Numeric Example

init

Set the library's directory first!

```r
#Load Libraries and functions
setwd("C:/Users/Christina/Desktop/mse-r/MSE-R")
source("mse.R")
```

Import precomputed data

Set the data's directory preferably in the variable 'filename'.

```r
filename<-"import/round1m1-1.xls.pre.dat"
```

Load the data in variables with meaningful names

```r
x<-import(filename)
g(header,noM,noU,noD,noAttr,distanceMatrices,matchMatrix,mate)%=%x
```

Routines (calculate payoff matrix, inequalities members, dataArray)

```r
#Create payoffMatrix
Cx<-Cx(noAttr)
payoffMatrix<-CpayoffMatrix(noM,noU,noD,Cx,distanceMatrices,noAttr)

#Assign payoffMatrix numerical values (set x's)
xval<-c(1,2)
payoffMatrix<-assignpayoffMatrix(payoffMatrix,xval)
```

```r
#Create inequality members
ineqmembers<-Cineqmembers(mate)
```

```r
#Create Data Array
dataArray<-CdataArray(distanceMatrices,ineqmembers)
```

Maximization

Differential Evolution Method

The default DifferentialEvolution parameters:

```r
#Objective function
coefficient1<-1
b<-c(2,1) #Define x1,x2,... values
obj<-objective(b)

#maximize function
lower <- c(-10, -10)
upper <- -lower
```

option name	default value	
lower,upper	-10,10	two vectors specifying scalar real lower and upper bounds on each parameter to be optimiz
CR	0.5	crossover probability from interval [0,1]
trace	FALSE	Positive integer or logical value indicating whether printing of progress occurs at each itera
itermax	100	the maximum iteration (population generation) allowed
F	0.6	differential weighting factor from interval [0,2]
NP	50	number of population members. Defaults to NA; if the user does not change the value of N
reltol	0.001	relative convergence tolerance. The algorithm stops if it is unable to reduce the value by a
RandomSeed	0	Random Seed to be used for result reproducibility

```
par<-list(lower=lower,upper=upper,NP=50,itermax=100,trace=FALSE,reltol=0.001,CR=0.5,F=0.6,RandomSeed=0)
x<-maximize(par)
g(bestmem,bestval)%=%x
print(bestmem)
```

```
##     par1     par2
## 3.833526 2.929962
```

```
print(bestval)
```

```
## [1] 29966
```

Confidence Intervals