

# Usability Analysis

## COMP140 - Usability Analysis

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### 1 Introduction

This report will analyse the COMP140 hardware hacking controller using the heuristic analysis method suggested by Nielsen [1].

### 2 Heuristics

The heuristics I've used are the ones designed by Nielsen:

- Visibility of system status
- Match between system and the real world
- User control and freedom
- Consistency and standards
- Error prevention
- Recognition rather than recall
- Flexibility and efficiency of use

- Aesthetic and minimalist design
- Help users recognize, diagnose, and recover from errors
- Help and documentation [2]

However none of Nielsen's heuristics are specific to games. Therefore I would also add some of Pinelle *et al*'s heuristics relating to game controls such as clumsy input scheme and command sequences being too complex [3].

### 3 The Controller

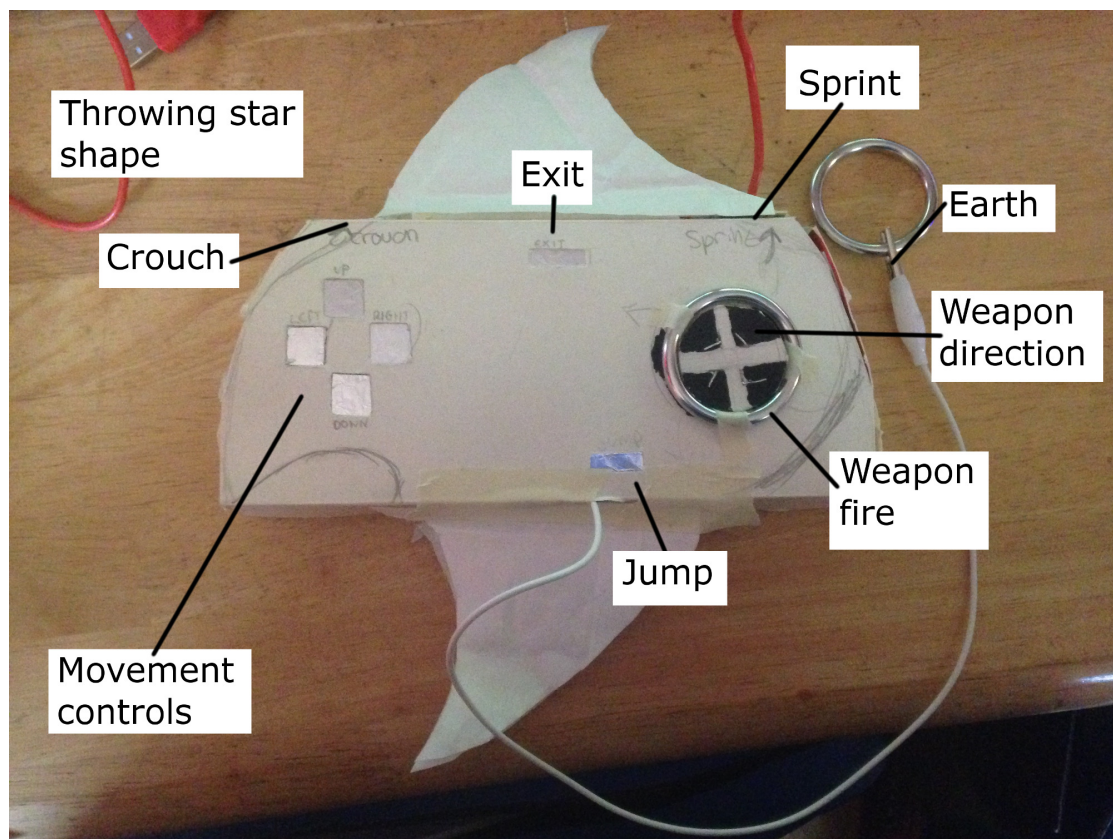


Figure 1: The controller.

Figure 1 shows the controller. The controller is designed to look like a ninja throwing

star to fit the theme of the game it was designed for. It is designed for younger children that are more likely to be interested in different shaped controllers.

## **4 Two Improvements**

The first issue with the controller is the aesthetic and minimalist design. The throwing star shape means that one side will be shaped similarly to a controller such as the PS4 controller. This side should be easy to grip and use. However the other side curves upwards which may be hard to grip or may not be able to grip easily. This may lead to the buttons on that side of the controller being harder to use. Also the change in shape may mean that the controller is uncomfortable to use for extended periods of use.

An issue with my controller is the visibility of system status. The controller should always be informing the user of the system status. Currently there is no indicator as to whether the controller is on and functioning correctly. The MakeyMakey kit has an LED to indicate whether it is powered on. The controller casing could be adapted to make this LED visible so the user. The MakeyMakey also has the functionality to add another LED that will flash when either a keyboard or mouse button is pressed. An LED could be added to the controller to test whether the buttons are all functional however it would likely annoy the user if the controller flashed every time they pressed a button. These two improvements will inform the user of the system status.

## **5 Conclusion**

In conclusion

## **References**

- [1] J. Nielsen, “How to conduct a heuristic evaluation [online] at (<https://www.nngroup.com/articles/how-to-conduct-a-heuristic-evaluation/>)

accessed on 7 may 2016,” 1995.

- [2] J. Nielsen, “10 usability heuristics for user interface design [online] at (<https://www.nngroup.com/articles/ten-usability-heuristics/>) accessed on 6 may 2016,” 1995.
- [3] D. Pinelle, N. Wong, and T. Stach, “Heuristic evaluation for games: Usability principles for video game design,” in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, CHI '08, (New York, NY, USA), pp. 1453–1462, ACM, 2008.