Line Following Bot:

Concept Abstraction and pseudo code lvl1:

Following the line:

Uses IR detectors (IRDs):

if (leftIRD && rightIRD detect line)

motors(stop)

If leftIRD detects line

rightMotors(increase speed)

else if rightIRD detects line

leftMotors(increase speed)

Ultrasound sensor:

detects objects and distance:

x = safe stopping distance

if(ultraS.returnDistance < x)

motors.(stop)

BOT BITS:

Build 1, Build Everything ≥ *£36*

2XAA Battery Holder: £2:35

<https://www.ebay.co.uk/itm/183061475059>

Motors and Wheels: £5:65

<https://www.amazon.co.uk/TOOGOO-Arduino-Smart-Robot-Plastic/dp/B07D8N4VMG/ref=pd_sbs_147_8?_encoding=UTF8&pd_rd_i=B07D8N4VMG&pd_rd_r=1d722901-6f30-47a7-9d15-7989746c97ef&pd_rd_w=11rBV&pd_rd_wg=gtR9A&pf_rd_p=f4a31d1d-8f61-48f5-b6f4-a22ba06df575&pf_rd_r=N684WESQ4KC4JGQ9NT66&psc=1&refRID=N684WESQ4KC4JGQ9NT66>

IR sensors: £4:40

<https://www.ebay.co.uk/itm/262723014158>

UltraSound sensor: £2.99

<https://www.ebay.co.uk/itm/221652815175>

Driver (H bridge) : £3:90

<https://www.ebay.co.uk/itm/263164815746>

Mixed Jump Wires: ≅ £6

<https://www.ebay.co.uk/itm/113798126900>

Arduino Board: £7

<https://www.ebay.co.uk/itm/ARDUINO-UNO-R3-ATmega328P-ATmega16U2-Development-Board-with-USB-Cable/152950570075?_trkparms=aid%3D555018%26algo%3DPL.SIM%26ao%3D1%26asc%3D20190212102350%26meid%3Dd84f280a5a4a4e7691057511db998ea4%26pid%3D100012%26rk%3D3%26rkt%3D12%26mehot%3Dpp%26sd%3D143444636634%26itm%3D152950570075%26pmt%3D1%26noa%3D0%26pg%3D2047675&_trksid=p2047675.c100012.m1985#>

WIFI chip: £3:05

<https://www.ebay.co.uk/itm/ESP8266-ESP-12F-Serial-Wireless-WIFI-Transceiver-Module-Arduino-Raspberry-PI/263170828495?epid=23018753903&hash=item3d463428cf:g:m14AAOSw-1JdNw3Z>

4 Wheel bot ≅ £39.00

2Wheel bot ≅ £36.00

2 wheel robots are easier to program, can be smaller, and have a tighter turning circle at low speed

Emailed Nicola to ask if we have access to cad cam software

Build 2, buy kit and add bits ≅ *£28*

Mostly full kit: £12.86

<https://www.ebay.co.uk/itm/Motor-Smart-Robot-Car-Chassis-Kit-with-Speed-Encoder-Wheels-for-Arduino-DIY/401713712437?hash=item5d8800cd35:g:aEUAAOSwRcZcZtrI>

Mixed Jump Wires: ≅ £6

<https://www.ebay.co.uk/itm/113798126900>

WIFI chip: £3.05

<https://www.ebay.co.uk/itm/ESP8266-ESP-12F-Serial-Wireless-WIFI-Transceiver-Module-Arduino-Raspberry-PI/263170828495?epid=23018753903&hash=item3d463428cf:g:m14AAOSw-1JdNw3Z>

IR sensors: £4:40

<https://www.ebay.co.uk/itm/262723014158>

Things to learn

Setting up wifi chip – Nathan,

Time/date / timers / scheduling – Brandon,

Speak to server team and work out – Fionn