

Grammar for Language Describing Game Structures

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Pretty-printed EBNF grammar:

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 $\langle game \rangle ::= \text{'Players:'} \langle teamList \rangle \text{'Rounds:'} \langle roundList \rangle \text{'Win:'} \langle winConditionList \rangle$   
 $\langle teamList \rangle ::= (\langle team \rangle \{ \text{' , ' } \langle team \rangle \} \mid \langle playerList \rangle \mid \text{'randomly divide'} \langle playerList \rangle \mid \text{'into'} \langle nameList \rangle) [\text{'all with'} \langle attributeList \rangle]$   
 $\langle team \rangle ::= \text{'team'} \langle name \rangle \text{' : ' } \langle playerList \rangle$   
 $\langle playerList \rangle ::= \langle player \rangle \{ \text{' , ' } \langle player \rangle \}$   
 $\langle player \rangle ::= \langle name \rangle [\langle attributeList \rangle]$   
 $\langle attributeList \rangle ::= \langle attribute \rangle \{ \text{' , ' } \langle attribute \rangle \}$   
 $\langle attribute \rangle ::= \text{'affiliation called'} \langle name \rangle \mid (\text{'score'} \mid \text{'resource'} \mid \text{'counter'}) \mid \text{'called'} \langle name \rangle [\text{'starting at'} \langle number \rangle] [\text{'with minimum of'} \langle number \rangle] [\text{'with maximum of'} \langle number \rangle]$   
 $\langle roundList \rangle ::= \langle round \rangle \text{' ; ' } \{ \langle round \rangle \}$   
 $\langle round \rangle ::= \langle phaseList \rangle [\text{'repeated'} \langle number \rangle \text{' times' } \text{'with modifications' } \text{' : ' } \langle modifierList \rangle]$   
 $\langle modifierList \rangle ::= \langle modifier \rangle \text{' ; ' } \{ \langle modifier \rangle \}$   
 $\langle modifier \rangle ::= [\text{'just'} \mid \text{'from'}] (\langle roundReference \rangle (\text{'before'} \mid \text{'after'} \mid \text{'instead of'}) \langle phaseReference \rangle \text{'insert'} \langle phase \rangle)$   
 $\langle roundReference \rangle ::= \text{'round'} [\langle number \rangle]$   
 $\langle phaseReference \rangle ::= \text{'phase'} [\langle number \rangle]$   
 $\langle phase \rangle ::= \langle action \rangle \mid \langle progression \rangle$ 
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$\langle phaseList \rangle ::= \langle phase \rangle \{ '\backslash n' \langle phase \rangle \}$
 $\langle action \rangle ::= \langle competition \rangle \mid \langle decision \rangle$
 $\langle competition \rangle ::= ['scored'] ['team'] 'competition between' \langle idList \rangle$
 $\langle decision \rangle ::= ['self-included'] 'vote by' \langle idList \rangle 'between' \langle idList \rangle \mid ['self-included']$
 $\quad 'nomination of' \langle number \rangle 'by' \langle identifier \rangle 'between' \langle idList \rangle \mid ['allocation of'$
 $\quad \langle name \rangle 'by' \langle idList \rangle \mid ['self-included'] 'directed vote by' \langle idList \rangle 'between'$
 $\quad \langle idList \rangle \mid ['uses?' \langle identifier \rangle 'then' '(' \langle phaseList \rangle ')' ['otherwise' '('$
 $\quad \langle phaseList \rangle ')']$
 $\langle progression \rangle ::= (\langle affiliationUpdate \rangle \mid \langle counterUpdate \rangle) ('for' \mid 'of') \langle idList \rangle$
 $\langle affiliationUpdate \rangle ::= 'elimination' \mid ('add' \mid 'remove') \langle name \rangle \mid ['number preserving'$
 $\quad 'swap' \langle nameList \rangle ['adding' \langle nameList \rangle] \mid 'change' \langle name \rangle 'to' \langle name \rangle \mid$
 $\quad 'merge' \langle nameList \rangle [\langle name \rangle]$
 $\langle counterUpdate \rangle ::= ('increase' \mid 'decrease') \langle name \rangle 'by' \langle value \rangle \mid 'set' \langle name \rangle$
 $\quad 'to' \langle value \rangle$
 $\langle value \rangle ::= \langle number \rangle \mid \langle name \rangle \mid 'results' 'of' (\langle compReference \rangle \mid \langle allocateReference \rangle$
 $\quad \mid \langle voteReference \rangle) \mid \langle identifier \rangle \langle name \rangle$
 $\langle idList \rangle ::= \langle identifier \rangle \{ ', ' \langle identifier \rangle \} ['except' \langle idList \rangle]$
 $\langle identifier \rangle ::= ('everyone' \mid \langle name \rangle \mid 'chance' '(' \langle idList \rangle ')' \mid 'nominated' \mid$
 $\quad 'tied' \mid 'eliminated' \mid ('winner' \mid 'loser') 'of' \langle compReference \rangle \mid ('majority'$
 $\quad \mid 'minority') 'of' \langle voteReference \rangle [\langle tiebreaker \rangle] \mid ('highest' \mid 'lowest' \mid$
 $\quad 'most' \mid 'least') \langle name \rangle '(' \langle idList \rangle ')' [\langle tiebreaker \rangle] ['*' \langle value \rangle]$
 $\langle compReference \rangle ::= 'competition' [\langle number \rangle]$
 $\langle allocateReference \rangle ::= 'allocation' [\langle number \rangle]$
 $\langle voteReference \rangle ::= 'vote' [\langle number \rangle]$
 $\langle tiebreaker \rangle ::= 'tiebroken by' ([\langle action \rangle] \langle identifier \rangle)$
 $\langle name \rangle ::= ('a' \mid \dots \mid 'z' \mid 'A' \mid \dots \mid 'Z') \{ 'a' \mid \dots \mid 'z' \mid 'A' \mid \dots \mid 'Z' \mid '0' \mid \dots \mid '9' \}$
 $\langle nameList \rangle ::= \langle name \rangle \{ ', ' \langle name \rangle \}$
 $\langle number \rangle ::= ['-'] ('0' \mid \dots \mid '9') +$
 $\langle winCondition \rangle ::= ['team'] 'reach' \langle name \rangle 'of' \langle number \rangle \mid ['team'] 'competition'$
 $\quad \mid ['team'] ('highest' \mid 'lowest' \mid 'most' \mid 'least') \langle name \rangle \mid \langle number \rangle 'member jury vote'$
 $\quad \mid 'survive'$

$\langle winConditionList \rangle ::= \langle winCondition \rangle \{', ' \langle winCondition \rangle\}$

Notes:

- make grammar unambiguous
- should allocate be a decision and progression or just progression? Both, but decision will automatically also do the progression. The progression exists for non-decision related resource updates, such as awarding a player more of a resource for winning a competition.