**<Table Tennis Ontology>**

**Project Code**

<Project code assigned by the Project Office>

**Project Advisor**

Ms. Arooba

**Project Manager**

Prof. Fahad Maqbool

**Project Team**

Laiba Amna BSSE51F20S025(**Team Leader**)

Tehreem Arif BSSE51F20R036(Team Member)

Laiba Naveed BSSE51F20R029 (Team Member)

**Submission Date**

04 October 2023

**Abstract:**

Table tennis is an indoor game played on a flat table between two players. An Ontology is a formal representation of concepts, entities, and relationships within a specific domain of knowledge. It is a structured framework that defines the concepts, categories and properties related to this domain and how they are related. The goal of the proposed project is to develop an ontology for the sport of table tennis. So far, there is not a single created ontology on this game. This ontology will serve information related to players, game rules, equipment, techniques, statistics and will allow a deeper understanding of the sport. The scope of this ontology will be on international level. Therefore, the comprehensive knowledge related to different areas of table tennis will be integrated and reused in the form of an ontology. The main goal of this ontology is to provide a platform of information to those who are new to the field. It will help anyone who wants to gain knowledge or information related to this sport.

**Background and justification:**

Table tennis, a popular sport around the world, involves many aspects including rules, equipment, technique and player roles. Ontologies can systematically organize this diverse knowledge. It enables the efficient search and sharing of table tennis information, benefiting players, coaches, fans and researchers. In addition, ontologies are the foundation of the Semantic Web and enhance the understanding and integration of table tennis-related data across various online platforms.

The ontology standardizes table tennis terminology, reducing confusion and ensuring consistent communication within the community. Students, coaches and beginners can benefit from a structured ontology that describes the rules, techniques, strategies and equipment used in table tennis. It enables the integration of data from different sources, increases interoperability and enables comprehensive sports analysis.

Researchers can use the ontology to explore new dimensions of table tennis, including sports science, technology integration, and game analysis. Table tennis-related applications, such as score management applications and coaching tools, can use ontologies to effectively understand and interpret user input to provide a better user experience. The table tennis ontology allows users to perform more complex queries and inference operations to extract meaningful insights and facilitate decision making.

The ontology fosters collaboration within the table tennis community and enables experts to share their knowledge and insights, thereby continuously improving the accuracy and comprehensiveness of the ontology.

**Project Methodology:**

The steps we will take to achieve our goals are as follows:

* Data extraction and transformation
* Data consolidation
* Data set comparison
* Ontology development
* Ontological refinement
* Summarizing Results.
* Protégé tool will be used for implementation. It's an open-source ontology building tool with a variety of plugins to help with ontology development.

**Project Scope:**

Ontology in table tennis is of international importance because table tennis is widely played around the world. It will cover all important concepts related to the sport of table tennis including player skills, equipment, game rules, strategies. Target audience of this project would be ITTP, researches, players of the game,fans and the people who are new to this field. It will provide a structured framework for representing sport-related knowledge. The project focuses on the creation and validation of the ontology itself, ensuring its accuracy and importance to the sport of table tennis.

**References:**

1. Sofia Angeletou, Marta Sabou and Enrica Motta , “A survey of Ontology Learning

Techniques and Applications”, 2007.

2. Nicola Guarino and Christopher A, “The Role of Ontologies in Information Systems”

2009