Ontology Creation for Digitally Expressed Feelings

Literature Review: Conducted in-depth literature reviews in areas relevant to the project, including emotion theories, sentiment analysis, and knowledge graph technologies, contributing to the project's theoretical foundation and informing decision-making processes.

Utilized Existing Ontology: Leveraged the framECO ontology from source as a foundational framework for our project. This provided us with a solid starting point for our ontology design, benefiting from its transversal approach and frame-based structure.

Incorporated Existing Classes and Concepts: Integrated specific classes and concepts from framECO, such as non-trivial emotion situations inspired by the Dictionary of Obscure Sorrows. These additions enriched our ontology, allowing for the representation of complex emotional states and scenarios.

Ontology Expansion:
Expanded upon the existing framECO ontology by introducing new classes and properties tailored to digitally expressed emotions. These additions included classes like Appraisal, Behaviour, Dimension (e.g., Valence, Dominance, Activation), ComplexEmotionCategory, and BasicEmotions (e.g., Anger, Disgust, Fear, Sadness, Joy, Shame), ensuring their relevance and applicability to digitally expressed emotions for a related event or product that the user experienced.

Defined Characteristics and Constraints on Properties:

Each property within the ontology was defined with specific characteristics and constraints to ensure semantic clarity and consistency. For instance, properties like creates, experiences, leadsTo, resultsIn, and triggers were defined with domain and range restrictions to specify the relationship between different entities within the ontology. Additionally, properties like hasCategory and hasDimension were defined with specific constraints to categorize emotions based on predefined categories and dimensions.

Specified Axioms:

Axioms were specified within the ontology to formalize relationships and constraints between classes and properties. These axioms provided logical assertions about the structure and behavior of the ontology, ensuring its coherence and inferential capabilities. For example, axioms were specified to define transitive, reflexive, and symmetric relationships between emotion concepts, contextual factors, and other relevant entities. Additionally, axioms were used to enforce constraints on property values, ensuring consistency and accuracy in representing digitally expressed emotions.
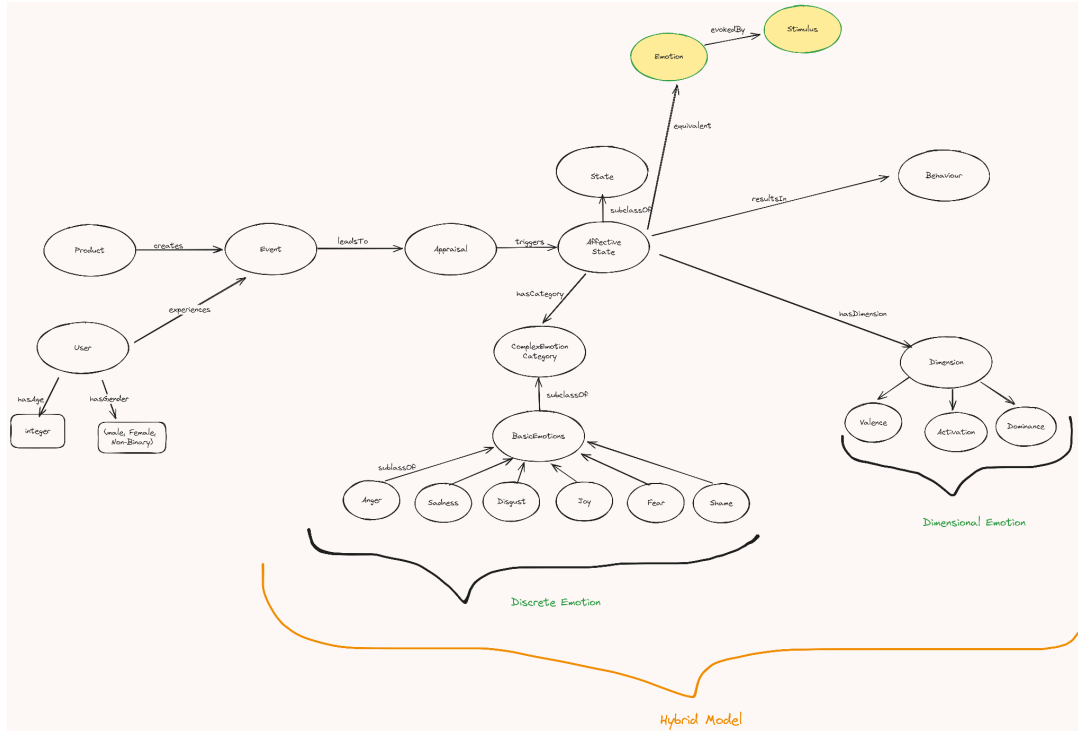
Ontology Formalization: Ensured the formalization of the ontology using Protégé, ensuring semantic interoperability and compatibility with knowledge graph frameworks.

Collaborative Design: Collaborated with your project partner throughout the process to ensure coherence and completeness in the ontology design, dividing tasks effectively and sharing insights gained from the literature review and existing ontology analysis.

Team Member Contribution:
Rohan : Formulated the ontology design in Protege, Created new classes, Defined characteristics and constraints on the properties, Literature Review, specified axioms
Mayank : Explored Existing Ontologies - EmOCA, MFOEM ,EmotionsOnto, framECO to gauge the current existing work done in the domain, Made a diagram of the ontology to be made , created new properties, Literature Review.

Conclusion:
The collaborative efforts of both partners have resulted in the development of a comprehensive ontology for digitally expressed emotions, building upon existing frameworks like framECO. By leveraging transversal approaches and integrating diverse emotional concepts, we aim to contribute to advancements in sentiment analysis, social media mining, and personalized recommendation systems. Moving forward, we are committed to validating and refining our ontology, laying the groundwork for future research and development in this critical area.