"C:\Program Files\Java\jdk-11.0.2\bin\java.exe" "-javaagent:D:\intellijUltimate\IntelliJ IDEA 2019.2.3\lib\idea\_rt.jar=51685:D:\intellijUltimate\IntelliJ IDEA 2019.2.3\bin" -Dfile.encoding=UTF-8 -classpath E:\jMetal\jMetal-master\jmetal-exec\target\classes;E:\jMetal\jMetal-master\jmetal-core\target\classes;C:\Users\Eason\.m2\repository\org\apache\maven\reporting\maven-reporting-api\3.0\maven-reporting-api-3.0.jar;C:\Users\Eason\.m2\repository\org\apache\maven\doxia\doxia-sink-api\1.0\doxia-sink-api-1.0.jar;C:\Users\Eason\.m2\repository\org\apache\commons\commons-lang3\3.3.2\commons-lang3-3.3.2.jar;C:\Users\Eason\.m2\repository\org\apache\commons\commons-collections4\4.2\commons-collections4-4.2.jar;C:\Users\Eason\.m2\repository\commons-io\commons-io\2.4\commons-io-2.4.jar;C:\Users\Eason\.m2\repository\org\hamcrest\hamcrest-all\1.3\hamcrest-all-1.3.jar;C:\Users\Eason\.m2\repository\org\apache\commons\commons-math3\3.6.1\commons-math3-3.6.1.jar;C:\Users\Eason\.m2\repository\nz\ac\waikato\cms\weka\weka-stable\3.8.1\weka-stable-3.8.1.jar;C:\Users\Eason\.m2\repository\nz\ac\waikato\cms\weka\thirdparty\java-cup-11b\2015.03.26\java-cup-11b-2015.03.26.jar;C:\Users\Eason\.m2\repository\nz\ac\waikato\cms\weka\thirdparty\java-cup-11b-runtime\2015.03.26\java-cup-11b-runtime-2015.03.26.jar;C:\Users\Eason\.m2\repository\nz\ac\waikato\cms\weka\thirdparty\bounce\0.18\bounce-0.18.jar;C:\Users\Eason\.m2\repository\com\googlecode\matrix-toolkits-java\mtj\1.0.4\mtj-1.0.4.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\netlib-native\_ref-osx-x86\_64\1.1\netlib-native\_ref-osx-x86\_64-1.1-natives.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\native\_ref-java\1.1\native\_ref-java-1.1.jar;C:\Users\Eason\.m2\repository\com\github\fommil\jniloader\1.1\jniloader-1.1.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\netlib-native\_ref-linux-x86\_64\1.1\netlib-native\_ref-linux-x86\_64-1.1-natives.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\netlib-native\_ref-linux-i686\1.1\netlib-native\_ref-linux-i686-1.1-natives.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\netlib-native\_ref-win-x86\_64\1.1\netlib-native\_ref-win-x86\_64-1.1-natives.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\netlib-native\_ref-win-i686\1.1\netlib-native\_ref-win-i686-1.1-natives.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\netlib-native\_ref-linux-armhf\1.1\netlib-native\_ref-linux-armhf-1.1-natives.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\netlib-native\_system-osx-x86\_64\1.1\netlib-native\_system-osx-x86\_64-1.1-natives.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\native\_system-java\1.1\native\_system-java-1.1.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\netlib-native\_system-linux-x86\_64\1.1\netlib-native\_system-linux-x86\_64-1.1-natives.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\netlib-native\_system-linux-i686\1.1\netlib-native\_system-linux-i686-1.1-natives.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\netlib-native\_system-linux-armhf\1.1\netlib-native\_system-linux-armhf-1.1-natives.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\netlib-native\_system-win-x86\_64\1.1\netlib-native\_system-win-x86\_64-1.1-natives.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\netlib-native\_system-win-i686\1.1\netlib-native\_system-win-i686-1.1-natives.jar;C:\Users\Eason\.m2\repository\net\sourceforge\f2j\arpack\_combined\_all\0.1\arpack\_combined\_all-0.1.jar;C:\Users\Eason\.m2\repository\com\googlecode\netlib-java\netlib-java\1.1\netlib-java-1.1.jar;C:\Users\Eason\.m2\repository\com\github\fommil\netlib\core\1.1\core-1.1.jar;E:\jMetal\jMetal-master\jmetal-algorithm\target\classes;C:\Users\Eason\.m2\repository\com\fuzzylite\jfuzzylite\5.0\jfuzzylite-5.0.jar;E:\jMetal\jMetal-master\jmetal-problem\target\classes;C:\Users\Eason\.m2\repository\org\knowm\xchart\xchart\3.2.2\xchart-3.2.2.jar;C:\Users\Eason\.m2\repository\de\erichseifert\vectorgraphics2d\VectorGraphics2D\0.11\VectorGraphics2D-0.11.jar org.uma.jmetal.runner.multiobjective.Exercise2exec

2019-11-06 08:11:09.866 INFO: Loggers configured with null [org.uma.jmetal.util.JMetalLogger configureLoggers]

2019-11-06 08:11:09.905 INFO: Total execution time: 2147ms [org.uma.jmetal.runner.multiobjective.NSGAIIRunner custNSGAIIRunner]

2019-11-06 08:11:09.915 INFO: Random seed: 1572990067693 [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:11:09.915 INFO: Objectives values have been written to file FUN.tsv [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:11:09.916 INFO: Variables values have been written to file VAR.tsv [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:11:09.980 INFO:

Hypervolume (N) : 0.25

Hypervolume : 0.25

Epsilon (N) : 0.5

Epsilon : 0.5

GD (N) : 1.5918088827754169

GD : 1.5918088827754169

IGD (N) : 0.01413775953598034

IGD : 0.01413775953598034

IGD+ (N) : 0.1939119738130001

IGD+ : 0.1939119738130001

Spread (N) : 0.761411680740703

Spread : 0.761411680740703

Error ratio : 1.0

[org.uma.jmetal.util.AbstractAlgorithmRunner printQualityIndicators]

NSGAII

i = Algorithm3, j or k = Algorithm1

p(i,j):6.4591415400004735

i = Algorithm3, j or k = Algorithm2

p(i,j):-161.48508371294045

i = Algorithm1, j or k = Algorithm2

p(i,j):-170.7736987414199

i = Algorithm1, j or k = Algorithm3

p(i,j):7.225598354748087

i = Algorithm2, j or k = Algorithm1

p(i,j):195.66024057909794

i = Algorithm2, j or k = Algorithm3

p(i,j):192.14358409054933

2019-11-06 08:12:05.789 INFO: Total execution time: 5568ms [org.uma.jmetal.runner.multiobjective.SPEA2Runner custSPEA2Runner]

2019-11-06 08:12:05.794 INFO: Random seed: 1572990067693 [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:12:05.795 INFO: Objectives values have been written to file FUN.tsv [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:12:05.795 INFO: Variables values have been written to file VAR.tsv [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:12:05.855 INFO:

Hypervolume (N) : 0.25

Hypervolume : 0.25

Epsilon (N) : 0.5

Epsilon : 0.5

GD (N) : 1.5746366710662156

GD : 1.5746366710662156

IGD (N) : 0.01413775953598034

IGD : 0.01413775953598034

IGD+ (N) : 0.1939119738130001

IGD+ : 0.1939119738130001

Spread (N) : 0.781119456697086

Spread : 0.781119456697086

Error ratio : 1.0

[org.uma.jmetal.util.AbstractAlgorithmRunner printQualityIndicators]

SPEA2

i = Algorithm3, j or k = Algorithm1

p(i,j):13.806877102652635

i = Algorithm3, j or k = Algorithm2

p(i,j):-164.35298307803424

i = Algorithm1, j or k = Algorithm2

p(i,j):-161.36153454028792

i = Algorithm1, j or k = Algorithm3

p(i,j):5.607842943198193

i = Algorithm2, j or k = Algorithm1

p(i,j):194.14360114684786

i = Algorithm2, j or k = Algorithm3

p(i,j):193.97537026652813

2019-11-06 08:13:04.658 INFO: Total execution time: 7139ms [org.uma.jmetal.runner.multiobjective.IBEARunner custIBEARunner]

2019-11-06 08:13:04.663 INFO: Random seed: 1572990067693 [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:13:04.664 INFO: Objectives values have been written to file FUN.tsv [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:13:04.664 INFO: Variables values have been written to file VAR.tsv [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:13:04.695 INFO:

Hypervolume (N) : 0.0

Hypervolume : 0.0

Epsilon (N) : 1.5

Epsilon : 1.5

GD (N) : 1.4547755273217264

GD : 1.4547755273217264

IGD (N) : 0.038710400654473974

IGD : 0.038710400654473974

IGD+ (N) : 1.1909824009973797

IGD+ : 1.1909824009973797

Spread (N) : 0.8139656252807199

Spread : 0.8139656252807199

Error ratio : 1.0

[org.uma.jmetal.util.AbstractAlgorithmRunner printQualityIndicators]

IBEA

i = Algorithm3, j or k = Algorithm1

p(i,j):5.946150287436097

i = Algorithm3, j or k = Algorithm2

p(i,j):-136.8825842818293

i = Algorithm1, j or k = Algorithm2

p(i,j):-130.26220679451376

i = Algorithm1, j or k = Algorithm3

p(i,j):8.253685221689835

i = Algorithm2, j or k = Algorithm1

p(i,j):160.49947694257526

i = Algorithm2, j or k = Algorithm3

p(i,j):160.7808377686433

2019-11-06 08:13:54.032 INFO: Total execution time: 1648ms [org.uma.jmetal.runner.multiobjective.NSGAIIRunner custNSGAIIRunner]

2019-11-06 08:13:54.034 INFO: Random seed: 1572990067693 [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:13:54.034 INFO: Objectives values have been written to file FUN.tsv [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:13:54.035 INFO: Variables values have been written to file VAR.tsv [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:13:54.040 INFO:

Hypervolume (N) : 0.25

Hypervolume : 0.25

Epsilon (N) : 0.5

Epsilon : 0.5

GD (N) : 2.3517952629127716

GD : 2.3517952629127716

IGD (N) : 0.01413775953598034

IGD : 0.01413775953598034

IGD+ (N) : 0.1939119738130001

IGD+ : 0.1939119738130001

Spread (N) : 0.6765053981855281

Spread : 0.6765053981855281

Error ratio : 1.0

[org.uma.jmetal.util.AbstractAlgorithmRunner printQualityIndicators]

NSGAII

i = Algorithm3, j or k = Algorithm1

p(i,j):1.2837358607125111

i = Algorithm3, j or k = Algorithm2

p(i,j):-20.868936594649654

i = Algorithm1, j or k = Algorithm2

p(i,j):-12.064312920505273

i = Algorithm1, j or k = Algorithm3

p(i,j):4.551132712229119

i = Algorithm2, j or k = Algorithm1

p(i,j):26.667197092662732

i = Algorithm2, j or k = Algorithm3

p(i,j):28.213378478783753

2019-11-06 08:14:22.029 INFO: Total execution time: 1651ms [org.uma.jmetal.runner.multiobjective.SPEA2Runner custSPEA2Runner]

2019-11-06 08:14:22.031 INFO: Random seed: 1572990067693 [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:14:22.031 INFO: Objectives values have been written to file FUN.tsv [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:14:22.032 INFO: Variables values have been written to file VAR.tsv [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:14:22.036 INFO:

Hypervolume (N) : 0.25

Hypervolume : 0.25

Epsilon (N) : 0.5

Epsilon : 0.5

GD (N) : 2.362732561649184

GD : 2.362732561649184

IGD (N) : 0.01413775953598034

IGD : 0.01413775953598034

IGD+ (N) : 0.1939119738130001

IGD+ : 0.1939119738130001

Spread (N) : 0.709039207424561

Spread : 0.709039207424561

Error ratio : 1.0

[org.uma.jmetal.util.AbstractAlgorithmRunner printQualityIndicators]

SPEA2

i = Algorithm3, j or k = Algorithm1

p(i,j):4.342812337306384

i = Algorithm3, j or k = Algorithm2

p(i,j):-21.86601446019786

i = Algorithm1, j or k = Algorithm2

p(i,j):-16.27535067324024

i = Algorithm1, j or k = Algorithm3

p(i,j):2.2171157870181304

i = Algorithm2, j or k = Algorithm1

p(i,j):27.858635097705246

i = Algorithm2, j or k = Algorithm3

p(i,j):28.66207940453556

2019-11-06 08:14:52.269 INFO: Total execution time: 3844ms [org.uma.jmetal.runner.multiobjective.IBEARunner custIBEARunner]

2019-11-06 08:14:52.271 INFO: Random seed: 1572990067693 [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:14:52.271 INFO: Objectives values have been written to file FUN.tsv [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:14:52.271 INFO: Variables values have been written to file VAR.tsv [org.uma.jmetal.util.AbstractAlgorithmRunner printFinalSolutionSet]

2019-11-06 08:14:52.275 INFO:

Hypervolume (N) : 0.0

Hypervolume : 0.0

Epsilon (N) : 2.5

Epsilon : 2.5

GD (N) : 1.857759484981838

GD : 1.857759484981838

IGD (N) : 0.07412488863286004

IGD : 0.07412488863286004

IGD+ (N) : 2.3412796118886465

IGD+ : 2.3412796118886465

Spread (N) : 0.7737344198438946

Spread : 0.7737344198438946

Error ratio : 1.0

[org.uma.jmetal.util.AbstractAlgorithmRunner printQualityIndicators]

IBEA

i = Algorithm3, j or k = Algorithm1

p(i,j):1.7099067648888422

i = Algorithm3, j or k = Algorithm2

p(i,j):-19.029307322844502

i = Algorithm1, j or k = Algorithm2

p(i,j):-13.305783612185934

i = Algorithm1, j or k = Algorithm3

p(i,j):6.474988401042353

i = Algorithm2, j or k = Algorithm1

p(i,j):30.551672616297537

i = Algorithm2, j or k = Algorithm3

p(i,j):30.820306512930088

Process finished with exit code 0