

Hardware proposal for Arcade cabinet

Micro Controller:

- It was discussed with team members and it was decided the raspberry pi would be a valid option for the neural network and arcade game, both of which are run in Python
- Based on RS overview of Raspberry Pi and tutorials on neural networks and the Raspberry Pi, the project needs a minimum of Raspberry Pi 3 Model B. It may run on the Raspberry Pi 2 Model B but the price only differs by at most by <£1 in all stores
 - *Prices:*
 - Model 3 B+ :

◦ £34.07 (RS)(Free)	£34.07
◦ £34.00(ModMyPi)(£3.50)	£37.50
◦ £36.11(Farnell)(Free)	£36.11
◦ £32.00(Pimoroni)(£2.50 postage)	£34.50
◦ £32.00(ThePiHut)(£2.50 postage)	£34.50
 - Model 3 B:

◦ Prices match above (RS) (Farnell) (ThePiHut)	
◦ £31.99(ModMyPi)(£3.50)	£35.49
◦ Not listed on Pimoroni	

Considering the above prices the best option is the Raspberry Pi 3 Model B+:

- **34.07 ([RS](#))(Free)**
 - Power supply:
 - The raspberry pi needs USB 5v power:

◦ £5.80(RS)(Free)
◦ £6.00 (ModMyPi)(£3.50)
◦ £6.75(Farnell)(Free)
◦ £8.00 (Pimoroni)(£2.50)
◦ £8.00(ThePiHut)

Considering the price above, the best option is:

- **£5.80([RS](#))(Free)**

*(Only researched official resellers indicated by Raspberry Pi Foundation)
(All prices incl. vat, perhaps vat deductible?)*

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Cabinet Hardware:

- **Option one:** Pre-made cabinet (does not include raspberry pi)
 - *Picade:*
 - £150 ([Pimoroni](#))
 - £150([ThePiHut](#))
 - Out of stock elsewhere
 - *Porta Pi Arcade 10" Vertical:*
 - \$305([here](#))
 - *Porta Pi Arcade Nano:*
 - \$297([here](#))
 - *Porta Pi Arcade Classic:*
 - \$340 ([here](#))
- **Option two:** Build our own
 - Screen: (Grouped together by size, smaller than 4.0" available, larger than 10" also available)
 - 4.0"
 - £32.50([ThePiHut](#))([Pimoroni](#))
 - 5.0" Touchscreen:
 - £37.00([ThePiHut](#))
 - £43.99([ModMyPi](#))
 - 5.0" :
 - £28.00([ThePiHut](#))
 - £53.50([Pimoroni](#))
 - £55.50([ModMyPi](#))
 - 7" Touchscreen:
 - £59.63([Farnell](#))
 - £60.00([ThePiHut](#))
 - £60.00 ([Pimoroni](#))
 - £59.99([ModMyPi](#))
 - 56.37([RS](#))
 - £60.47([RS](#))
 - £104.39([RS](#))
 - 8":
 - £55([Pimoroni](#))
 - 10.1":
 - £95.99([RS](#))

(Other screens appear cheaper however did not include driver board and so when including driver board, price was not competitive)

Hardware proposal for Arcade cabinet

- Joysticks and buttons:
 - Buttons and Joystick:
 - £16.98([amazon](#))(free)
 - £22.99([amazon](#))(free)
 - £23.19([amazon](#))(free)
 - £13.21([ali](#))(Free 20-40day postage)
 - 2 Player buttons and joysticks:
 - £34.99([amazon](#))(free)
 - £55.13([amazon](#))(free)
 - Sparkfun PiRerocade
 - \$44.95 ([here](#))(£18 postage)
- **Option three: Monitor with smaller cabinet game**
 - Monitor: *free (Using one Craft Prospect has)*
 - Parts: *same as above (except for screen)*

Cabinet material:

Unclear what material should be used. A few options are:

- £22.48 Veneered MDF(Wood)((Th)18mm (W)1220mm (L)2440mm)([here](#))
- £36 Perspex(See-through)(1.2m x 1200mm)([here](#))
- 3D printing
 - 100 + hours of making
 - Potentially free(*dependant on size, need discussion with uni*)

All options should be viable to made at university. Prices may change dependant on screen size(*which controls cabinet size*)