Package 'EpistemicGameTheory'

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Type Package

Title Constructing an Epistemic Model for the Games with Two Players

Version 0.1.2

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Imports stats,utils

Depends lpSolve

Description Constructing an epistemic model such that, for every player i and for every choice c(i) which is optimal, there is one type that expresses common belief in rationality.

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LazyData TRUE

RoxygenNote 6.0.1

Suggests testthat

NeedsCompilation no

Repository CRAN

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Contents

esdc *Eliminating strictly dominated choices*

Description

This function eliminates strictly dominated choices.

Usage

```
esdc(n, m, A, choices.A, B, choices.B, iteration)
```

Arguments

n	an integer representing the number of choices of player 1
m	an integer representing the number of choices of player 2
A	an nxm matrix representing the payoff matrix of player 1
choices.A	a vector of length n representing the names of player 1's choices
B	an nxm matrix representing the payoff matrix of player 2
choices.B	a vector of length m representing the names of player 2's choices
iteration	an integer representing the iteration number of algorithm

Details

This function works for the games with two players.

Value

The reduced matrices of players' that are obtained after eliminating strictly dominated choices

Author(s)

Bilge Baser

Examples

```
a=4
b=4
pay.A=matrix(c(0,3,2,1,4,0,2,1,4,3,0,1,4,3,2,0),4,4)
ch.A=c("Blue","Green","Red","Yellow")
pay.B=matrix(c(5,4,4,4,3,5,3,3,2,2,5,2,1,1,1,5),4,4)
ch.B=c("Blue","Green","Red","Yellow")
iter=5
esdc(a,b,pay.A,ch.A,pay.B,ch.B,iter)
```

type *Finding types that express common belief in rationality for optimal choices*

Description

This function takes the reduced payoff matrices and finds out the probabilities for the types that expresses common belief in rationality for optimal choices.

Usage

```
type(A, B, choices.A, choices.B)
```

Arguments

A	an nxm matrix representing the reduced payoff matrix of player 1
B	an nxm matrix representing the reduced payoff matrix of player 2
choices.A	a vector of length n representing the names of player 1's choices
choices.B	a vector of length m representing the names of player 2's choices

Details

This function works for the games with two players. It returns infeasible solution for the irrational choices.

Value

Probabilities of the types that expresses common belief in rationality for optimal choices

Author(s)

Bilge Baser

See Also

lp

Examples

```
Ar=matrix(c(0,3,2,4,0,2,4,3,0),3,3)
choices.Ar=c("Blue","Green","Red")
Br=matrix(c(5,4,4,3,5,3,2,2,5),3,3)
choices.Br=c("Blue","Green","Red")
type(Ar,Br,choices.Ar,choices.Br)
```

Index