ONTOLOGÍA
Proyecto eSports

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1.
Introducción

¿Por qué eSports?

Introducción

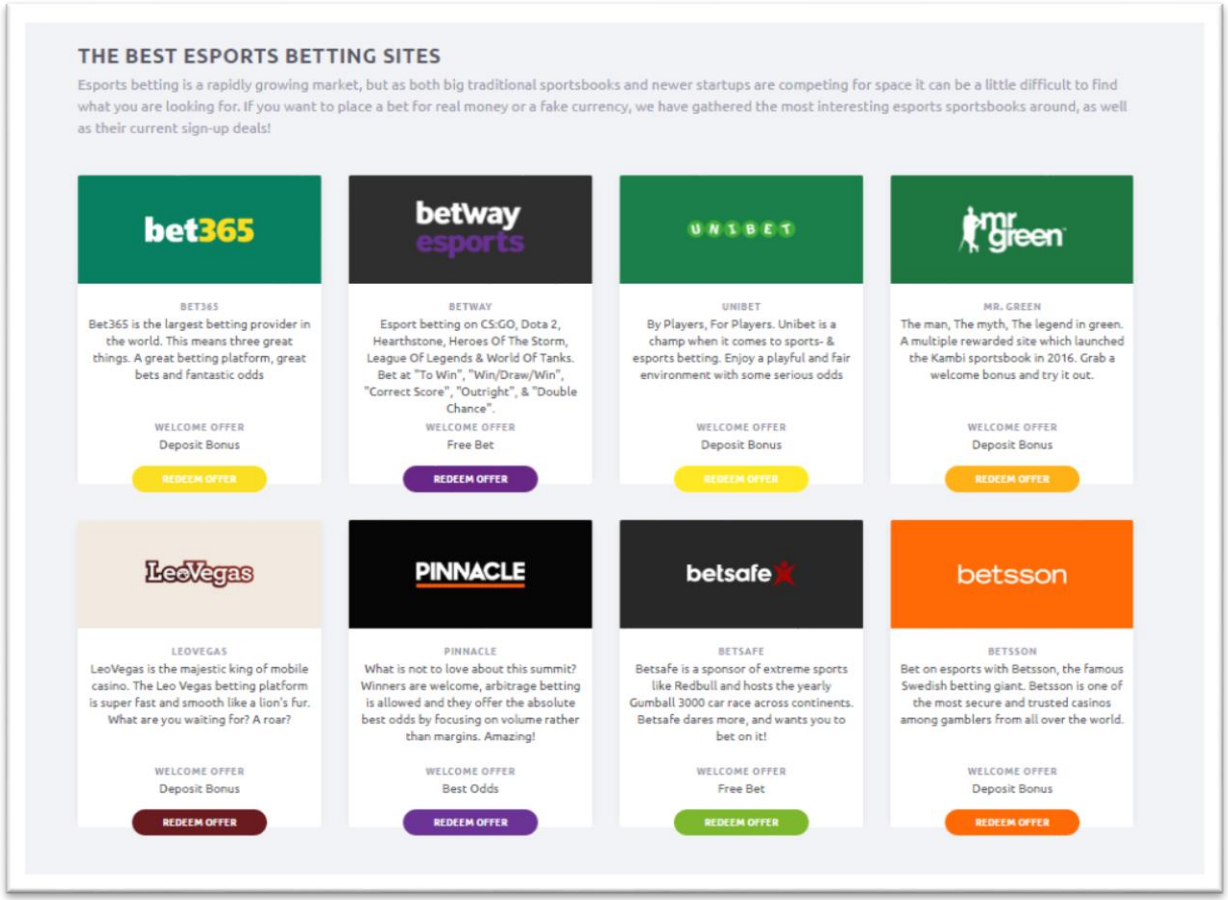
LOS ESPORTS INGRESARON MÁS DE 892 MILLONES DE DÓLARES EN 2016

Daniel Zúñiga 27 diciembre, 2016 eSports, Noticias, Online, Videojuegos

SuperData afirma en su último inf
más de **892 millones de dólares**.

Gracias a la publicidad, promocion
892.8 millones de dólares en 201
mientras que **Europa** logró **269 mi**

Introducción



2. Especificación de requisitos

Grupos de Competency Questions

Jugadores

Cómo se llaman, qué tal juegan, tienen buen KDA, qué edad tienen, con qué equipo, a qué juego, con qué personajes…

Equipos

Ganan mucho, qué ganan, quién los entrena, qué jugadores han tenido, a qué juegan…

Juego

Qué juegos hay, qué elementos tiene un juego de eSport, qué ocurrencias son importantes en una partida, qué personajes hay…

Partida

Cuánto dura, quiénes juegan, quién gana, en qué mapa se juega, quién logró tal hito…

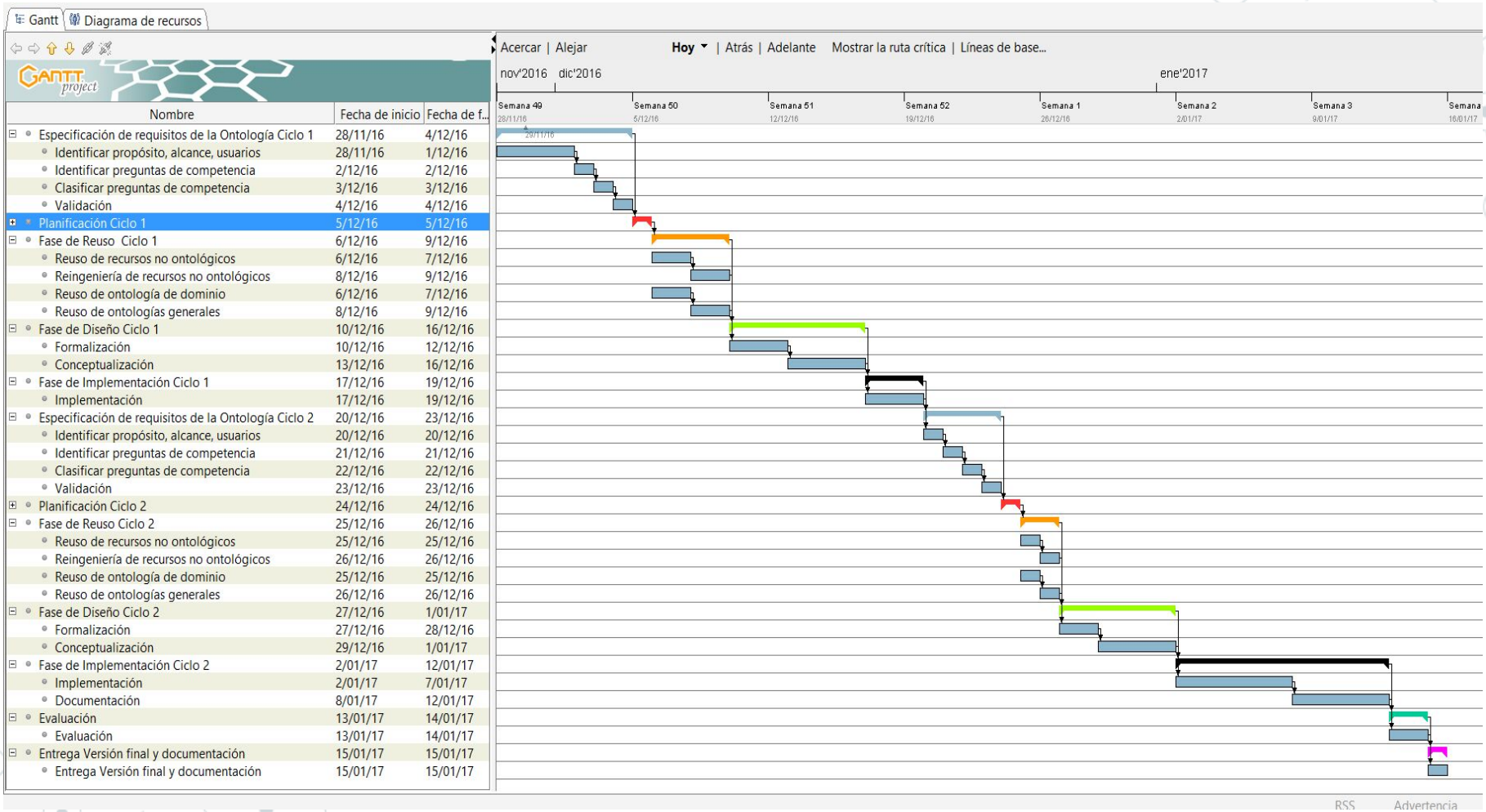
Eventos

Cuáles son los eventos más importantes, cómo están estructurados, cuántas rondas tienen…

3.
Planificación

¿Cuándo?

Diagrama de Gantt

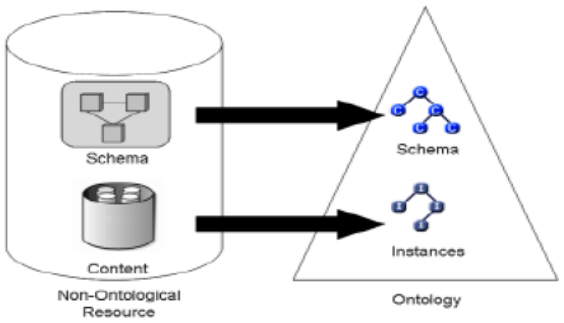


3.
Reuso

Recursos ontológicos y no ontológicos

Recursos no ontológicos

ABox

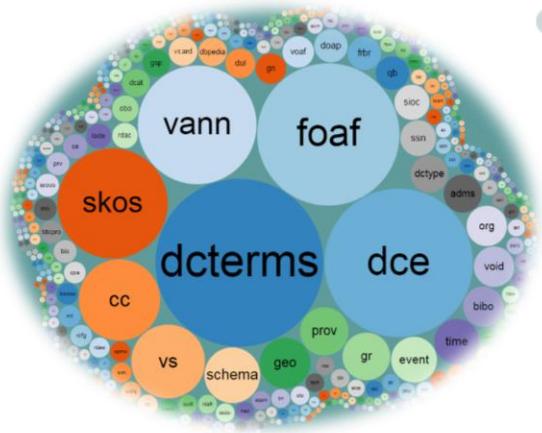


Recursos ontológicos

The Video Game Ontology

Release 19 December 2014

This version:
http://vocab.linkeddata.es/vgo/
Latest version:
http://purl.org/net/VideoGameOntology
Revision
1.0



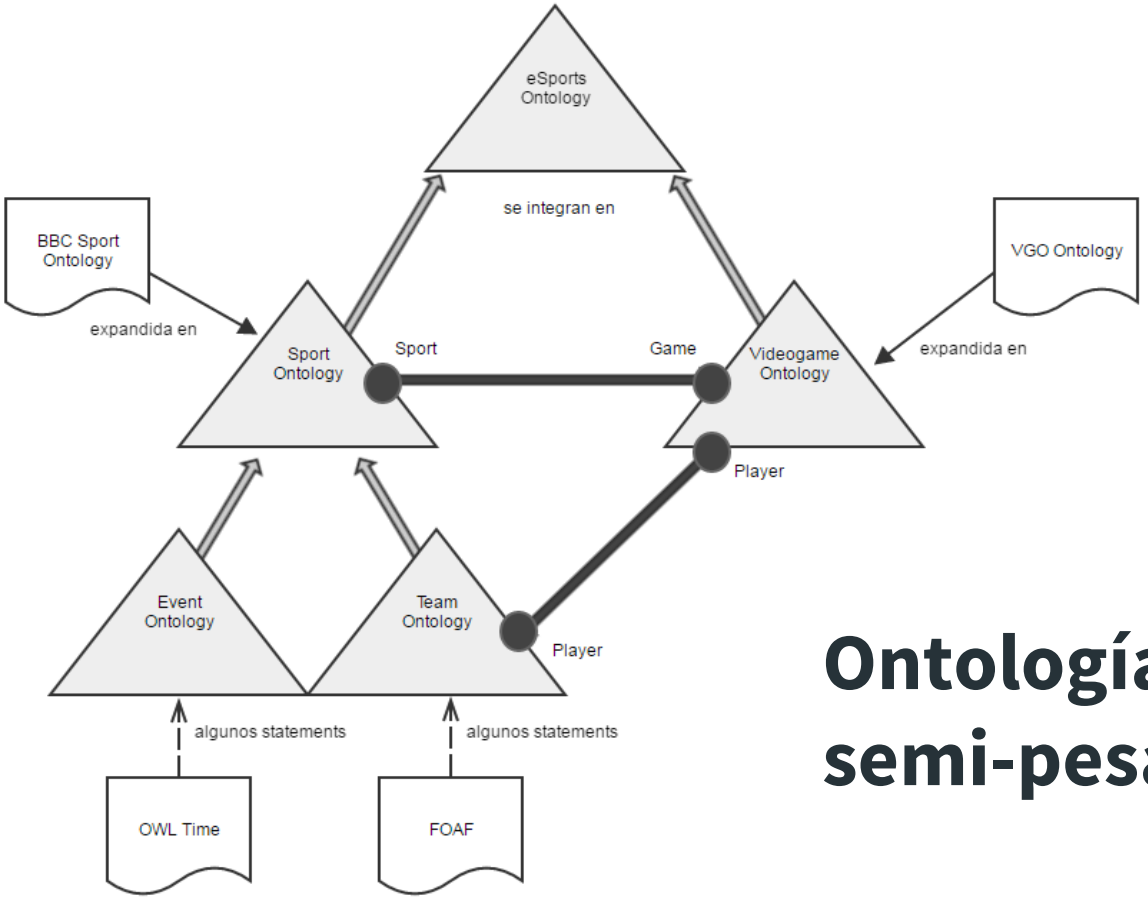
BBC Sign in News

ONTOLOGIES

Sport Ontology

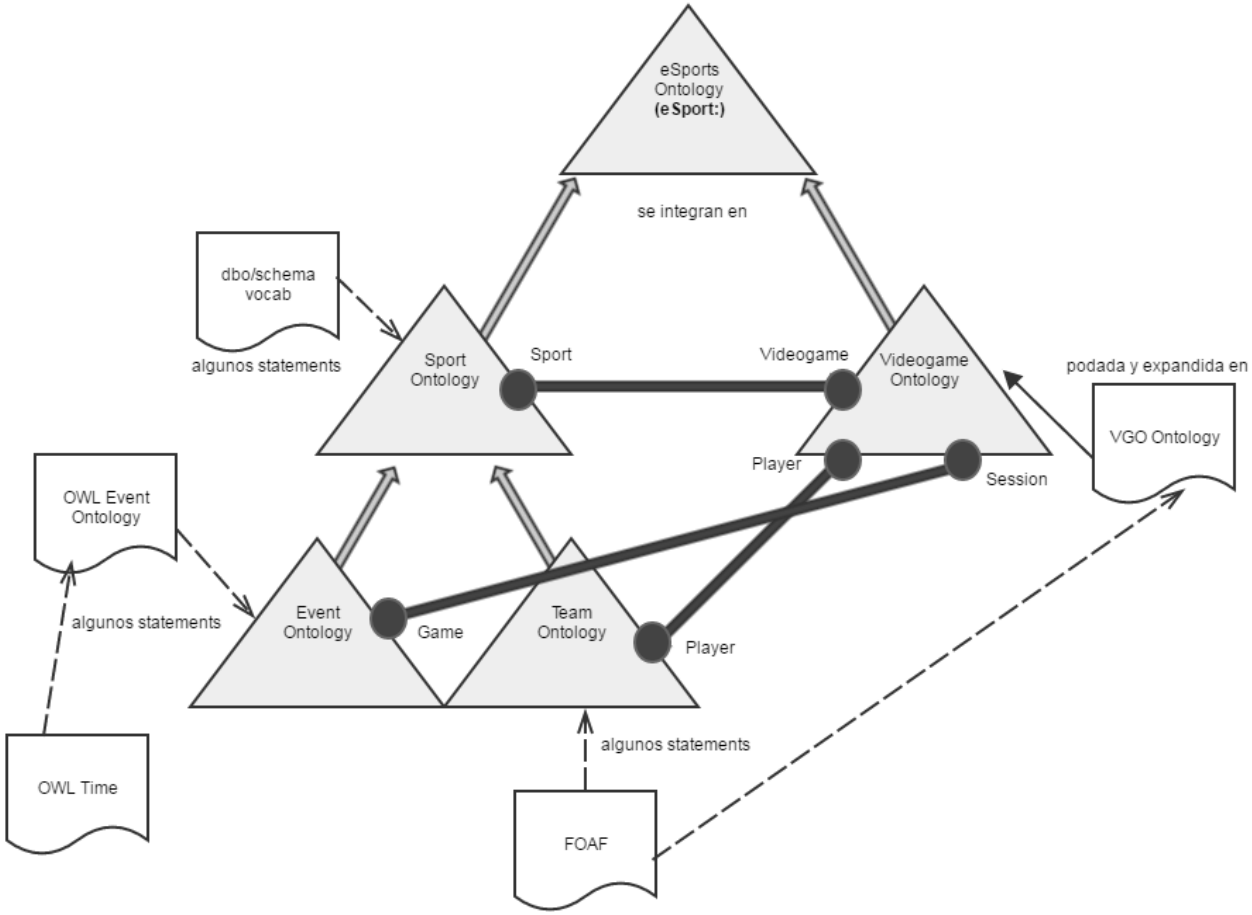
3.
Diseño

Primera iteración

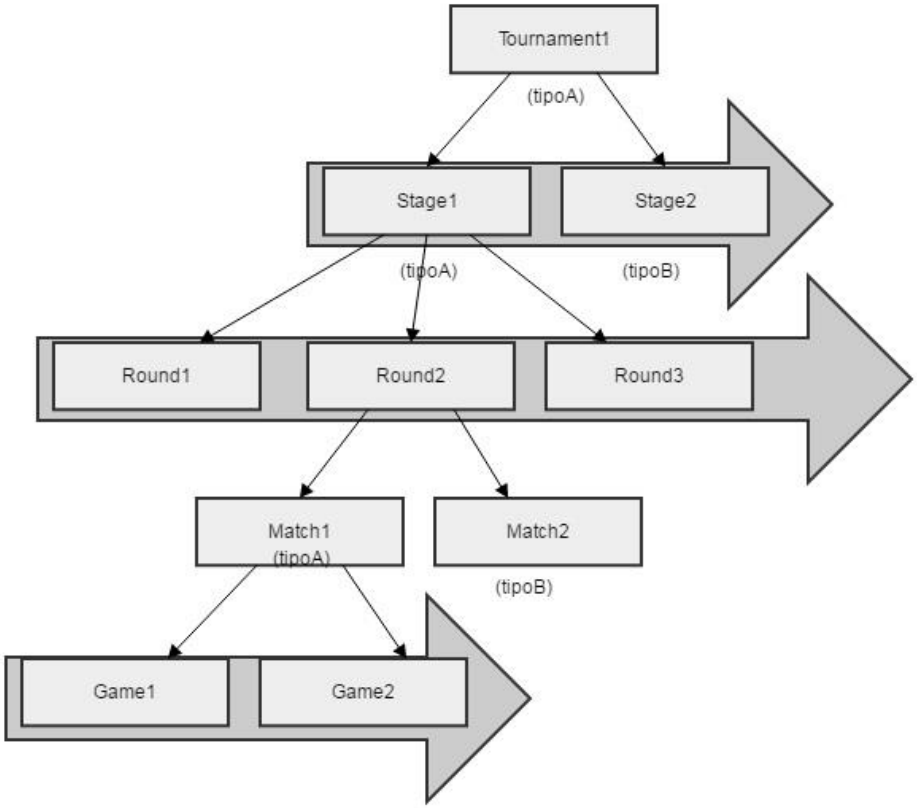


Ontología semi-pesada

Segunda iteración



Decisiones de diseño



Tratamiento de eventos

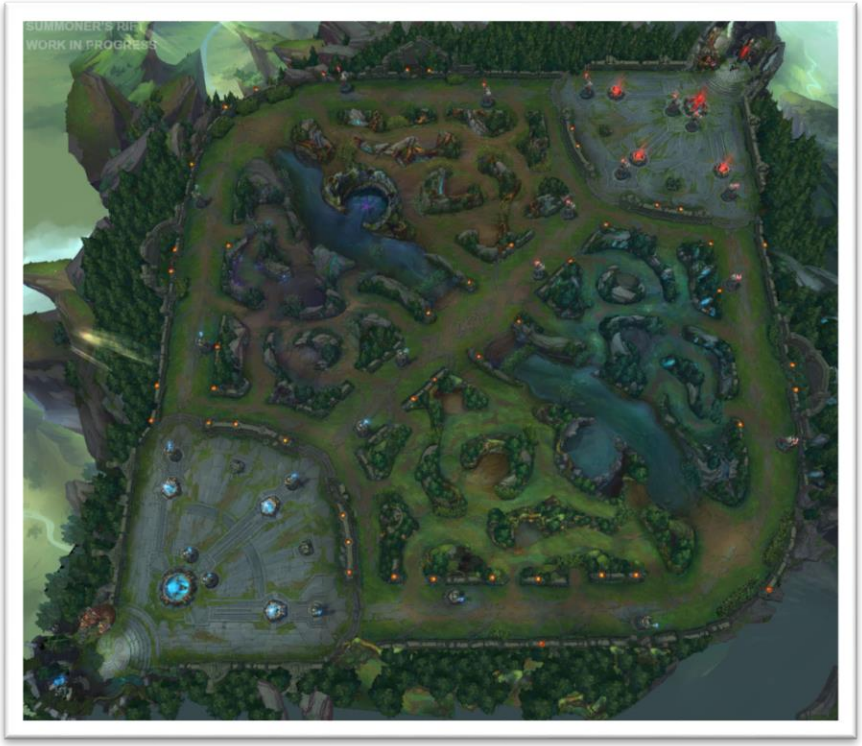
Se ha usado un modelo iterativo para llevar el orden de las rondas, las fases y las partidas dentro de un torneo.

Decisiones de diseño

ChampionRole y PlayerRole

Se las trata como dos clases distintas, ya que no son lo mismo. ChampionRole es cómo juega el campeón y PlayerRole es dónde.

Implementamos los roles como **instancias.**



Decisiones de diseño

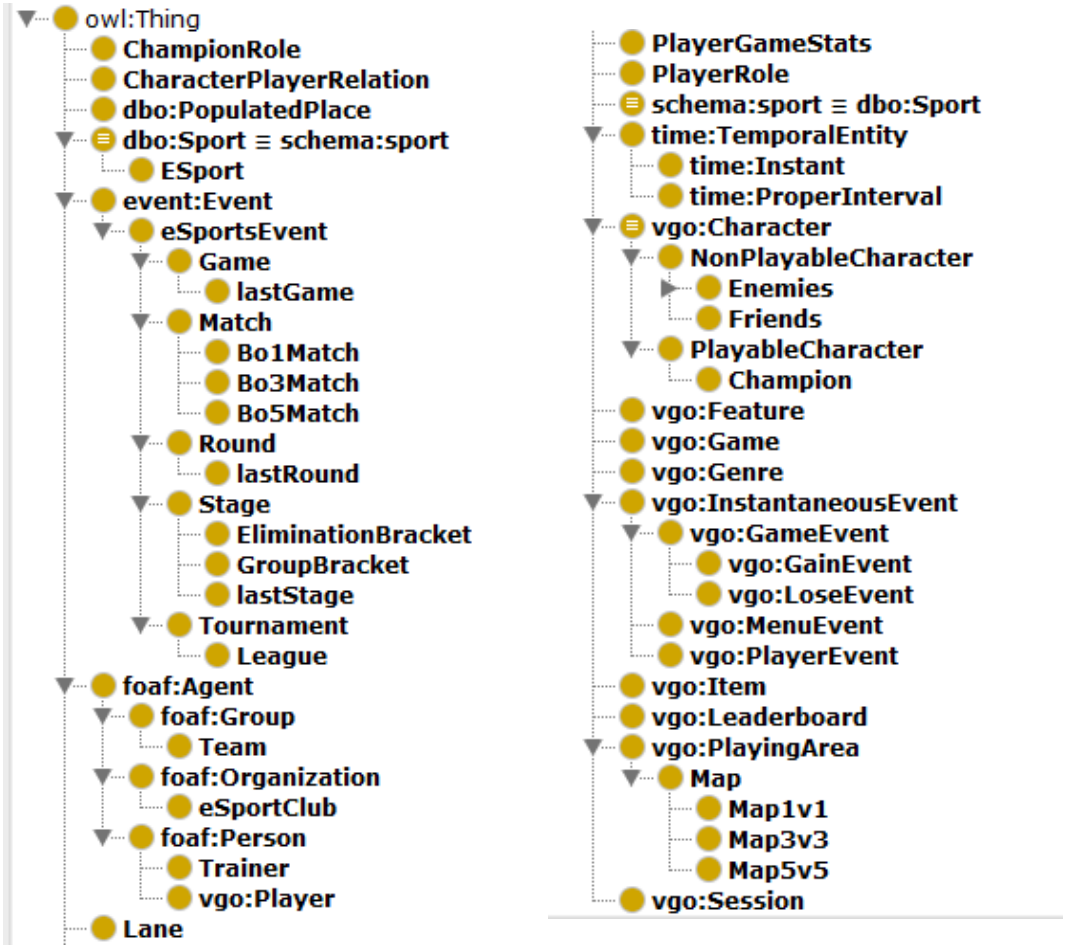
Relaciones n-arias

Un jugador X juega un personaje Y en una sesion Z

Relación intermedia: CharacterPlayerRelation

4.
Implementación

Protegée Classes



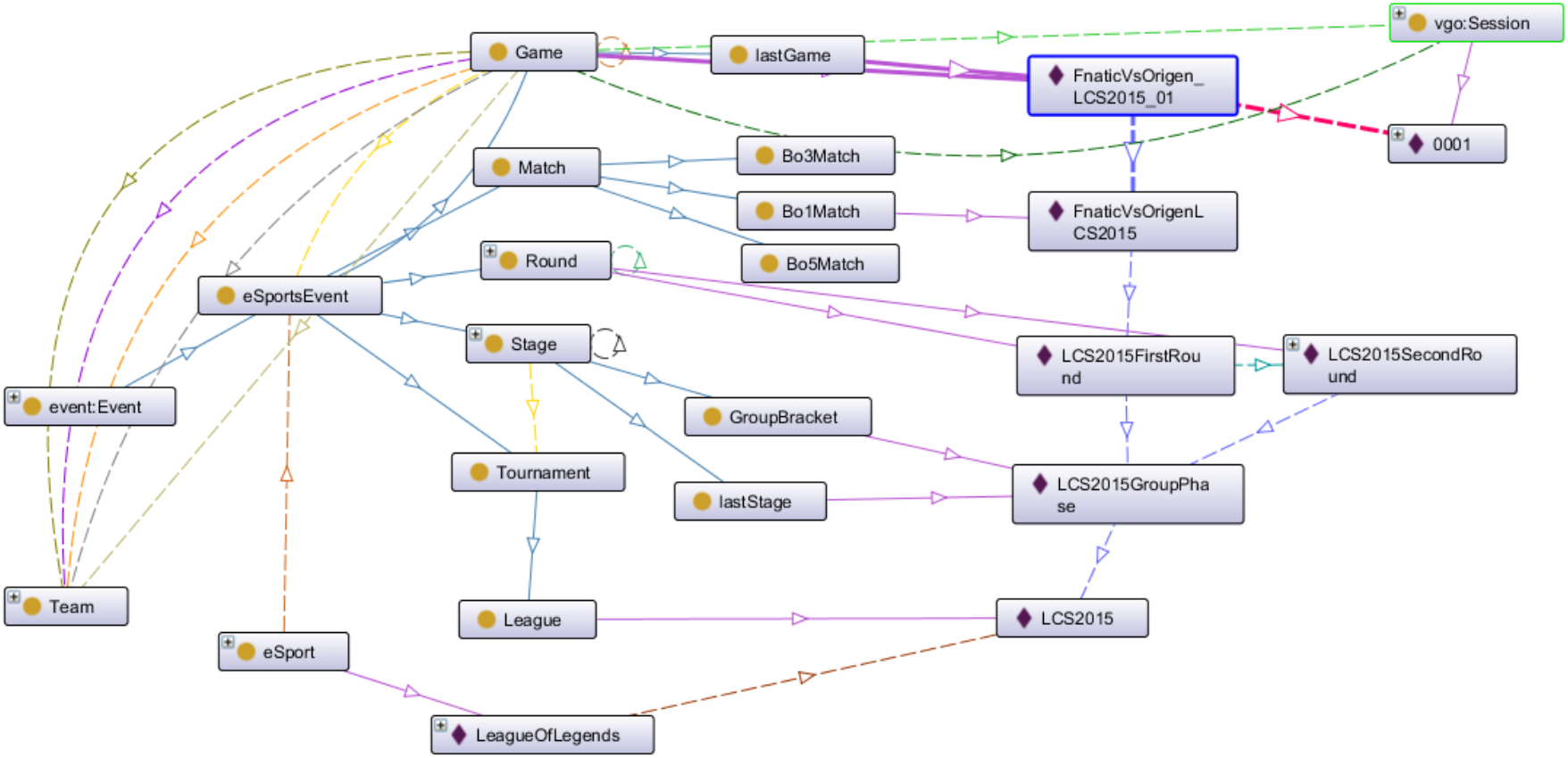
Protegée Properties

Data property hierarchy:

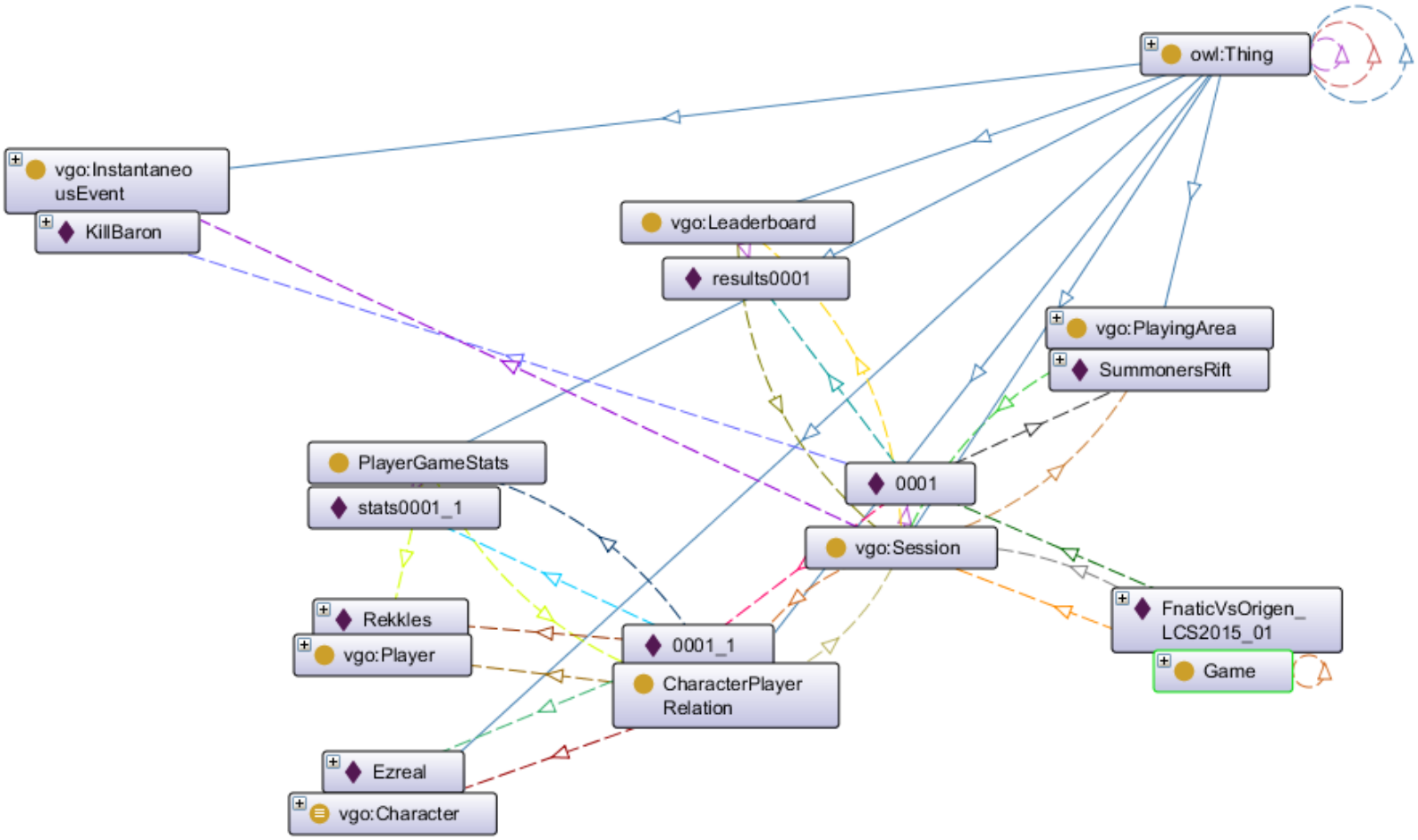
- owl:topDataProperty
  - **foaf:age**
  - **foaf:birthday**
  - **foaf:name**
  - **hasGameKDA**
  - **kdaRatio**
  - **time:inXSDDateTime**
  - vgo:endTime
  - vgo:eventName
  - **vgo:eventTime**
  - **vgo:releaseDate**
  - **vgo:startTime**
  - vgo:username

- owl:topObjectProperty
  - **achievedByTeam**
  - **areGameStatsOfPlayer**
  - dcterms:creator
  - **dcterms:isPartOf**
  - **eventAchieved**
  - **event:subEvent**
  - **foaf:knows**
  - **hasAssociatedPlayerRole**
  - **hasAvailablePlayerRole**
  - **hasChampionRole**
  - **hasEvent**
  - **hasGameStats**
  - **hasInstantaneousEvent**
  - **hasLane**
  - **hasMap**
  - **hasNext**
  - **hasPlayerRole**
  - **hasSessionLeaderboard**
  - **hasSessionPlayingArea**
  - **involvesCharacter**
  - **involvesCharacterPlayerRelation**
  - **involvesPlayer**
  - **involvesTeam**
  - **isAssociatedTo**
  - **isChampionRoleOf**
  - **isCharacterIn**
  - **isCharacterPlayerRelationIn**
  - **isESport**
  - **isFormedBy**
  - **isFromESport**
  - **isLeaderboardInSession**
  - **isMapOf**
  - **isPlayerIn**
  - **isPlayerRoleIn**
  - **isPlayerRoleInLane**
  - **isPlayerRoleOfPlayer**
  - **isPlayingAreaInSession**
  - **isTeamHomeIn**
  - **isTeamIn**
  - **isTeamVisitorIn**
  - **megaEvent**
  - **playingGame**
  - **time:hasBeginning**
  - **time:hasEnd**
  - vgo:hasCharacter
  - vgo:hasFeature
  - vgo:hasGameGenre
  - vgo:hasItem
  - vgo:hasLeaderboard
  - vgo:hasPlayingArea
  - vgo:involvesCharacter
  - vgo:involvesPlayer
  - vgo:isCharacterInGame
  - vgo:isCharacterInSession
  - vgo:isEventAssociatedToPlayer
  - vgo:isEventInGame
  - **vgo:isEventInSession**
  - vgo:isEventRelatedToItem
  - vgo:isEventTriggeredByCharacter
  - vgo:isItemInGame
  - vgo:isLeaderboardInGame
  - vgo:isPlayerInSession
  - vgo:isSessionInGame
  - vgo:livesIn
  - vgo:ownsCharacter
  - vgo:ownsItem
  - vgo:playsGame
  - **wasBornIn**

Ejemplo: un partido



Ejemplo: un partido



5.
Evaluación

Evaluación: con OOPs!

También se evaluó la ontología con ***razonadores***, que no devolvieron inconsistencias.

Evaluation results

It is obvious that not all the pitfalls are equally important; their impact in the ontology will depend on multiple factors. For this reason, each pitfall has an importance level attached indicating how important it is. We have identified three levels:

- **Critical** : It is crucial to correct the pitfall. Otherwise, it could affect the ontology consistency, reasoning, applicability, etc.
- **Important** : Though not critical for ontology function, it is important to correct this type of pitfall.
- **Minor** : It is not really a problem, but by correcting it we will make the ontology nicer.

[Expand All] | [Collapse All]

Results for P04: Creating unconnected ontology elements.	5 cases | Minor
Results for P07: Merging different concepts in the same class.	1 case | Minor
Results for P08: Missing annotations.	cases | Minor
Results for P13: Inverse relationships not explicitly declared.	cases | Minor
Results for P20: Misusing ontology annotations.	7 cases | Minor
Results for P22: Using different naming conventions in the ontology.	ontology* | Minor
Results for P30: Equivalent classes not explicitly declared.	1 case | Important
Results for P32: Several classes with the same label.	4 cases | Minor

Evaluación: con OOPs!

Results for P20: Misusing ontology annotations. — **7 cases | Minor**

The contents of some annotation properties are swapped or misused. This pitfall might affect annotation properties related to natural language information (for example, annotations for naming such as rdfs:label or for providing descriptions such as rdfs:comment). Other types of annotation could also be affected as temporal, versioning information, among others.

• This pitfall appears in the following elements:
› http://purl.org/net/VideoGameOntology#involvesCharacter
› http://purl.org/net/VideoGameOntology#hasCharacter
› http://purl.org/net/VideoGameOntology#hasAchievement
› http://purl.org/net/VideoGameOntology#isLeaderboardInGame
› http://purl.org/net/VideoGameOntology#hasItem
› http://purl.org/net/VideoGameOntology#involvesAchievement
› http://purl.org/net/VideoGameOntology#involvesPlayer

Results for P30: Equivalent classes not explicitly declared. — **1 case | Important**

This pitfall consists in missing the definition of equivalent classes (owl:equivalentClass) in case of duplicated concepts. When an ontology reuses terms from other ontologies, classes that have the same meaning should be defined as equivalent in order to benefit the interoperability between both ontologies.

• The following classes might be equivalent:
› http://www.theesportslov.org/eSports-ontology#Champion, http://www.theesportslov.org/eSports-ontology#Friends

6.
Linked Data

Obtención de datos con API

http://api.pandascore.co/all/v1/tournaments/{tournament_id}


```
{"id":1,"name":"2015 NA LCS Summer","name_public":"Summer
Split","season":2015,"start":null,"description":null,"total_prizepool":null},{"id":2,"name":
"2015 EU LCS Summer","name_public":"Summer
Split","season":2015,"start":null,"description":null,"total_prizepool":null} (…)
```


https://api.pandascore.co/all/v1/tournaments/2?token=WBcq4KCBxPqbeGmJ8CrWXam3lAHkoqX8PZmYuL7osCHDlo0LPTc


```
{"id":2,"name":"2015 EU LCS Summer","name_public":"Summer
Split","season":2015,"start":null,"description":null,"total_prizepool":null}
```


https://api.pandascore.co/lol/v1/matchlist?tournament=2&token=WBcq4KCBxPqbeGmJ8CrWXam3lAHkoqX8PZmYuL7osCHDlo0LPTc


```
{"id":123,"tournament_id":2,"game":"League of Legends","name":"Origen vs
Fnatic","start":"Thu, 18 Jun 2015 20:00:00
+0200","winner_id":11,"teams":[{"id":11,"name":"Fnatic"},{"id":20,"name":"Origen"}],"match_l
ink":"http://api.pandascore.co/lol/v1/matches/123","games":[{"id":123,"length":2475,"winner_
id":11}]},{"id":171,"tournament_id":2,"game":"League of Legends","name":"SK Gaming vs
Fnatic","start":"Thu, 23 Jul 2015 18:00:00
+0200","winner_id":11,"teams":[{"id":14,"name":"SK
Gaming"},{"id":11,"name":"Fnatic"}],"match_link":"http://api.pandascore.co/lol/v1/matches/17
1","games":[{"id":171,"length":1792,"winner_id":11}]} (..)
```


https://api.pandascore.co/lol/v1/matches/123?token=WBcq4KCBxPqbeGmJ8CrWXam3lAHkoqX8PZmYuL7osCHDlo0LPTc


```
{"id":123,"tournament_id":2,"game":"League of Legends","name":"Origen vs
Fnatic","start":"2015-06-18T20:00:00.000+02:00",
"results":{"11":1,"20":0},
"teams":[{"id":11,"name":"Fnatic","acronym":"FNC",
"roster":[{"id":98,"name":"YellOwStaR"},{"id":79,"name":"Huni"},{"id":89,"name":"Febiven"},{
"id":84,"name":"Reignover"},{"id":94,"name":"Rekkles"}]},{"id":20,"name":"Origen","acronym":
"OG","roster":[{"id":93,"name":"Mithy"},{"id":82,"name":"xPeke"},{"id":77,"name":"Amazing"},
{"id":87,"name":"Niels"},{"id":71,"name":"SoaZ"}]}],
"odds_teams":{"team a":"odds displayed here","team b":"odds displayed here"},
"recap":"recapping","games":[{"id":123,"length":2475,"winner_id":11,
"game_teams":[{"team_ingame_id":200,"team_id":11,"color":"red","first_blood":true,"first_tow
er":true,"first_inhibitor":true,"first_baron":true,"first_dragon":true,"tower_kills":10,"inh
ibitor_kills":2,"baron_kills":2,"dragon_kills":4,"vilemaw_kills":0,"dominion_victory_score":
0,
"game_player_teams":

[{"player_id":98,"champion_id":47,"lane":"jungle","role":"none","position":"support","partic
ipant_id":10,"kda":0,"kill":0,"death":0,"assists":16,"largest_killing_spree":0,"la
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":0,"triple_kills":0,"quadra_kills":0,"penta_kills":0,"unreal_kills":0,"total_dama
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e_damage_dealt_to_champions":640,"total_heal":7201,"total_units_healed":10,"total_
damage_taken":12735,"magical_damage_taken":5981,"physical_damage_taken":6729,"true
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r_kills":0,"total_minions_killed":13,"neutral_minions_killed":0,"neutral_minions_k
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ibitor_kill":false,"first_inhibitor_assist":true,"combat_player_score":0,"objectiv
e_player_score":0,"total_player_score":0,"total_score_rank":0},
```
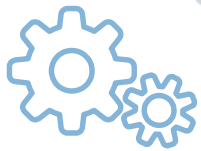


API Pandascore > Ruby script > RDF

Diseño de URIs

Nuestro "namespace" tiene la forma:
https://www.theesportslov.org/eSports-ontology
Usando el mismo dominio, los datos van a:
https://www.theesportslov.org/resources

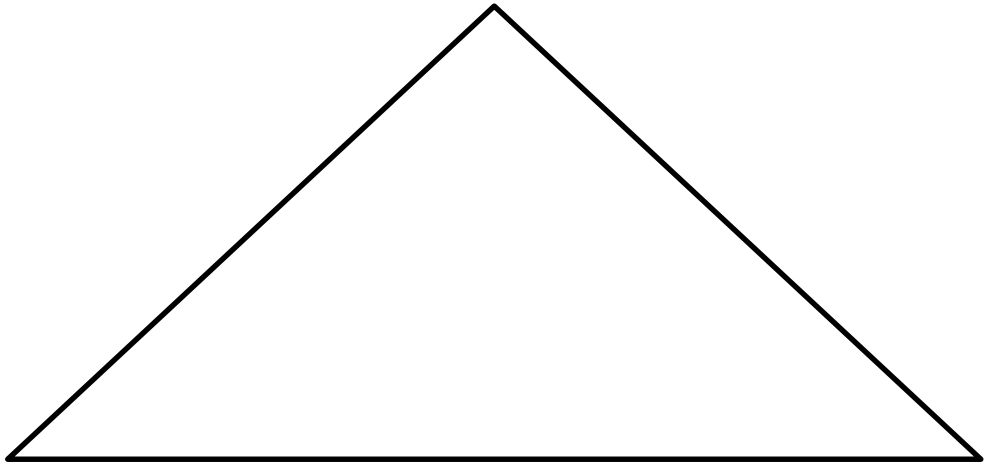


Una clase tendrá la forma (hash):
https://www.theesportslov.org/eSports-ontology#MiClase
Mientras que una instancia (slash):
https://www.theesportslov.org/resources/MiInstancia

Por ejemplo, para representar una partida, la clase de la ontología asociada es:
https://www.theesportslov.org/eSports-ontology#Game
Mientras que para representar una instancia de partida:
https://www.theesportslov.org/resources/Games/eulcs15r2fnaticvsorigen1

7.
Conclusiones

Añadir RDF Data Cube



Añadir datos constantes como instancias y dinámicos desde APIs

Añadir más axiomas, ya que es u

¡Gracias!

¿Alguna pregunta?