

Grammar for Language Describing Game Structures

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March 20, 2019

Pretty-printed EBNF grammar:

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 $\langle game \rangle ::= \langle roundList \rangle \text{ 'played by' } \langle teamList \rangle$   
 $\langle teamList \rangle ::= \langle team \rangle \{ \text{' , ' } \langle team \rangle \} \mid \langle playerList \rangle \mid \text{ 'randomly divide' } \langle playerList \rangle$   
 $\text{ 'into' } \langle nameList \rangle$   
 $\langle team \rangle ::= \text{ 'team' } \langle name \rangle \langle playerList \rangle$   
 $\langle playerList \rangle ::= \langle player \rangle \{ \text{' ; ' } \langle player \rangle \}$   
 $\langle player \rangle ::= \langle name \rangle \langle attributeList \rangle$   
 $\langle attributeList \rangle ::= \langle attribute \rangle \{ \text{' , ' } \langle attribute \rangle \}$   
 $\langle attribute \rangle ::= \langle affiliation \rangle \mid \langle score \rangle \mid \langle resource \rangle$   
 $\langle affiliation \rangle ::= \text{ 'affiliated with' } \langle name \rangle$   
 $\langle score \rangle ::= \text{ 'score' } \langle name \rangle \langle number \rangle$   
 $\langle resource \rangle ::= \text{ 'resource' } \langle name \rangle \langle number \rangle$   
 $\langle roundList \rangle ::= \langle round \rangle \{ \text{' ; ' } \langle round \rangle \} [ \langle modifierList \rangle ]$   
 $\langle round \rangle ::= \langle phase \rangle \{ \text{' , ' } \langle phase \rangle \} [ \text{ 'repeated' } \langle number \rangle \text{ 'times' } ]$   
 $\langle phase \rangle ::= \langle action \rangle \mid \langle progression \rangle$   
 $\langle action \rangle ::= \langle competition \rangle \mid \langle decision \rangle$   
 $\langle competition \rangle ::= [ \text{ 'scored' } \mid \text{ 'placed' } ] \text{ 'competition between' } \langle idList \rangle$   
 $\langle decision \rangle ::= \text{ 'vote by' } \langle idList \rangle \text{ 'between' } \langle idList \rangle \mid \text{ 'nomination of' } \langle number \rangle$   
 $\text{ 'of' } \langle idList \rangle \text{ 'by' } \langle identifier \rangle \mid \text{ 'allocate' } \mid \text{ 'binary' }$ 
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$\langle progression \rangle ::= \text{'update'} \langle identifier \rangle \langle attribute \rangle \text{'to'} \langle value \rangle$
 $\langle idList \rangle ::= \langle identifier \rangle \{ \text{' , ' } \langle identifier \rangle \} [\text{'except'} \langle idList \rangle]$
 $\langle identifier \rangle ::= \text{'everyone'} \mid \langle name \rangle \mid \langle name \rangle \mid \langle reference \rangle \mid \text{'chance'}$
 $\langle reference \rangle ::= \text{'winner'} \mid \text{'loser'} \mid \text{'voted'}$
 $\langle value \rangle ::= \langle name \rangle \mid \langle number \rangle$
 $\langle name \rangle ::= [a-zA-Z] [a-zA-Z0-9]$
 $\langle value \rangle ::= [0-9]^+$

Notes:

- Allow for random decisions
- Vote tiebreakers?
- Players - mandatory attributes? just affiliation? affiliation, score, resources, only included if used?
- Win condition or update affiliation to winner for someone in last round? Have a progression shortcut for win?
- index challenge/votes/phases or name them with identifiers?
- shortcuts for repeating a round, inserting a modifier into a complete set of rounds
- make grammar unambiguous
- multiple votes?
- I've restricted player attributes into 3 categories, with no opportunity for customization outside those three. Am I okay with this?
- modifiers for player lists? i.e. every player starts out with a vote resource of 20