

## CHAPTER 5

### CONCLUSION AND RECOMMENDATION

#### 5.1 Conclusion

Based on the research and test that have been carried out, it can be concluded:

1. This virtual reality-based application for colour blind detection has been successfully designed and built using Unity Game Engine alongside Google Cardboard SDK.
2. Evaluation of the user experience using Hedonic-Motivation System Adoption Model (HMSAM) modelling was used to evaluate the joy, control, and perceived ease of use of the application with score percentages of 87.87%, 80.83%, and 84.58% for joy, control, and perceived ease of use.

The confusion matrix result also shows that both tests within the game have a 90% accuracy in detecting colour blindness.

#### 5.2 Recommendation

Some recommendation that can be considered for further research are as follows:

1. Colour blind detection game can be implemented on various other platforms such as PC and Tablet.
2. Implementation of grid snapping for the D15 Farnsworth-Munsell test would make the user experience and control much smoother.

3. When using headset motion-sickness sensitive participants might feel nausea and/or dizziness, this can happen especially if the rendering is heavy. A new method for faster rendering such as converting to a lower poly but preserving the texture could be proposed to avoid this problem.
4. After conducting the test, it was found that majority of users would skip the how to play option and would prefer a Non-Player Character (NPC) to guide the user throughout the game.
5. Since the field of view of a virtual-reality game is limited, it would be nice to add a different camera view option for the D15 Farnsworth test, such as a bird's eye view so players can get a view of the whole arrangement easily.