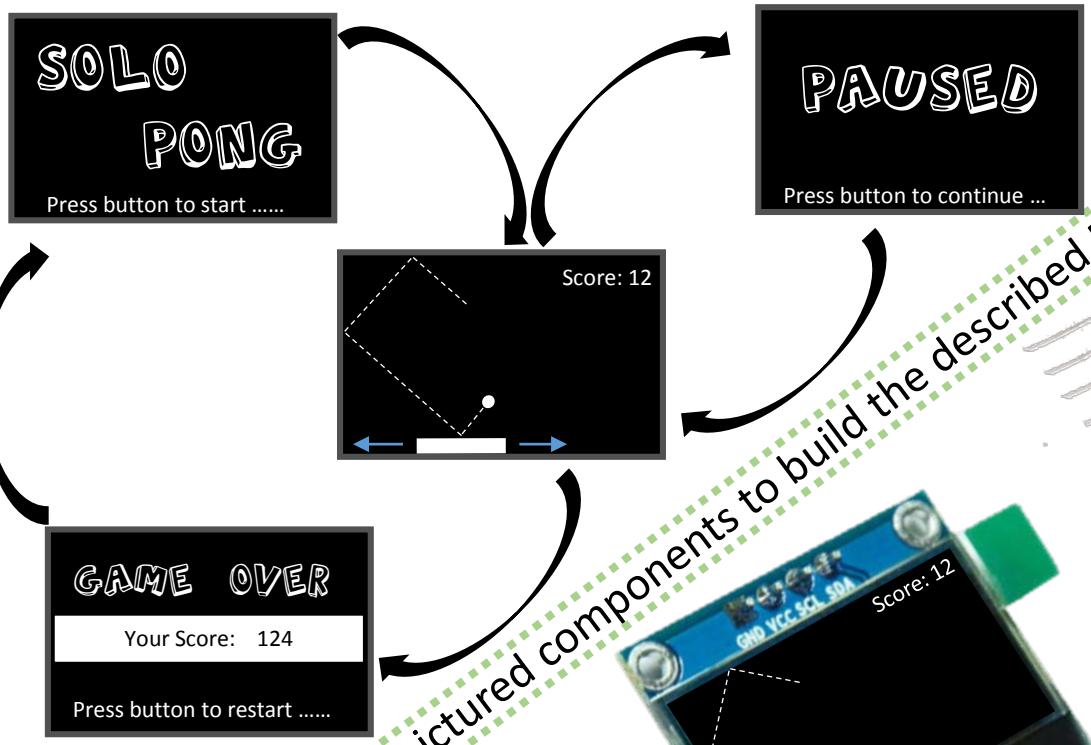
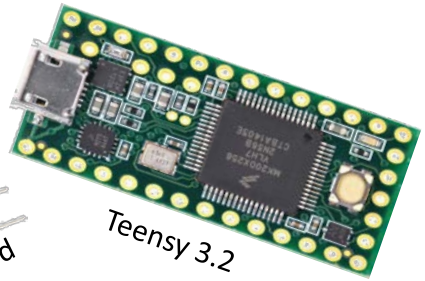
Implement the famous game Pong as a single player version

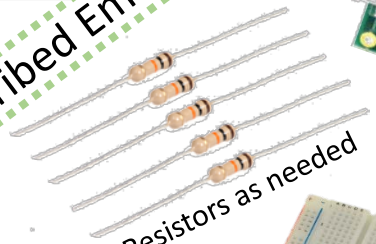
- Game Design and Implementation as a state-machine (enum + switch… case…)
- Incorporate START | PAUSE | RESTART button(s)
- Use the Potentiometer as the paddle controller (left <-> right)

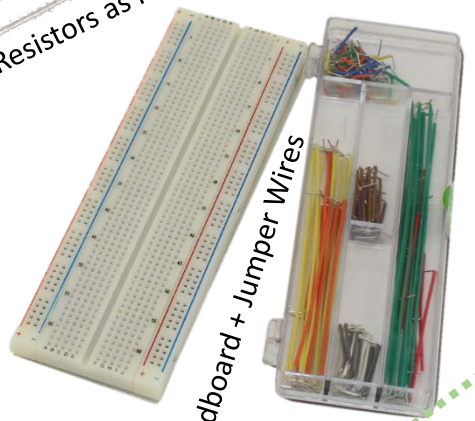


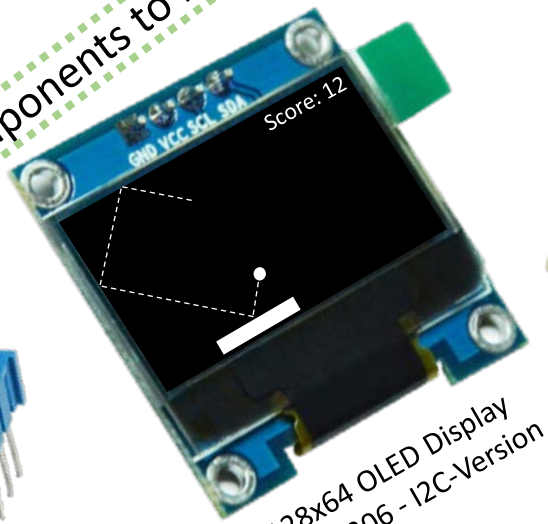
Use the pictured components to build the described Embedded Systems.


Buttons as needed


Teensy 3.2


Resistors as needed


Breadboard + Jumper Wires



128x64 OLED Display
SDD1306 - I2C-Version


10 kΩ Potentiometer

NEXTPAGE

RULES

REQUIRED PROJECT OUTPUT

RULES:
- Implement a start-screen, the actual game and an endscreen
- Display a player score (game-screen and end-screen)
- Implement a continues increase of the balls velocity
- Implement debouncing of your button(s)
- Design and Implementation as a state-machine
- Feel free to use the Adafruit libraries: Adafruit_SSD1306 and Adafruit_GFX

Questions: Frank.Beinersdorf@weltec.ac.nz

This Projects accounts for 20% of your overall course mark.

REQUIRED PROJECT OUTPUT:
- Working hardware prototype
- Video of yourself explaining the operation of your system
- Project report, including
  - General project description (purpose, …)
  - Describe your design process (**incl. state – transition diagram**)
  - Schematic (e.g. Fritzing) + Why did you choose certain components and their values
  - Source Code (well commented)
  - Limitations of your project + possible future improvements
  - Appendix with relevant datasheets(if available)
  - Use of proper APA referencing

WelTec