istgame/samples

ktug wiki

2015년 9월 30일

- istgame: tikz 기반의 게임 트리 그리기
- egameps의 저자인 Osborne의 책 *An Introduction to Game Theory*(IGT)에 나오는 게임 트리 몇 개 그려 보기.
- 관심 있는 누군가가 output을 올려주기를 바라며… –ischo
- template

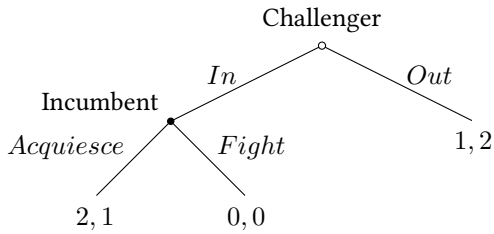
```
\documentclass{oblivoir}

\usepackage{istgame}

\begin{document}

\begin{istgame}
...
\end{istgame}

\end{document}
```

- istgame v0.6 or later.

1 IGT

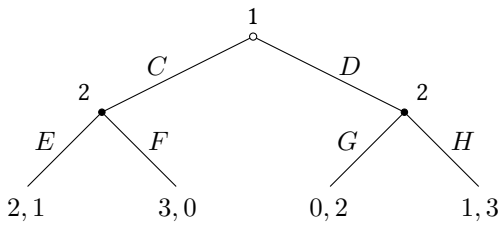
1.1 IGT–1

- istgame v0.6에 맞게 코드 수정됨.
- Figure 158.1




```
\begin{istgame}
\xdistance{10mm}{40mm}
\istroot(0)[initial node]{Challenger}
  \istb{In}[al]
  \istb{Out}[ar]{1,2}
  \endist
\xdistance{10mm}{20mm}
  \istroot(1)(0-1)<150>{Incumbent}
  \istb{Acquiesce}[al]{2,1}
  \istb{Fight}[ar]{0,0}
  \endist
\end{istgame}
```

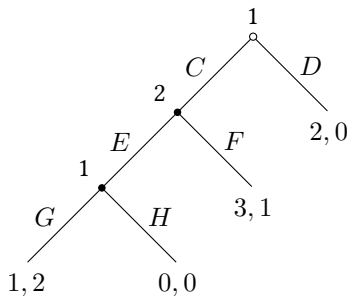
- Figure 159.1




```
\begin{istgame}
\xdistance{10mm}{40mm}
  \istroot(0)[initial node]{1}
  \istb{C}[al]
  \istb{D}[ar]
  \endist
\xdistance{10mm}{20mm}
\istroot(1)(0-1)<135>{2}
  \istb{E}[al]{2,1}
  \istb{F}[ar]{3,0}
  \endist
```

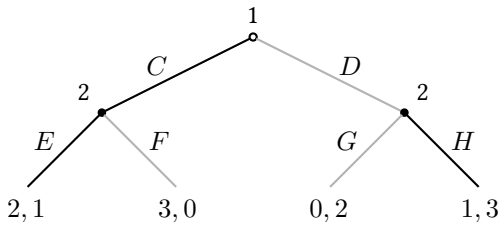
```
\istroot(2)(0-2)<45>{2}
  \istb{G}[al]{0,2}
  \istb{H}[ar]{1,3}
  \endist
\end{istgame}
```

- Figure 160.1



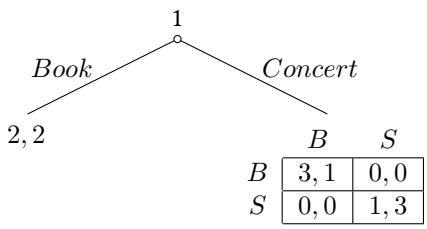

```
\begin{istgame}
\xdistance{10mm}{20mm}
\istroot(0)[initial node]{1}
  \istb{C}[al]
  \istb{D}[ar]{2,0}
  \endist
\istroot(1)(0-1)<135>{2}
  \istb{E}[al]
  \istb{F}[ar]{3,1}
  \endist
\istroot(2)(1-1)<135>{1}
  \istb{G}[al]{1,2}
  \istb{H}[ar]{0,0}
  \endist
\end{istgame}
```

- Figure 170.1



```
\begin{istgame}[line width=.8pt]
\xdistance{10mm}{40mm}
\istroot(0)[initial node]{1}
  \istb{C}[al]
  \istb[black!30]{D}[ar]
  \endist
\xdistance{10mm}{20mm}
\istroot(1)(0-1)<135>{2}
  \istb{E}[al]{2,1}
  \istb[black!30]{F}[ar]{3,0}
  \endist
\istroot(2)(0-2)<45>{2}
  \istb[black!30]{G}[al]{0,2}
  \istb{H}[ar]{1,3}
  \endist
\end{istgame}
```

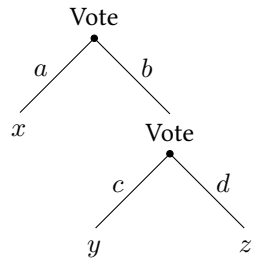
- Figure 208.1




```
%\usepackage{tabu}
%\DeclareExpandableDocumentCommand\xcol{mO{c}m}%
%   {\multicolumn{#1}{#2}{\ensuremath{#3}} }
\begin{istgame}
\xdistance{10mm}{40mm}
\istroot(0)[initial node]{1}
  \istb{Book}[al]{2,2}
  \istb{Concert}[ar]{
  \begin{tabu}spread0pt{X[$c1]*2{|X[$c2]}|}
  \xcol1{~} & \xcol1{B} & \xcol1{S} \\\tabucline{2-}
  B   & 3,1     & 0,0    \\\tabucline{2-}
  S   & 0,0     & 1,3    \\\tabucline{2-}
  \end{tabu}
  }
```

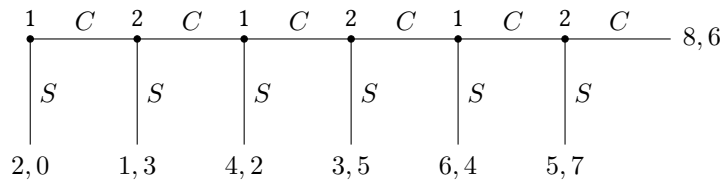
```
  \endist
\end{istgame}
```

- Figure 218.1




```
\begin{istgame}
\xdistance{10mm}{20mm}
\istroot(0){Vote}
  \istb{a}[al]{x}
  \istb{b}[ar]
  \endist
\istroot(1)([yshift=-1.5em]0-2){Vote}
  \istb{c}[al]{y}
  \istb{d}[ar]{z}
  \endist
\end{istgame}
```

- Figure 234.1

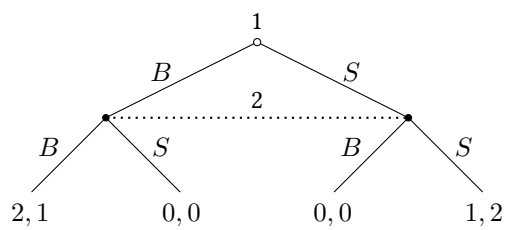



```
\begin{istgame}
\setistgrowdirection{-45}
\xdistance{10mm}{20mm}
\istroot(0){1}
  \istb{S}[r]{2,0}[b]
  \istb{C}[a]
  \endist
```

```
\istroot(1)(0-2){2}
  \istb{S}[r]{1,3}[b]
  \istb{C}[a]
  \endist
\istroot(2)(1-2){1}
  \istb{S}[r]{4,2}[b]
  \istb{C}[a]
  \endist
\istroot(3)(2-2){2}
  \istb{S}[r]{3,5}[b]
  \istb{C}[a]
  \endist
\istroot(4)(3-2){1}
  \istb{S}[r]{6,4}[b]
  \istb{C}[a]
  \endist
\istroot(5)(4-2){2}
  \istb{S}[r]{5,7}[b]
  \istb{C}[a]{8,6}[r]
  \endist
\end{istgame}
```

1.2 IGT–2

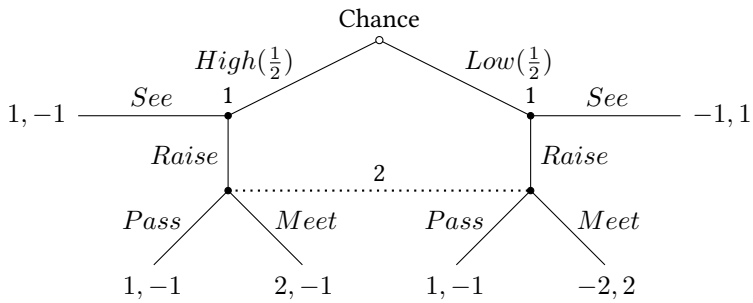
- Figure 315.1




```
\begin{istgame}
\xdistance{10mm}{40mm}
  \istroot(0)[initial node]{1}
  \istb{B}[al]
  \istb{S}[ar]
  \endist
\xInfoset(0-1)(0-2){2}
\xdistance{10mm}{20mm}
```

```
\istroot(1)(0-1)
  \istb{B}[al]{2,1}
  \istb{S}[ar]{0,0}
  \endist
\istroot(2)(0-2)
  \istb{B}[al]{0,0}
  \istb{S}[ar]{1,2}
  \endist
\end{istgame}
```

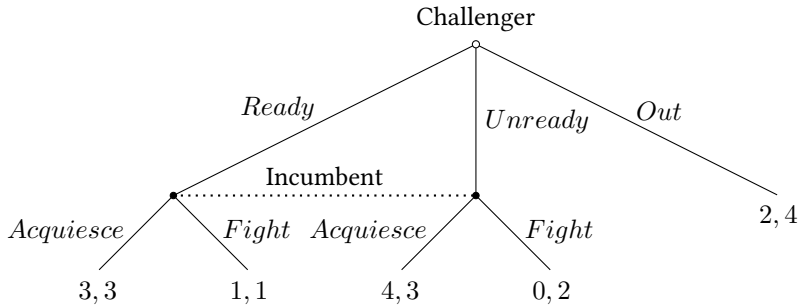
- Figure 316.1




```
\begin{istgame}
\xdistance{10mm}{40mm}
\istroot(0)[initial node]{Chance}
  \istb{High(\frac12)}[al]
  \istb{Low(\frac12)}[ar]
  \endist
\xdistance{7mm}{14mm}
\istroot[-135](H)(0-1){1}
  \istb<grow=180,level distance=20mm>{See}[a]{1,-1}[l]
  \istb{Raise}[l]
  \endist
\istroot[-45](L)(0-2){1}
  \istb{Raise}[r]
  \istb<grow=0,level distance=20mm>{See}[a]{-1,1}[r]
  \endist
\xdistance{10mm}{20mm}
\istroot(1)(H-2)
  \istb{Pass}[al]{1,-1}
  \istb{Meet}[ar]{2,-1}
  \endist
```

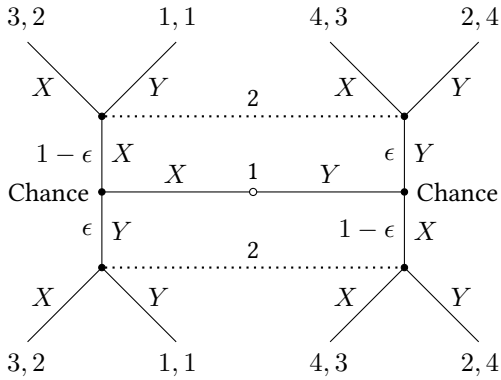
```
\istroot(2)(L-1)
  \istb{Pass}[al]{1,-1}
  \istb{Meet}[ar]{-2,2}
  \endist
\xInfoset(H-2)(L-1){2}
\end{istgame}
```

- Figure 317.1




```
\begin{istgame}
\xdistance{20mm}{40mm}
\istroot(0)[initial node]{Challenger}
  \istb{Ready}[al]
  \istb{Unready}[r]
  \istb{Out}[ar]{2,4}
  \endist
\setistactionlabelposition{-.5pt}{7pt}%
\xdistance{10mm}{20mm}
\istroot(1)(0-1)
  \istb{Acquiesce}[al]{3,3}
  \istb{Fight}[ar]{1,1}
  \endist
\istroot(2)(0-2)
  \istb{Acquiesce}[al]{4,3}
  \istb{Fight}[ar]{0,2}
  \endist
\xInfoset(0-1)(0-2){Incumbent}
\end{istgame}
```

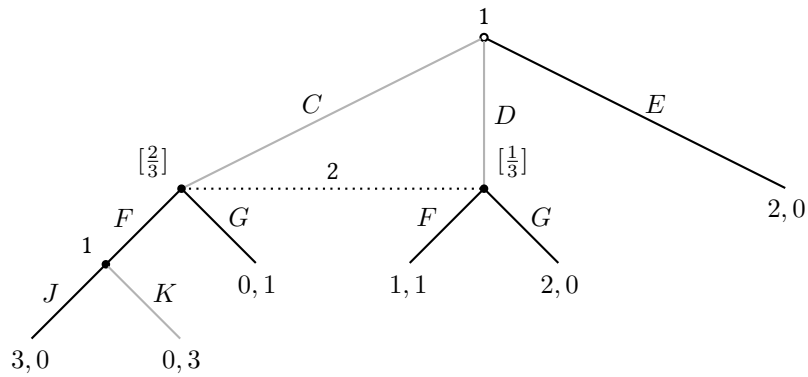
- Figure 321.1




```
\begin{istgame}
\xdistance{20mm}{20mm}
\istroot(0)[chance node]{1}
  \istb<grow=left>{X}[a]
  \istb<grow=right>{Y}[a]
  \endist
\xdistance{10mm}{20mm}
\istroot(1)(0-1)<180>{Chance}
  \istb<grow=north>{X}[r]
  \istb<grow=south>{Y}[r]
  \endist
\istroot(2)(0-2)<0>{Chance}
  \istb<grow=south>{X}[r]
  \istb<grow=north>{Y}[r]
  \endist
\istroot[north](x1)(1-1)
  \istb{Y}[br]{1,1}
  \istb{X}[bl]{3,2}
  \endist
\istroot(y1)(1-2)
  \istb{X}[al]{3,2}
  \istb{Y}[ar]{1,1}
  \endist
\istroot(x2)(2-1)
  \istb{X}[al]{4,3}
  \istb{Y}[ar]{2,4}
  \endist
\istroot[north](y2)(2-2)
  \istb{Y}[br]{2,4}
  \istb{X}[bl]{4,3}
```

```
  \endist
\xInfoset(x1)(y2){2}
\xInfoset(y1)(x2){2}
\xActionLabel(1)(x1){1-\epsilon}[l]
\xActionLabel(1)(y1){\epsilon}[l]
\xActionLabel(2)(x2){1-\epsilon}[l]
\xActionLabel(2)(y2){\epsilon}[l]
\end{istgame}
```

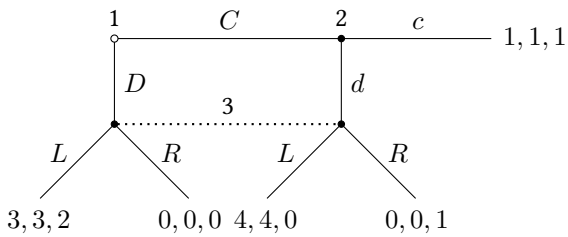
- Figure 326.1




```
\begin{istgame}[line width=.8pt]
\xdistance{20mm}{40mm}
\istroot(0)[initial node]{1}
  \istb[black!30]{C}[al]
  \istb[black!30]{D}[r]
  \istb{E}[ar]{2,0}
  \endist
\xdistance{10mm}{20mm}
\istroot(1)(0-1)<150>{$[\frac23]$}
  \istb{F}[al]
  \istb{G}[ar]{0,1}
  \endist
\istroot(2)(0-2)<30>{$[\frac13]$}
  \istb{F}[al]{1,1}
  \istb{G}[ar]{2,0}
  \endist
\xInfoset(0-1)(0-2){2}
\istroot(3)(1-1)<150>{1}
```

```
  \istb{J}[al]{3,0}
  \istb[black!30]{K}[ar]{0,3}
  \endist
\end{istgame}
```

- Figure 331.2




```
\begin{istgame}
\xdistance{8mm}{16mm}
\istroot[-45](0)[initial node]{1}
  \istb{D}[r]
  \istb<grow=0,level distance=30mm>{C}[a]
  \endist
\istroot(1)(0-1)+10mm..20mm+
  \istb{L}[al]{3,3,2}
  \istb{R}[ar]{0,0,0}
  \endist
\istroot[-45](a)(0-2){2}
  \istb{d}[r]
  \istb<grow=0,level distance=20mm>{c}[a]{1,1,1}[r]
  \endist
\istroot(a1)(a-1)+10mm..20mm+
  \istb{L}[al]{4,4,0}
  \istb{R}[ar]{0,0,1}
  \endist
\xInfoset(1)(a1){3}
\end{istgame}
```
