

Mini-Project

Computer Aided Design & Digital Fabrication

Skills Future Training

19 – 25 Sep 2023

Mini-Project Brief

- Design an automated Tea-Maker which will allow you to make the perfect cup of tea
- Your Tea-Maker should include the following:
 - CAD design
 - Laser Cut part(s)
 - 3D printed part(s)
 - Embedded controller board
 - Input & output device(s)
- The Tea-Maker should be properly integrated, with no loose wiring and electronic parts should be mounted firmly

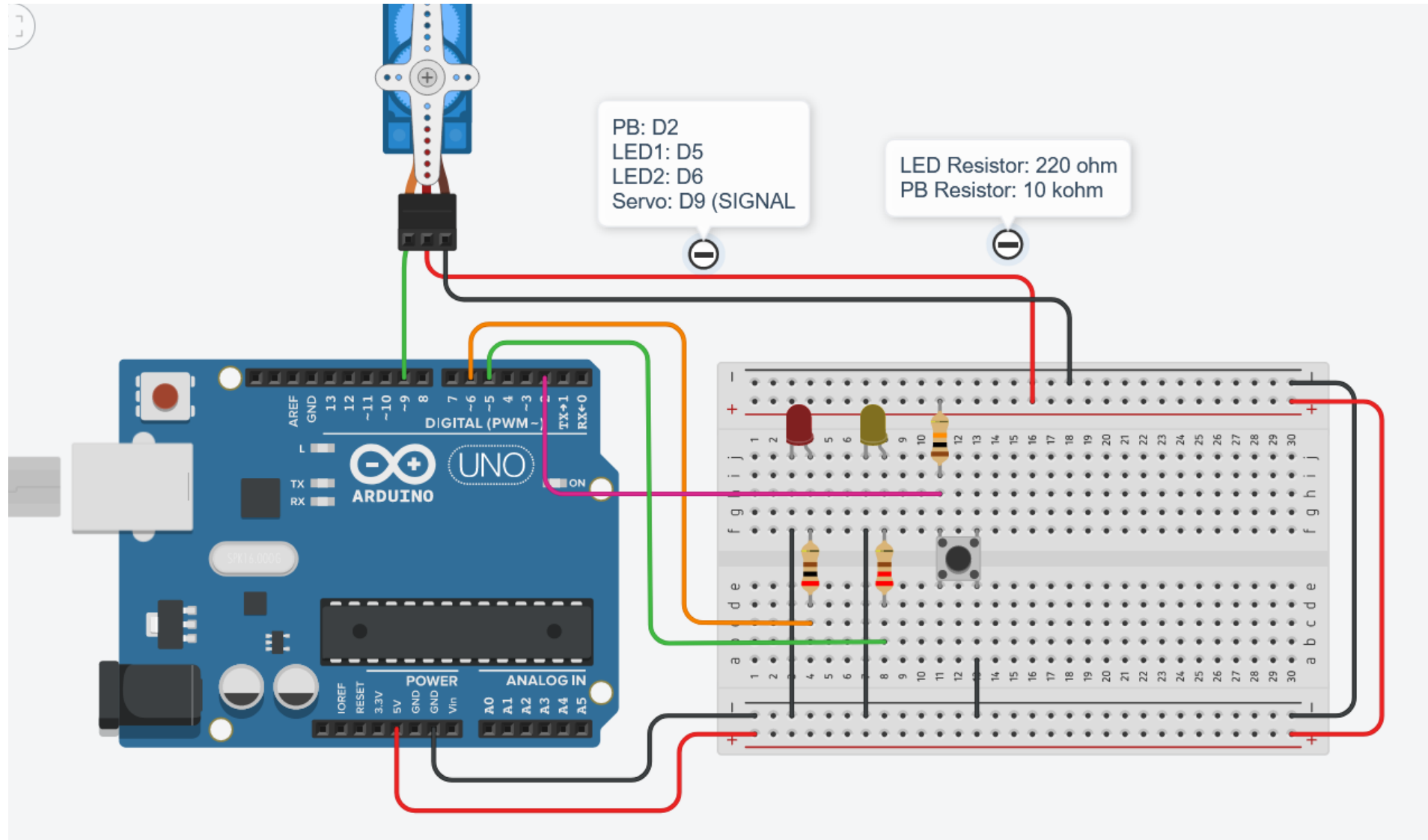


Parts Available

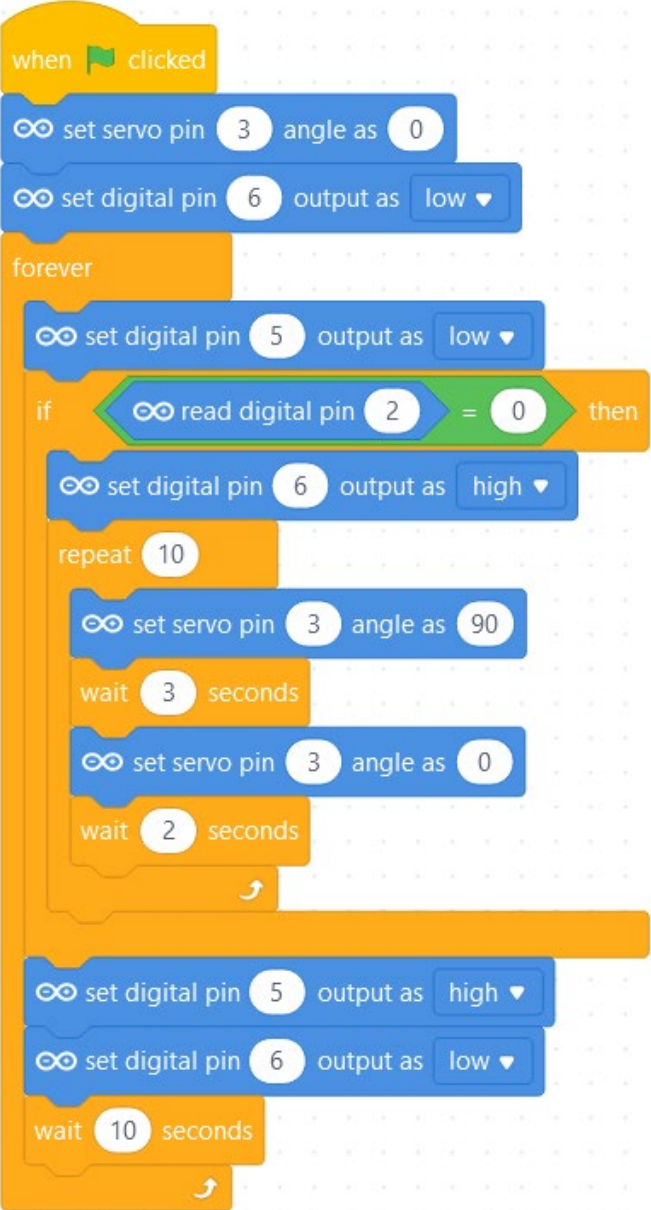
- You are provided with the following parts/components for your mini-project:
 - Arduino Uno R3
 - Servo motor
 - Push button switch
 - LEDs x2
 - Dupont cables
- This is a 4-hour project, not your life-time work, so plan accordingly



Electronics (Connections)



mBlock Code



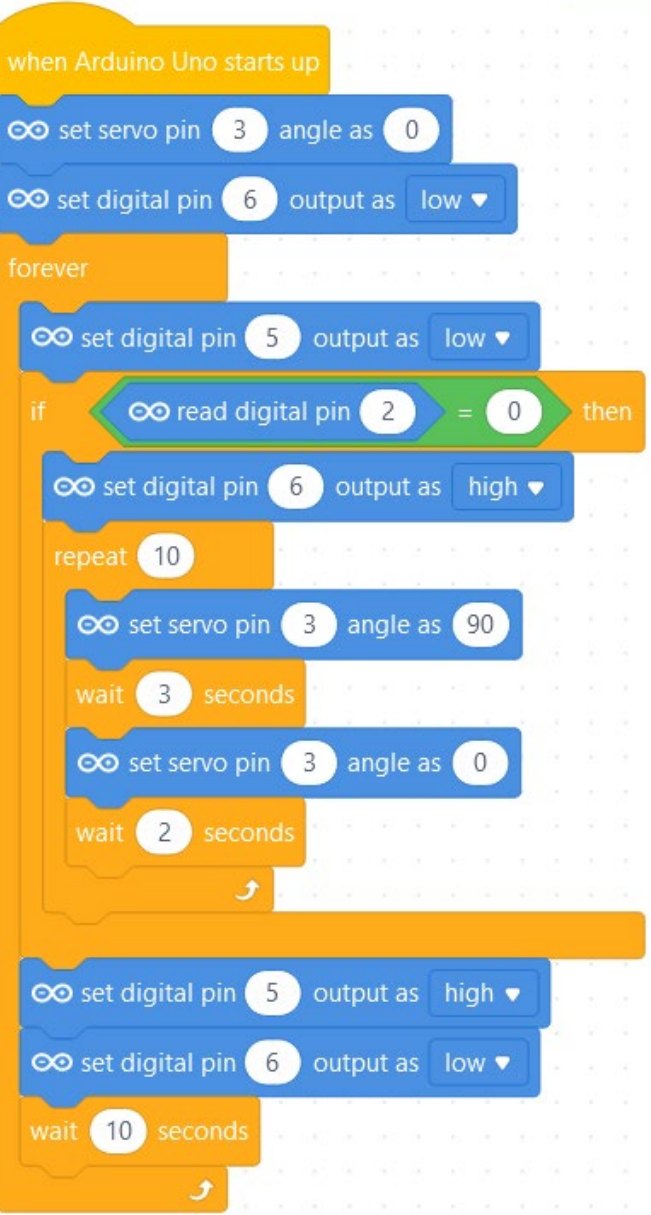
when green flag clicked

- set servo pin 3 angle as 0
- set digital pin 6 output as low

forever loop:

- set digital pin 5 output as low
- if read digital pin 2 = 0 then
 - set digital pin 6 output as high
 - repeat 10
 - set servo pin 3 angle as 90
 - wait 3 seconds
 - set servo pin 3 angle as 0
 - wait 2 seconds
- set digital pin 5 output as high
- set digital pin 6 output as low
- wait 10 seconds

LIVE mode



when Arduino Uno starts up

- set servo pin 3 angle as 0
- set digital pin 6 output as low

forever loop:

- set digital pin 5 output as low
- if read digital pin 2 = 0 then
 - set digital pin 6 output as high
 - repeat 10
 - set servo pin 3 angle as 90
 - wait 3 seconds
 - set servo pin 3 angle as 0
 - wait 2 seconds
- set digital pin 5 output as high
- set digital pin 6 output as low
- wait 10 seconds

UPLOAD mode