UNIVERSITÉ DE LORRAINE

L'INSTITUT DES SCIENCES DU DIGITAL MANAGEMENT COGNITION
ONTOLOGY

Ontology of Video Game

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1 Introduction

The purpose of this project is to create the ontology of video game to identify its fundamental basis, describe its entities and essential links between them.The ontology focuses on modelling events happening inside video games as well as players, their playing behaviour, needs of gamers, developers and researchers.

1.1 Definition of Video Game

A video game is a **software program** which a user can interact with, through a system of **inputs** and **outputs**. It is available through **electronic platforms** (e.g., mobile phones, computers, arcades, etc.) transmitting **feedback** to the users through **sensory stimuli**, primarily **visual stimuli**.
Definitions that does not fit ontology are :

- A video game is a computer game designed mainly for entertainment purposes

- Video games are electronic, interactive games known for their vibrant colors, sound effects, and complex graphics

Because above definitions does not talk about more relevant features and classes related to the video games.Our ontology includes classes beyond these topics.

1.2 List of Concepts

- Game

- Video

- User

- Electronic platform / Hardware

- Sensory stimuli

    - Output
    - Visual stimuli

- Interface

    - Input
    - Controller
    - UI

- Software program

- Genre

    - Themes

- Stories (in-game lore)

- Characters

- Fictive characters

- Developer / Editor

- Price (plus arcades' system)

- Date of publication

- Popularity

- In-game locations

- Gameplay features

- Storage size

- Memory used

- Graphic types

    - 3D
    - 2D
    - 2.5D
    - isometric 'true' 3d textual

- Accessibility features

- Novelty / novel elements

- User's ratings

- Critics ratings

- Languages

1.3   List of Concepts not appearing directly

- Classified by publishing criteria

    - Original
    - Sequel
    - Add-on
    - Downloadable Content

- Classified by Spread type

    - Physical copy
    - Digital copy
    - Subscription
    - Free to play
    - Trial
    - Shareware

2 Competency questions

By researchers interested in the history of video games:

- What are the most common genres played by players with a certain character class in a game?

- Which countries are the largest game market by revenues?

- How would gaming would look like 20 years from now?

- What are the the psychological effects of video games?

- What are the government regulations?

By developers of video games to understand trends and innovation in the industry:

- Popularity of the game in regards to the publication date?

- Which game themes are most likeable?

- What type of UI are most popular?

- What are the notable/features available in the game?

- What is the difficulty level the player uses in certain game genres?

3 Skeleton Ontology and Protege (Musen, 2015; Tudorache et al., 2013)

Figure 1 shows the ontology of video game having relationship between each classes.The picture is not very clear.Hence, adding in the folder.IRI link in the project was broken and we were able to see several links of IRI on our classes.

4 Conclusion

After analysing our ontology, we found that Video games might not have touch Stimulus necessarily and can be used to play the games. So, we think it needs to be more generic in order to fit our defination.Relations about goverment regulations of each countries are not included in the ontology.
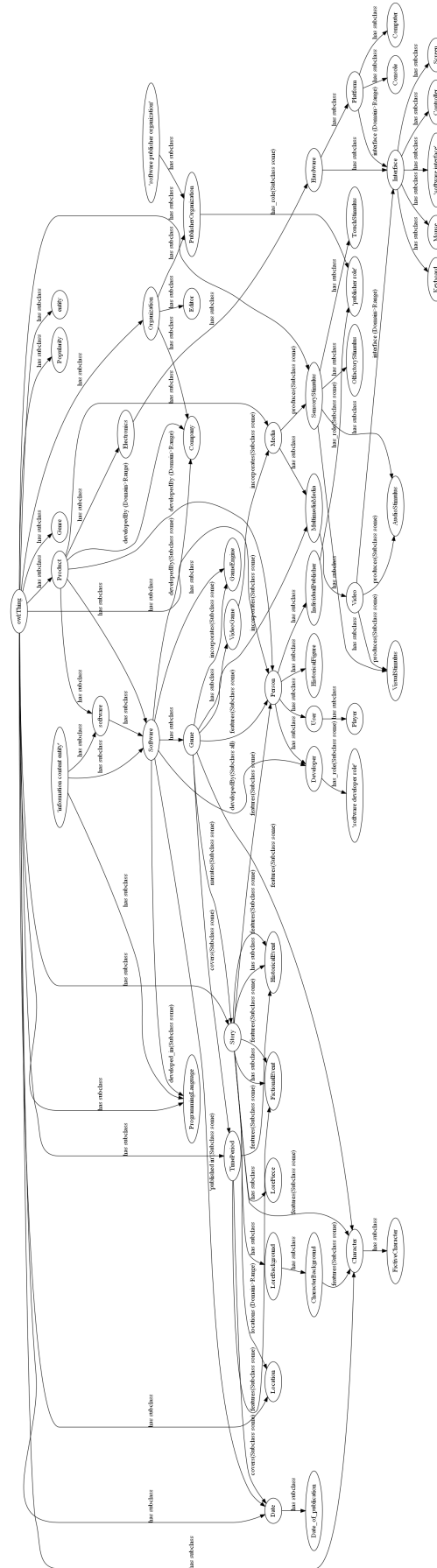
FIGURE 1: Ontology of Video Game

References

Musen, Mark A. (June 2015). "The Protégé Project: A Look Back and a Look Forward". In: *AI matters* 1.4, pp. 4–12. ISSN: 2372-3483. DOI: 10.1145/2757001.2757003. pmid: 27239556. URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4883684/ (visited on 02/23/2022).

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