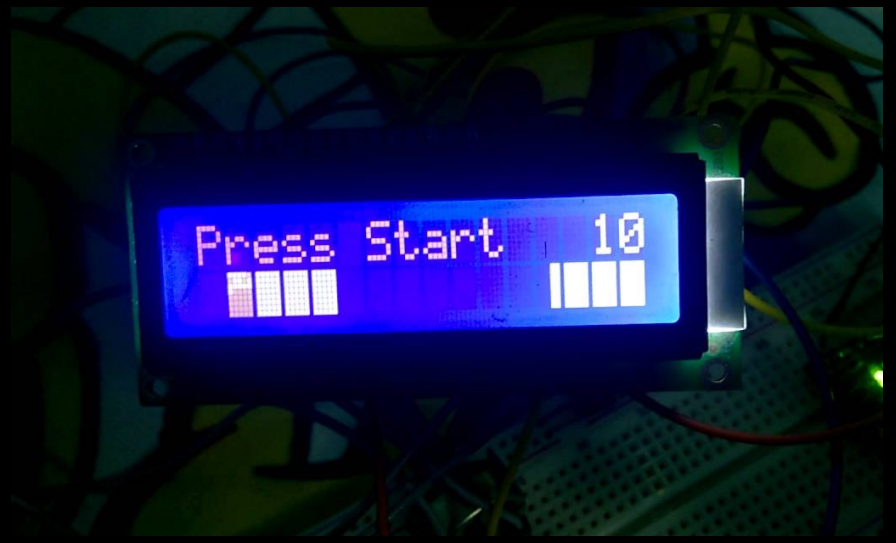
ARDUINO WORKSHOP

LCD spill

Agenda

- Kort om Arduino
  Hva er Arduino?
  Hvorfor Arduino?
  Utbytte
- Koding med C++
  Bli kjent med kodespråket C++
  Arduino IDE
- Dagens prosjekt
  Fremgangsmetode
  Koden



Arduino

- “Mikrokontroller” -> veldig liten datamaskin
- Leser innganger og gjør det om til utganger
- Enkelt og billig
- Gir et bredt spekter av muligheter

  LED-cube

  Lese av sensorer

  Aktivere motorer

  Selvkjørende roboter

Forstå brettet

LCD

GND - ground

VCC - voltage

Vo – LCD contrast controller

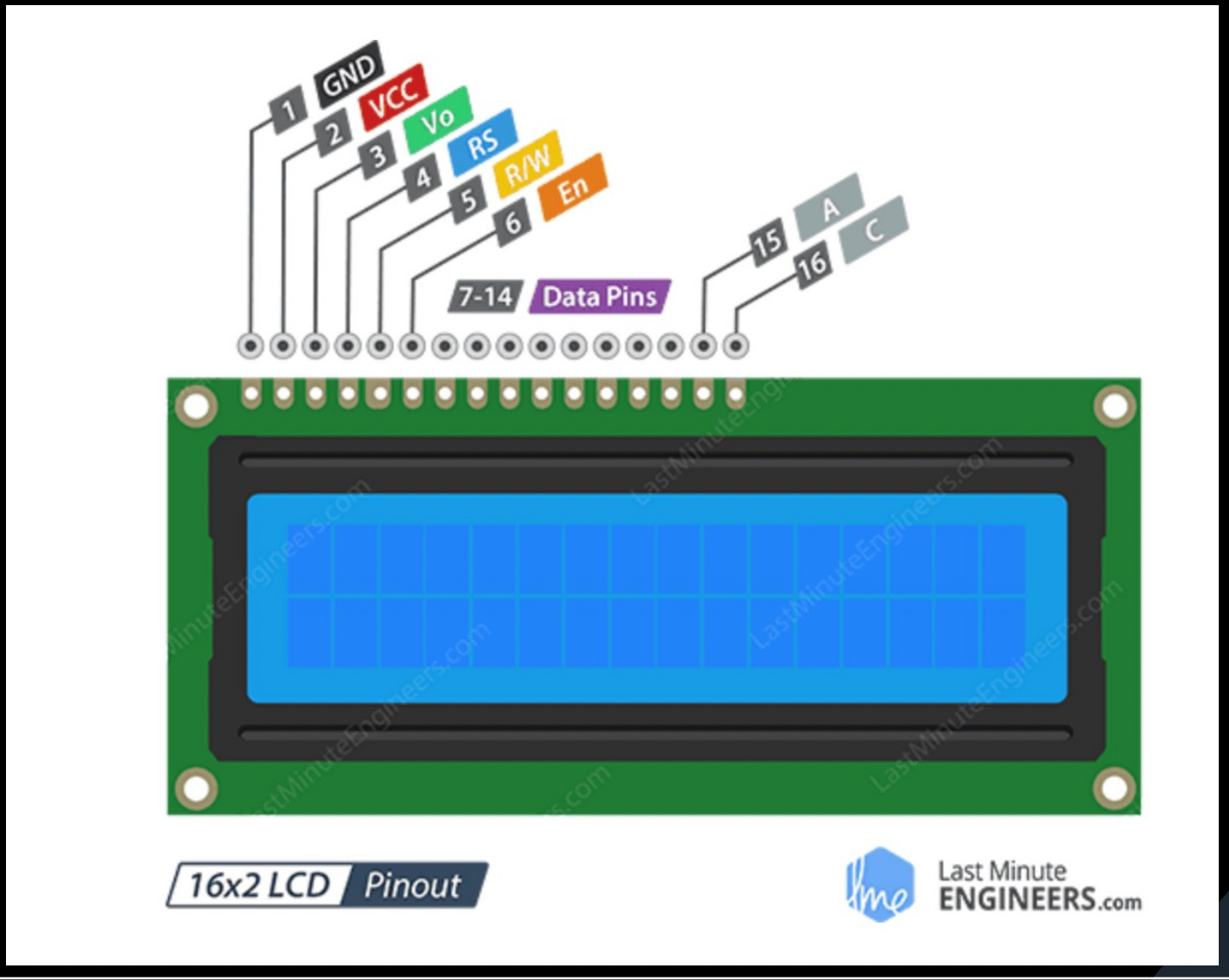
RS – commands to LCD

R/W – Write data to LCD

E – process incoming data

D0-D7 – carries data from Arduino

A/C – controls LCD backlight



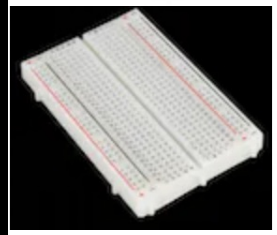
Arduino IDE

- Software
- Kode manipulerer arduinoen til å gjøre ønskede oppgaver
- Åpen kildekode
- Språket brettet forstår er C++

Dagens prosjekt: LCD spill

- Trenger:

Arduino UNO



Breadboard (generic)

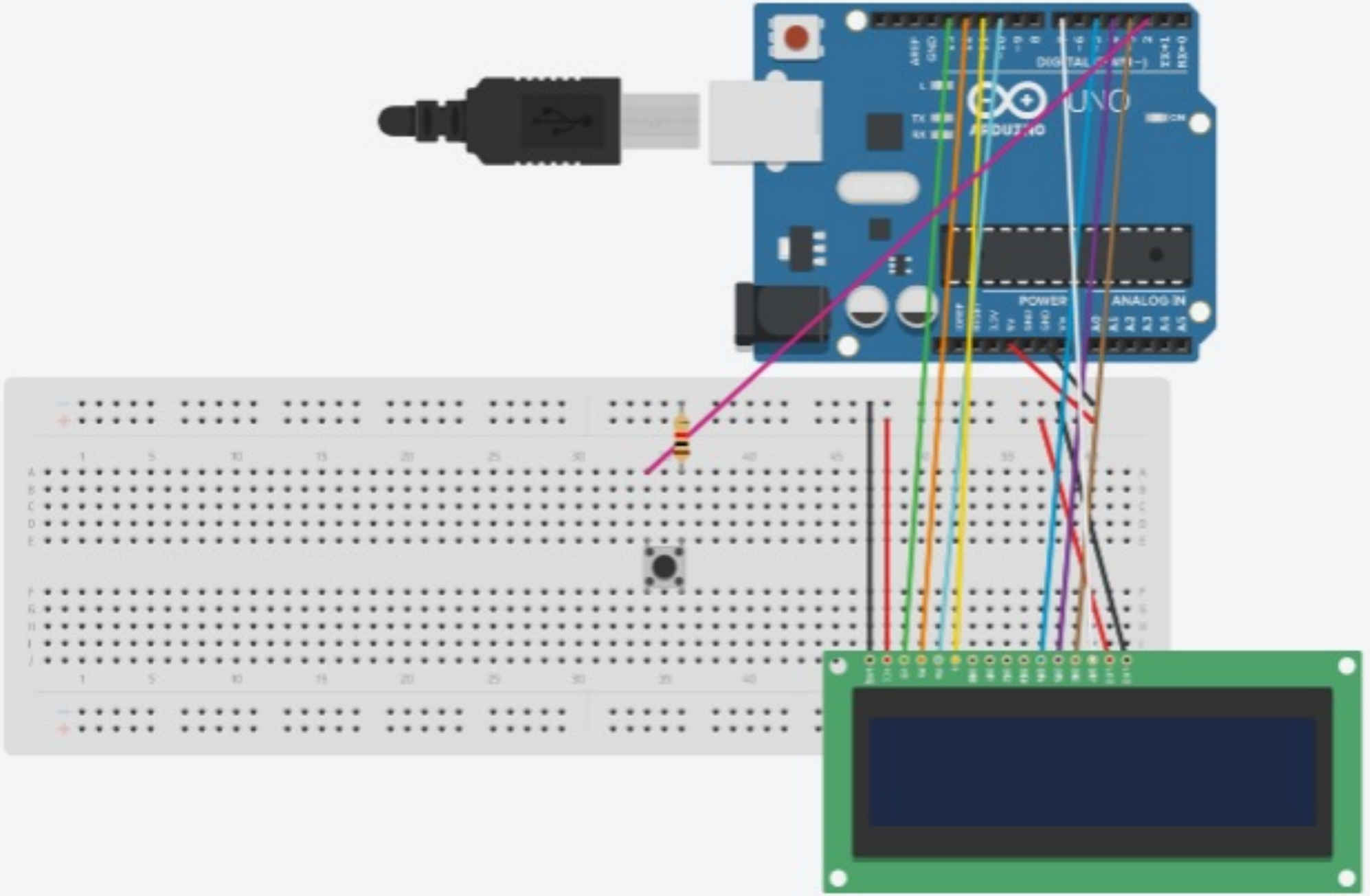
Alphanumeric LCD, 16 x 2

Resistor 220 ohm

Jumper wires (generic)

SparkFun Pushbutton switch 12mm

https://www.youtube.com/watch?v=flC3_X-yJ-I&t=2s


UNO
POWER
ANALOG IN

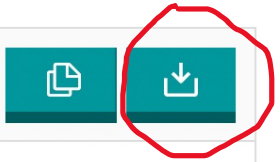
Koden

- Google søk:

arduino lcd game 16x2

CODE

Code LCD game Arduino



```
#include <LiquidCrystal.h>

#define PIN_BUTTON 2
#define PIN_AUTOPLAY 1
#define PIN_BUZZER 8
#define PIN_READWRITE 10
#define PIN_CONTRAST 13

#define SPRITE_RUN1 1
#define SPRITE_RUN2 2
#define SPRITE_JUMP 3
#define SPRITE_JUMP_UPPER '.'          // Use the '.' character for t
#define SPRITE_JUMP_LOWER 4
#define SPRITE_TERRAIN_EMPTY ' '       // User the ' ' character
#define SPRITE_TERRAIN_SOLID 5
#define SPRITE_TERRAIN_SOLID_RIGHT 6
#define SPRITE_TERRAIN_SOLID_LEFT 7

#define HERO_HORIZONTAL_POSITION 1     // Horizontal position of hero

#define TERRAIN_WIDTH 16
```

Spørsmål?