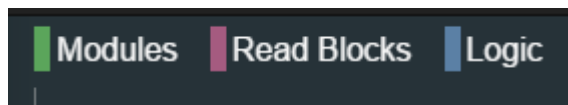
In order to build a project, it is important to follow every step mentioned below:

1. Plug the required add-on modules to the HUB and then power the HUB either using a battery or a USB cable.
2. If you are using a USB cable, then remove the Jumper pins from the HUB, so that the code can be uploaded only via USB.
3. If you are using a battery to power the HUB, then the code can be uploaded only via Bluetooth and make sure that the Jumper pins are in their place.
4. Also, If you are using battery to power the HUB, you need to pair the HUB Bluetooth with the Computer Bluetooth. If the name of the HUB Bluetooth is DK4007, then its password is just the number i.e., 4007. Pair the Bluetooths with each other.



# USING KIT AND STUDIO TOGETHER

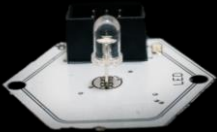
5. To check the Port number of Bluetooth or USB, go to Devices & Printers → Right Click on Device → Properties → Hardware → Port Number.
6. Next open the DK Studio, select the correct USB port or Bluetooth port.
7. Use the Graphical Programming Interface to code your project. You can use the following tools to develop your code.



8. After developing the code, click on Upload Button to transfer the program on to the HUB.

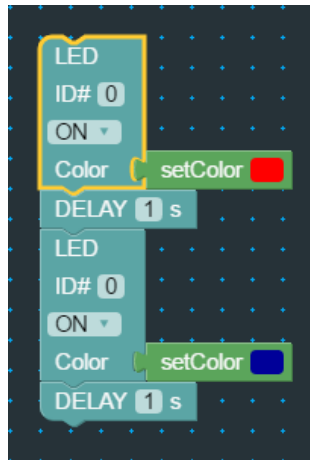


## BLINKY RGB LED



# BASIC PROJECTS

In this project, the RGB LED will change color after every second. Connect the LED module to the HUB and then plug the HUB to the computer. Use the Port button to select the correct USB port. Click on Connect button to ensure that the LED module has been detected.

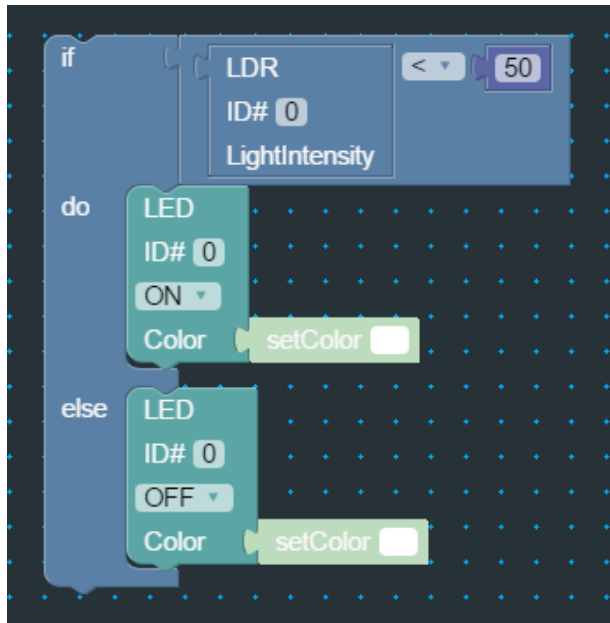


Press the Upload button after you have coded the program and then watch the LED change colours every second.

# BASIC PROJECTS

In this project, RGB LED and LDR modules are used. The RGB LED is controlled according to the intensity of light incident on the LDR.

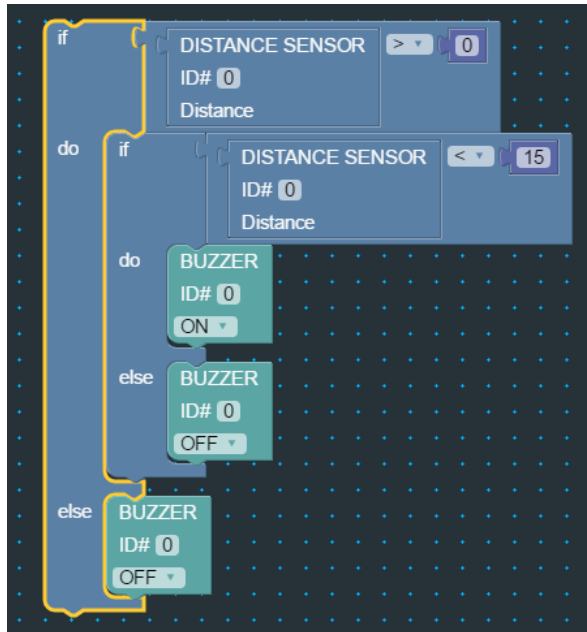
LDR  
CONTROLLED  
RGB LED



Press the Upload button after you have coded the program and RGB LED will glow when the light intensity is less than 50.

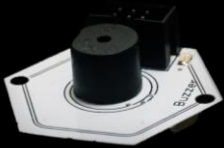
# BASIC PROJECTS

In this project, Distance Sensor and Buzzer Modules are used. The buzzer will beep if the distance is less than 15cm and greater than 0cm.



Press the Upload button after you have coded the program and buzzer will beep when the object is at a distance less than 15cm.

BLIND  
CANE





To know more about the kit,  
watch tutorials, get the latest  
updates or post queries visit  
our website

[www.dtilabz.com](http://www.dtilabz.com)