Testing Log

This document will be used to record the result of testing the trick identification system to see how it performs and to see and understand when and why the problems are occurring. I will split the testing it phases where appropriate.

Testing Phase 1

Initial implementation of the trick identification system which should be able to detect 4 different tricks:

1. Kickflip
2. Heelflip
3. Pop Shuv – It
4. Manual

Below are the test results of this implementation.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Expected Outcome | Actual Outcome | Result | Reason for Fail /Action taken |
| 1. | 1 x Heelflip  4 x Manual  2 x Kickflip  2 x Pop Shuv-It | 2 x Heelflip  5 x Manual  2 x Kickflip  2 x Pop Shuv-It | Fail | Wrong data – whoops! |
| 2. | 3 x Heelflip  2 x Manual  1 x Kickflip  4 x Pop Shuv-It | 3 x Heelflip  3 x Kickflip  3 x Manual  4 x Pop Shuv-It | Fail | None – Playing around with test data again. |
| 3. | 1 x Kickflip | 1 x Kickflip | Pass | N/A |
| 4. | 1 x Kickflip  1 x Manual | 1 x Kickflip  1 x Manual | Pass | N/A |
| 5. | 2 x Kickflip  1 x Manual  1 x Heelflip | 2 x Kickflip  1 x Manual  1 x Heelflip | Pass | N/A |
| 6. | 2 x Kickflip  1 x Manual  1 x Heelflip  1 x Pop Shuv-It | 2 x Kickflip  1 x Manual  1 x Heelflip  1 x Pop Shuv-It | Pass | N/A |
| 7. | 2 x Kickflip  1 x Manual  3 x Heelflip  2 x Pop Shuv-It | 3 x Kickflip  1 x Manual  3 x Heelflip  2 x Pop Shuv-It | Fail | See 8. |
| 8. | 3 x Kickflip  1 x Heelflip | 3 x Kickflip  3 x Heelflip | Fail | Added condition to check roll and pitch for kick and heelflips. |
| 9. | 3 x Kickflip  1 x Heelflip | 3 x Kickflip  3 x Heelflip | Fail | Unsure |
| 10. | 4 x Manual  3 x Pop Shuv-It | 4 x Manual  3 x Pop Shuv-It | Pass | N/A |
| 11. | 7 x Manual  3 x Pop Shuv-It | 7 x Manual  3 x Pop Shuv-It | Pass | N/A |
| 12. | 7 x Manual  3 x Pop Shuv-It  1 x Heelflip | 7 x Manual  3 x Pop Shuv-It  1 x Heelflip | Pass | N/A |
| 13. | 2 x Heelflip | 2 x Heelflip | Pass | N/A |
| 14. | 3 x Heelflip  1 x Kickflip | 3 x Heelflip  1 x Kickflip | Pass | N/A |
| 15. | 3 x Heelflip  2 x Kickflip | 3 x Heelflip  3 x Kickflip | Fail | When kickflip happens before heelflip then kickflip count ends up being wrong. |
| 16. | 3 x Heelflip  1 x Kickflip | 3 x Heelflip  2 x Kickflip | Fail | When kickflip happens before heelflip then kickflip count ends up being wrong. |
| 17. | 4 x Heelflip | 4 x Heelflip  1 x Kickflip | Fail | When over 4 of heelflips the result is incorrect. |
| 18. | 3 x Heelflip | 3 x Heelflip | Pass | N/A |

End of Cases Comments:

I am happy with the process of detecting both the Manual and Pop Shuv-It Tricks, Pop Shuv-It was always going to be easiest to detect as it is one of the only tricks that a significant change in heading is an indication of when the trick has been performed.

I have now changed the method for identifying both kickflips and heelflips to follow this procedure:

1. Check for when first phase bounds are satisfied (Low Roll & high pitch)
2. If this is satisfied 7 times in a row, then this will change phase 1 to true.
3. If phase 1 is set as true, a variable count will be incremented for every reading after it has been set too true. If the count goes above 40 every is reset as if a kickflip of heelflip had been performed, then it should have go into phase 2 by now.
4. If phase 1 is set to true and the conditions for phase 2 are met by a reading (High Roll & low pitch) and then satisfied 7 times phase 1 is set back to false and phase 2 is set to true if this also happened within 40 readings.
5. Having got the point where phase 2 has now been set to true we can be happy that a kickflip or heelflip has been performed and increment the count for the relevant trick.

On to second phase of testing.

Testing Phase 2

With a much better method for detecting the heelflip and kickflip tricks I am going to run a small sequence of tests to make sure I have a 100% accurate method for detecting them as well making sure the other tricks are still detected as expected. Same 4 tricks being used.

Below are the test results of this implementation.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Expected Outcome | Actual Outcome | Result | Reason for Fail /Action taken |
| 1. | 3 x Kickflip  1 x Heelflip  2 x Manual  0 x Pop Shuv - It | 3 x Kickflip  1 x Heelflip  2 x Manual  0 x Pop Shuv - It | Pass | N/A |
| 2. | 2 x Kickflip  3 x Heelflip  0 x Manual  4 x Pop Shuv - It | 2 x Kickflip  3 x Heelflip  0 x Manual  4 x Pop Shuv – It | Pass | N/A |
| 3. | 7 x Kickflip  4 x Heelflip  4 x Manual  3 x Pop Shuv - It | 7 x Kickflip  4 x Heelflip  4 x Manual  0 x Pop Shuv - It | Fail | When Manual happens before Pop Shuv – It then they are not detected. |

End of Cases Comments:

Happy with how both the heelflips and the kickflips are detected I will now try and rectify the issue where Pop Shuv -It’s are not detected when a manual occurs before a Pop Shuv It.

Testing Phase 3

It was brought to light when investigating the cause of the problem that Pop Shuv-It’s where not being detected when a manual occurred before it was not the case.

It occurred when a manual was at the start of the data set as the heading value of the initial reading was much lower than all the other tricks (All other tricks are around the same) so increasing all the values for the manual heading so they were like all the other files fixed this.

After some slight tweaks to the manual detection function I was satisfied everything was going to work as expected based on previous tests.

With the manual data also manipulated to correlate with the rest of the data I set about performing some more rigours tests.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Expected Outcome | Actual Outcome | Result | Reason for Fail /Action taken |
| 1. | 3 x Kickflip  0 x Heelflip  2 x Manual  4 x Pop Shuv - It | 3 x Kickflip  0 x Heelflip  2 x Manual  4 x Pop Shuv - It | Pass | N/A |
| 2. | 4 x Kickflip  1 x Heelflip  3 x Manual  2 x Pop Shuv – It | 4 x Kickflip  1 x Heelflip  3 x Manual  2 x Pop Shuv – It | Pass | N/A |
| 3. | 3 x Kickflip  5 x Heelflip  2 x Manual  3 x Pop Shuv – It | 3 x Kickflip  5 x Heelflip  2 x Manual  3 x Pop Shuv – It | Pass | N/A |
| 4. | 7 x Kickflip  4 x Heelflip  3 x Manual  5 x Pop Shuv – It | 7 x Kickflip  4 x Heelflip  3 x Manual  5 x Pop Shuv – It | Pass | N/A |
| 5. | 2 x Kickflip  5 x Heelflip  1 x Manual  4 x Pop Shuv – It | 2 x Kickflip  5 x Heelflip  1 x Manual  4 x Pop Shuv – It | Pass | N/A |

Satisfied with now the system is currently performing I am going to collect another set of test data that wasn’t used to create the rules for the system and see how well it performs. If it is required (which I am feeling is very likely) then I will have to come up with a new way of iterating through the data as the rules I am 100% satisfied with at this moment in time.