REAL TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM

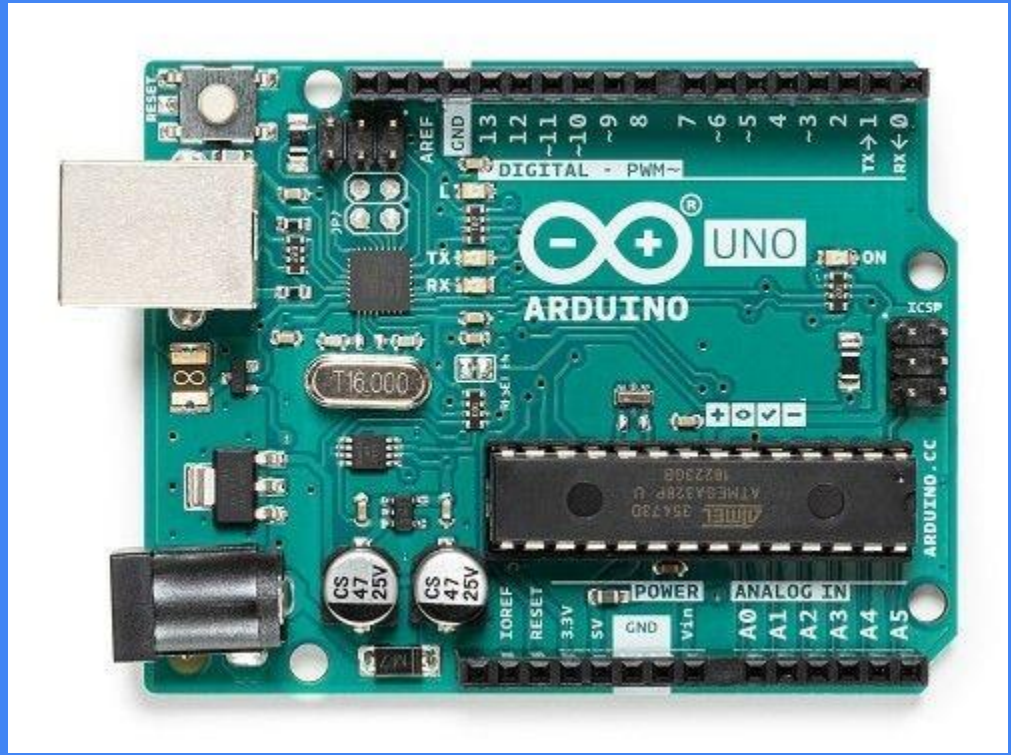
DATE	3 NOVEMBER 2022
TEAM ID	PNT2022TMID52160

Objective

- Basics of Arduino Uno.
- Arduino IDE.
- Hands-on using TinkerCad.

Arduino Uno

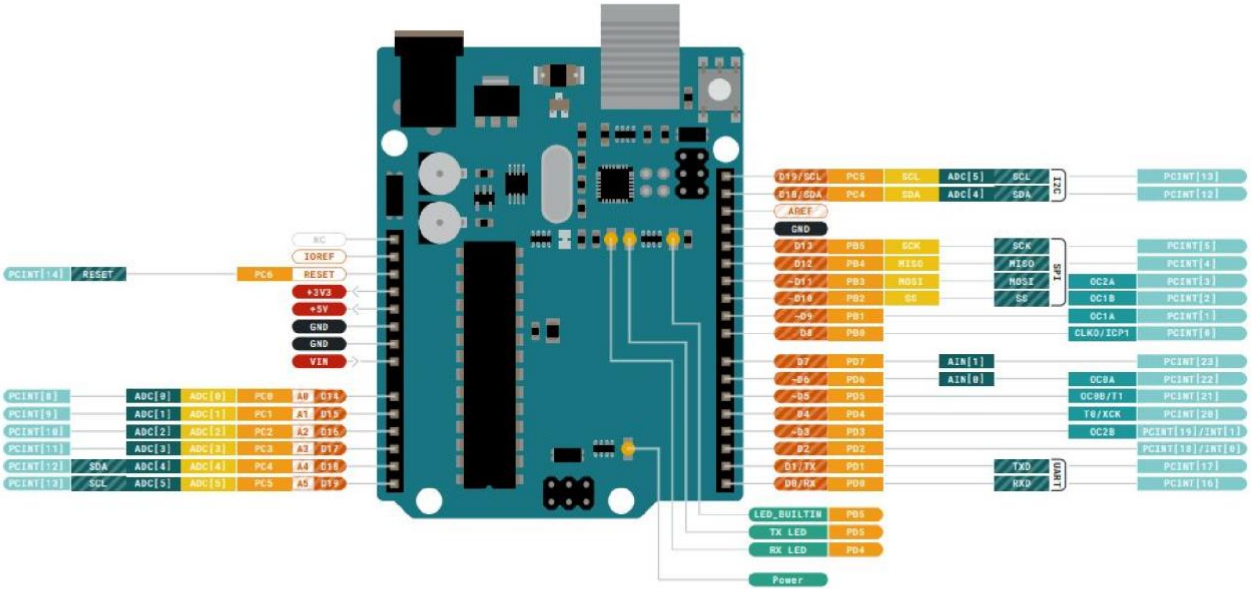
AVR® 8-Bit Microcontroller Family


RESET
AREF
GND
13 12 ~11 ~10 ~9 8 7 ~6 ~5 4 ~3 2 TX→1 RX←0
DIGITAL (PWM~)
UNO
ARDUINO
ON
ICSP
TX
RX
16.000
ARDUINO.CC
POWER
ANALOG IN
IOREF
RESET
3.3V
5V
GND
Vin
A0 A1 A2 A3 A4 A5

ARDUINO

ARDUINO UNO REV3

STORE.ARDUINO.CC/UNO-REV3



Ground
Power
Digital Pin
Analog Pin
Analog
Communication

MAXIMUM current per I/O pin is 20mA

VIN 6-20 V input to the board.

ARDUINO.CC

Last update: 17/06/2020

Specifications

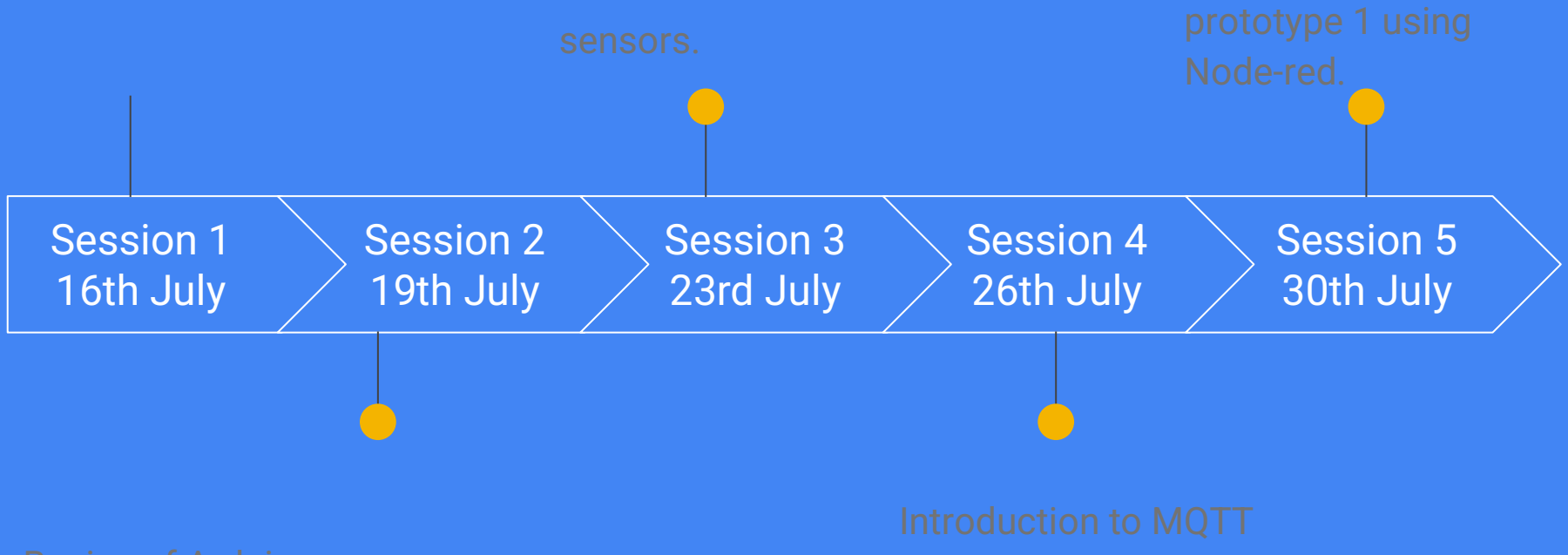
- Microcontroller ATmega328P
- Digital I/O Pins 14 (of which 6 provide PWM output)
- Analog Input Pins 6
- Flash Memory 32 KB (ATmega328P) of which 0.5 KB used by bootloader
- SRAM 2 KB (ATmega328P)
- Clock Speed 16 MHz

Hands-on

End to end integration of water level

monitoring system

Types of proximity


sensors.
prototype 1 using Node-red.
Session 1 16th July
Session 2 19th July
Session 3 23rd July
Session 4 26th July
Session 5 30th July
Basics of Arduino
Introduction to MQTT

Sensor integration with Arduino and and Node-red. nodemcu.

Make a 3 bit counter with a delay of 500ms in between the count.

Use 3 separate LEDs.

Simulation tool - TinkerCad.

Description :

At 000; LED1 Low LED2 Low LED3 Low

At 001; LED1 Low LED2 Low LED3 HIGH

At 010; LED1 Low LED2 HIGH LED3 Low

...

At 111; LED1 HIGH LED2 HIGH LED3 HIGH