**Standard of Writing ThaiDanceXML**

Introduction

Traditional Thai dance is an Intangible form of art, as the dance movement is unique and delicate, making it hard to describe with limited amount of vocabulary. There are not many notation or common method of recordings to illustrate Traditional Thai dance accurately. Labanotation system is one of the viable method toward recording Thai dance. However, Labanotation has its limitation when it comes to recording hand gesture. Labanotation is capable of recording every single body part including the fingers. The limitation is that Thai dance focuses mostly on hand gestures. Recording the hand gestures make the human-readable data hard to keep track. There is a research from a Thai Prof. who developed a Thai Labanotation standard to describe hand gestures such as jeeb, wong etc.. ThaiDanceXML is reference from Thai Laban dance notation in term of recording as human-readable data and, both LabanXML and MovementXML standard for recording as machine-readable data. ThaiDanceXML is a standard developed solely to describe traditional Thai dance as both human-readable and machine-readable data. ThaiDanceXML is a machine-readable data, that parses into C# syntax. The C# file is used to run and display the dance animation using Unity 3D program.

Before studying the standard of writing a ThaiDanceXML, do note that the standard is case sensitive.

Definition of Terms

**Notator** is the choreographer who create the dance scores.

**Semantics** is the symbol of the dance notation, the element and attribute use in XML file.

**Visual Code/Visual Studio** is an open source IDE develop by Microsoft, used to write XML file.

Assumptions

Thai Laban Dance Notation is a fixed standard dance notation for traditional Thai dance.

ThaiDanceXML file is used in the Unity 3D software “ThaiDanceXML Loader” developed by the researcher of this paper.

ThaiDanceXML will continue to be the standard form of machine-readable data.

ThaiDanceXML Loader is improved however the feature of the program is not changed.

The Importance of the Study

To preserve the illustration of Thai dance without involving professional Thai dance.

To allow choreographer to illustrate Thai dance without using motion capture system.

To allow motion and choreographer analysis. Visual representation for choreographer to design new traditional Thai dance routine.

Standard

Thai Dance Laban Notation

Notation Score

Direction

Symbol (Thai Symbol) Jeeb Wong

Root

The root Element of the XML usually represents the title of the data that is being stored. The data stored are the Human-Readable Thai Dance Laban notation. Therefore, the name of the root element is <ThaiDance>. **Capital letter** for the first character of word represents name of Element. **Small letter** for the first character of word represents name of attribute and value in an element.

*Example:*

<ThaiDance>

<Attribute/>

</ThaiDance>

Attribute

Thai Dance Laban notation contain many symbols that represent *body part, direction, level of movement, space measurement, folds and rotation of the dance movement*, categorise all these as attributes. Thus, <Attribute> is in the element <ThaiDance>.

*Example:*

<ThaiDance>

<Attribute>

</Attribute>

</ThaiDance>

Measure

Element <Attribute> contain the Element <Measure> which is used to define *the number of the dance measure, the number of beat in a dance measure and the speed of the dance in Beats per minute(Bpm)*. The Element <Measure> consist of three attributes, measure number, beat, and Bpm.

*Example:*

<ThaiDance>

<Attribute>

<Measure num= “1” beat= “4” bpm= “120”>

</Measure>

</Attribute>

</ThaiDance>

Body

The Element <Body> is stored in the Element <Measure> and it consists of 3 attributes and 9 elements. The 3 attributes are body part, start and end. Start represents when the move should begin within the measure. End represents when it will end in the measure. The end float must never exceed the beat in a measure.

*Example of 3 attributes:*

<ThaiDance>

<Attribute>

<Measure num= “1” beat= “4” bpm= “120”>

<Body part= “left\_arm” start= “0” end= “4”>

</Body>

</Measure>

</Attribute>

</ThaiDance>

*Attribute of 19 human body parts with Labanotation symbol*

|  |  |
| --- | --- |
| **Body part** | **Symbols** |
| left\_support |  |
| right\_support |  |
| left\_leg / right\_leg |  |
| left \_foot / right\_foot |  |
|  |  |
| left\_arm |  |
| right\_arm |  |
| left\_hand |  |
| right\_hand |  |
| Head |  |
| left\_chest |  |
| right\_chest |  |
| left\_waist |  |
| right\_waist |  |
| left\_hip |  |
| right\_hip |  |
| Left\_torso |  |
| right\_torso |  |

*Example of 9 elements:*

<Body>

<Level/>

<Direction/>

<Hold/>

<Space/>

<Fold/>

<Contact/>

<Tap/>

<Turn/>

<Gesture/>

</Body>

Level

The Element <Level> indicates the height of the dance movement on the specific body part such as high, middle and low.

Example:

<Body>

<Level> high </Level>

<Body>

3 values according to Labanotation symbol

|  |  |
| --- | --- |
| **Level** | **Symbol** |
| high |  |
| middle | http://user.uni-frankfurt.de/~griesbec/LABANP4.GIF |
| low | http://user.uni-frankfurt.de/~griesbec/LABANP4.GIF |

## Direction

The Element <Direction> dictates the orientation of the dance movement on the specific body part.

Example:

<Body>

<Direction> forward </Direction>

</Body>

Directions according to Labanotation symbol

|  |  |
| --- | --- |
| **Direction** | **Symbol** |
| forward | http://user.uni-frankfurt.de/~griesbec/LABANP4.GIF |
| forward\_left | http://user.uni-frankfurt.de/~griesbec/LABANP4.GIF |
| forward\_right |  |
| backward | http://user.uni-frankfurt.de/~griesbec/LABANP4.GIF |
| backward\_left | http://user.uni-frankfurt.de/~griesbec/LABANP4.GIF |
| backward\_right | http://user.uni-frankfurt.de/~griesbec/LABANP4.GIF |
| left | http://user.uni-frankfurt.de/~griesbec/LABANP4.GIF |
| right | http://user.uni-frankfurt.de/~griesbec/LABANP4.GIF |
| place | http://user.uni-frankfurt.de/~griesbec/LABANP4.GIF |

Hold

Element <Hold> is represented as Boolean (true or false). If hold exist in the Labanotation, indicate with true. If Hold symbol is not written in the notion score, the Element <Hold> is not needed.

Example:

<Body>

<Hold> true </Hold>

</Body>

Space

Element <Space> represents the space measurement that the body need to move. <Space> can be Narrow or Wide and it consists of an attribute called “extent” that describe the extent of the narrow or wide movement. Applies to movement of support as of now.

Example:

<Body>

<Space extent= “1”> narrow </Space>

</Body>

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Space** | **1** | **2** | **3** | **4** | **5** | **6** |
| Narrow |  |  |  |  |  |  |
| Wide |  |  |  |  |  |  |

Fold

Element <Fold> represents the degree of twist of a specific body part. The Attribute degree in the Element is used to describe the intensity of the twist. \*Folding is implemented, unfolding is not.

Example:

<Body>

<Fold degree= “3”> folding </Fold>

</Body>

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Fold** | **1** | **2** | **3** | **4** | **5** | **6** |
| folding |  |  |  |  |  |  |
| unfolding |  |  |  |  |  |  |

Contact & Tap

<Contact> and <Tap> is mainly used to describe the position of the feet. <Contact> represents the part of the foot that is touching the floor whereas <Tap> dictates a quick and brief contact to the floor. Although both Element represents different aspect of the dance, both Element shares the same data value. Not Implemented in Unity

Example:

<Body>

<Contact> full\_foot </Contact>

</Body>

<Body>

<Tap> pad\_of\_toe </Tap>

</Body>

|  |  |
| --- | --- |
| **Part of the foot** | **Symbol** |
| full\_heel |  |
| half\_heel |  |
| full\_foot |  |
| eighth\_ball |  |
| quarter\_ball |  |
| half\_ball |  |
| full\_ball |  |
| pad\_of\_toe |  |
| full\_toe |  |
| nail\_of\_toe |  |

Note: “The body part must always be the ankle”

Turn

Element <Turn> stores the direction of twist and has the attribute rpin to indicate the stop of the twist.

Example:

<Body>

<Turn rpin= “right\_forward”>right</Turn>

</Body>

|  |  |
| --- | --- |
| **Turn value** | **Symbol** |
| left |  |
| right |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **rpin value** | **Up** | **Middle** | **Down** |
| place |  |  |  |
| forward |  |  |  |
| backward |  |  |  |
| left |  |  |  |
| right |  |  |  |
| left\_forward |  |  |  |
| right\_forward |  |  |  |
| left\_backward |  |  |  |
| right\_backward |  |  |  |

\*Turn is not implemented

Gesture

The Element <Gesture> stores Gestures of Thai Dance such as jeeb and wong.

\*Only jeeb and wong is implemented

Example:

<Body>

<Gesture> jeeb </Gesture>

</Body>

**Degree of Narrow and Wide**

**Capital and Small letter on**

**Capital letter** for the first character of word represents name of Element

**Small letter** for the first character of word represents name of Attribute and Value in an element.