

# Test Report: Double Pendulum

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# 1 Revision History

Date	Version	Notes
Dec.17	1.0	Final Draft

## 2 Symbols, Abbreviations and Acronyms

symbol	description
T	Test

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This document introduces the result of the system VnV test.

### 3 Functional Requirements Evaluation

All the functional requirements have been met.

### 4 Nonfunctional Requirements Evaluation

Generally, all the nonfunctional requirements have been met.

#### 4.1 Usability

The system is easy to use, anyone with general computer technology is able to use it. Tested with 5 users, all of them get the output with their own input data.

#### 4.2 Correctness and Verifiability

The outputs generated by Double Pendulum were compared to the  $\theta_1$  and  $\theta_2$  graph from ? with the same input data, and the graphs match well.

#### 4.3 Maintainability

The source code was examined by the developer, and ensured that each module only performs one function, makes it easy to maintain.

#### 4.4 Portability

The unit testing has been performed on Mac OS X 10.11 and Windows 10. All functions works on both systems.

### 5 Comparison to Existing Implementation

Compared to the existing implementation<https://www.myphysicslab.com/pendulum/double-pendulum-en.html>, Double Pendulum generated the list of  $\theta_1(t)$  and  $\theta_2(t)$  results, but does not provide animation of the motions,

and does not provide as many graphs as the existing implementation<https://www.myphysicslab.com/pendulum/double-pendulum-en.html>.

## 6 Unit Testing

The Unit testing has been done with Unittest in accordance with Unit VnV.

The detailed test report can be found at <https://github.com/best-zhang-zhi/CAS741Project/blob/master/Double%20Pendulum/docs/VnVReport/UnitVnVReport/UnitVnVReport.pdf>.

## 7 Changes Due to Testing

No change has been made.

## 8 Automated Testing

## 9 Trace to Requirements

## 10 Trace to Modules

## 11 Code Coverage Metrics