היי, לאחר השינוי בפורמט הבעיה שלנו, שיננו את BNB שיתאים לבעיה החדשה.

הרצנו את כל הקלטים בגודל 10 משימות וBNB לא אכזב. בשורה התחתונה זה סיכום הריצה:

"Correct (size-numberCorrect):" QMap((10, 60))

"Mistakes(size-numberMistakes):" QMap()

"Total Avegare error: 0"

"Total time: 0.874 seconds"

אנחנו נריץ הלילה משימה בגודל 50 כדי (בתקווה) לראות תוצאות מחר בבוקר ונעדכן.

להלן כל הפלט של הריצה(אין כלום מעניין – סתם שתראי שיש תוצאות):

"number of input=60. distribution=all. range=all #jobs=10. #machines=all"

"--------------------START 1 from 60--------------------------------"

"input file number 1: inputName=C:/algo/h2/all2/NU\_1\_0010\_05\_0.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_1\_05\_0010\_0.txt"

"\*\*\*Data from file NU\_1\_0010\_05\_0.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_1\_05\_0010\_0.txt: machinesNum=5 jobsNum=10 lowerBound=193 upperBound=193 isOptimal=1"

Content of machines summed (100, 193, 188, 192, 192)

input selected: size 10 sum 865

----Our Results-------

"tf=198. Machines:<99,90,1>,<98,95>,<98>,<97,95>,<96,96>"

"----Comparison for the 0 example----"

"\*\*\*tf from benchmark was 198(we added the number of machines) and target function from our bnb search is 198"

\*\*\*RESULT IS THE SAME

Run time: 0.011 seconds

"Correct (size-numberCorrect):" QMap((10, 1))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: nan"

"-----------END 1 from 60-----------------------------------------"

"--------------------START 2 from 60--------------------------------"

"input file number 2: inputName=C:/algo/h2/all2/NU\_1\_0010\_05\_1.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_1\_05\_0010\_1.txt"

"\*\*\*Data from file NU\_1\_0010\_05\_1.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_1\_05\_0010\_1.txt: machinesNum=5 jobsNum=10 lowerBound=189 upperBound=189 isOptimal=1"

Content of machines summed (115, 189, 188, 188, 187)

input selected: size 10 sum 867

----Our Results-------

"tf=194. Machines:<100,15>,<99,90>,<98,90>,<97,91>,<94,93>"

"----Comparison for the 1 example----"

"\*\*\*tf from benchmark was 194(we added the number of machines) and target function from our bnb search is 194"

\*\*\*RESULT IS THE SAME

Run time: 0.012 seconds

"Correct (size-numberCorrect):" QMap((10, 2))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 2 from 60-----------------------------------------"

"--------------------START 3 from 60--------------------------------"

"input file number 3: inputName=C:/algo/h2/all2/NU\_1\_0010\_05\_2.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_1\_05\_0010\_2.txt"

"\*\*\*Data from file NU\_1\_0010\_05\_2.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_1\_05\_0010\_2.txt: machinesNum=5 jobsNum=10 lowerBound=186 upperBound=186 isOptimal=1"

Content of machines summed (103, 185, 186, 185, 185)

input selected: size 10 sum 844

----Our Results-------

"tf=191. Machines:<100,3>,<95,91>,<94,92>,<94,90>,<93,92>"

"----Comparison for the 2 example----"

"\*\*\*tf from benchmark was 191(we added the number of machines) and target function from our bnb search is 191"

\*\*\*RESULT IS THE SAME

Run time: 0.011 seconds

"Correct (size-numberCorrect):" QMap((10, 3))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 3 from 60-----------------------------------------"

"--------------------START 4 from 60--------------------------------"

"input file number 4: inputName=C:/algo/h2/all2/NU\_1\_0010\_05\_3.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_1\_05\_0010\_3.txt"

"\*\*\*Data from file NU\_1\_0010\_05\_3.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_1\_05\_0010\_3.txt: machinesNum=5 jobsNum=10 lowerBound=188 upperBound=188 isOptimal=1"

Content of machines summed (188, 187, 104, 184, 183)

input selected: size 10 sum 846

----Our Results-------

"tf=193. Machines:<97,91>,<97,90>,<97,7>,<93,91>,<92,91>"

"----Comparison for the 3 example----"

"\*\*\*tf from benchmark was 193(we added the number of machines) and target function from our bnb search is 193"

\*\*\*RESULT IS THE SAME

Run time: 0.017 seconds

"Correct (size-numberCorrect):" QMap((10, 4))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 4 from 60-----------------------------------------"

"--------------------START 5 from 60--------------------------------"

"input file number 5: inputName=C:/algo/h2/all2/NU\_1\_0010\_05\_4.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_1\_05\_0010\_4.txt"

"\*\*\*Data from file NU\_1\_0010\_05\_4.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_1\_05\_0010\_4.txt: machinesNum=5 jobsNum=10 lowerBound=191 upperBound=191 isOptimal=1"

Content of machines summed (110, 189, 191, 190, 190)

input selected: size 10 sum 870

----Our Results-------

"tf=196. Machines:<100,91>,<98,93>,<97,94>,<97,10>,<95,95>"

"----Comparison for the 4 example----"

"\*\*\*tf from benchmark was 196(we added the number of machines) and target function from our bnb search is 196"

\*\*\*RESULT IS THE SAME

Run time: 0.011 seconds

"Correct (size-numberCorrect):" QMap((10, 5))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 5 from 60-----------------------------------------"

"--------------------START 6 from 60--------------------------------"

"input file number 6: inputName=C:/algo/h2/all2/NU\_1\_0010\_05\_5.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_1\_05\_0010\_5.txt"

"\*\*\*Data from file NU\_1\_0010\_05\_5.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_1\_05\_0010\_5.txt: machinesNum=5 jobsNum=10 lowerBound=189 upperBound=189 isOptimal=1"

Content of machines summed (113, 189, 188, 187, 187)

input selected: size 10 sum 864

----Our Results-------

"tf=194. Machines:<100,13>,<97,92>,<96,92>,<94,93>,<94,93>"

"----Comparison for the 5 example----"

"\*\*\*tf from benchmark was 194(we added the number of machines) and target function from our bnb search is 194"

\*\*\*RESULT IS THE SAME

Run time: 0.021 seconds

"Correct (size-numberCorrect):" QMap((10, 6))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 6 from 60-----------------------------------------"

"--------------------START 7 from 60--------------------------------"

"input file number 7: inputName=C:/algo/h2/all2/NU\_1\_0010\_05\_6.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_1\_05\_0010\_6.txt"

"\*\*\*Data from file NU\_1\_0010\_05\_6.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_1\_05\_0010\_6.txt: machinesNum=5 jobsNum=10 lowerBound=188 upperBound=188 isOptimal=1"

Content of machines summed (102, 188, 188, 188, 187)

input selected: size 10 sum 853

----Our Results-------

"tf=193. Machines:<99,3>,<98,90>,<96,92>,<95,93>,<95,92>"

"----Comparison for the 6 example----"

"\*\*\*tf from benchmark was 193(we added the number of machines) and target function from our bnb search is 193"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 7))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 7 from 60-----------------------------------------"

"--------------------START 8 from 60--------------------------------"

"input file number 8: inputName=C:/algo/h2/all2/NU\_1\_0010\_05\_7.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_1\_05\_0010\_7.txt"

"\*\*\*Data from file NU\_1\_0010\_05\_7.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_1\_05\_0010\_7.txt: machinesNum=5 jobsNum=10 lowerBound=190 upperBound=190 isOptimal=1"

Content of machines summed (119, 189, 188, 190, 189)

input selected: size 10 sum 875

----Our Results-------

"tf=195. Machines:<99,91>,<97,92>,<97,20>,<96,94>,<95,94>"

"----Comparison for the 7 example----"

"\*\*\*tf from benchmark was 195(we added the number of machines) and target function from our bnb search is 195"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 8))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 8 from 60-----------------------------------------"

"--------------------START 9 from 60--------------------------------"

"input file number 9: inputName=C:/algo/h2/all2/NU\_1\_0010\_05\_8.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_1\_05\_0010\_8.txt"

"\*\*\*Data from file NU\_1\_0010\_05\_8.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_1\_05\_0010\_8.txt: machinesNum=5 jobsNum=10 lowerBound=190 upperBound=190 isOptimal=1"

Content of machines summed (190, 113, 189, 189, 189)

input selected: size 10 sum 870

----Our Results-------

"tf=195. Machines:<100,90>,<100,13>,<98,91>,<95,94>,<95,94>"

"----Comparison for the 8 example----"

"\*\*\*tf from benchmark was 195(we added the number of machines) and target function from our bnb search is 195"

\*\*\*RESULT IS THE SAME

Run time: 0.015 seconds

"Correct (size-numberCorrect):" QMap((10, 9))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 9 from 60-----------------------------------------"

"--------------------START 10 from 60--------------------------------"

"input file number 10: inputName=C:/algo/h2/all2/NU\_1\_0010\_05\_9.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_1\_05\_0010\_9.txt"

"\*\*\*Data from file NU\_1\_0010\_05\_9.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_1\_05\_0010\_9.txt: machinesNum=5 jobsNum=10 lowerBound=190 upperBound=190 isOptimal=1"

Content of machines summed (189, 107, 190, 188, 190)

input selected: size 10 sum 864

----Our Results-------

"tf=195. Machines:<98,92>,<98,91>,<96,94>,<96,9>,<95,95>"

"----Comparison for the 9 example----"

"\*\*\*tf from benchmark was 195(we added the number of machines) and target function from our bnb search is 195"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 10))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 10 from 60-----------------------------------------"

"--------------------START 11 from 60--------------------------------"

"input file number 11: inputName=C:/algo/h2/all2/NU\_2\_0010\_05\_0.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_2\_05\_0010\_0.txt"

"\*\*\*Data from file NU\_2\_0010\_05\_0.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_2\_05\_0010\_0.txt: machinesNum=5 jobsNum=10 lowerBound=1918 upperBound=1918 isOptimal=1"

Content of machines summed (992, 1887, 1918, 1918, 1916)

input selected: size 10 sum 8631

----Our Results-------

"tf=1923. Machines:<990,905,2>,<982>,<973,945>,<967,951>,<960,956>"

"----Comparison for the 10 example----"

"\*\*\*tf from benchmark was 1923(we added the number of machines) and target function from our bnb search is 1923"

\*\*\*RESULT IS THE SAME

Run time: 0.01 seconds

"Correct (size-numberCorrect):" QMap((10, 11))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 11 from 60-----------------------------------------"

"--------------------START 12 from 60--------------------------------"

"input file number 12: inputName=C:/algo/h2/all2/NU\_2\_0010\_05\_1.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_2\_05\_0010\_1.txt"

"\*\*\*Data from file NU\_2\_0010\_05\_1.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_2\_05\_0010\_1.txt: machinesNum=5 jobsNum=10 lowerBound=1891 upperBound=1891 isOptimal=1"

Content of machines summed (1135, 1891, 1877, 1883, 1868)

input selected: size 10 sum 8654

----Our Results-------

"tf=1896. Machines:<993,142>,<989,902>,<975,902>,<970,913>,<938,930>"

"----Comparison for the 11 example----"

"\*\*\*tf from benchmark was 1896(we added the number of machines) and target function from our bnb search is 1896"

\*\*\*RESULT IS THE SAME

Run time: 0.014 seconds

"Correct (size-numberCorrect):" QMap((10, 12))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 12 from 60-----------------------------------------"

"--------------------START 13 from 60--------------------------------"

"input file number 13: inputName=C:/algo/h2/all2/NU\_2\_0010\_05\_2.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_2\_05\_0010\_2.txt"

"\*\*\*Data from file NU\_2\_0010\_05\_2.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_2\_05\_0010\_2.txt: machinesNum=5 jobsNum=10 lowerBound=1864 upperBound=1864 isOptimal=1"

Content of machines summed (1030, 1855, 1852, 1864, 1856)

input selected: size 10 sum 8457

----Our Results-------

"tf=1869. Machines:<1000,30>,<948,912>,<940,907>,<937,927>,<929,927>"

"----Comparison for the 12 example----"

"\*\*\*tf from benchmark was 1869(we added the number of machines) and target function from our bnb search is 1869"

\*\*\*RESULT IS THE SAME

Run time: 0.01 seconds

"Correct (size-numberCorrect):" QMap((10, 13))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 13 from 60-----------------------------------------"

"--------------------START 14 from 60--------------------------------"

"input file number 14: inputName=C:/algo/h2/all2/NU\_2\_0010\_05\_3.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_2\_05\_0010\_3.txt"

"\*\*\*Data from file NU\_2\_0010\_05\_3.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_2\_05\_0010\_3.txt: machinesNum=5 jobsNum=10 lowerBound=1879 upperBound=1879 isOptimal=1"

Content of machines summed (1875, 1035, 1879, 1839, 1834)

input selected: size 10 sum 8462

----Our Results-------

"tf=1884. Machines:<972,903>,<972,63>,<969,910>,<929,910>,<923,911>"

"----Comparison for the 13 example----"

"\*\*\*tf from benchmark was 1884(we added the number of machines) and target function from our bnb search is 1884"

\*\*\*RESULT IS THE SAME

Run time: 0.017 seconds

"Correct (size-numberCorrect):" QMap((10, 14))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 14 from 60-----------------------------------------"

"--------------------START 15 from 60--------------------------------"

"input file number 15: inputName=C:/algo/h2/all2/NU\_2\_0010\_05\_4.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_2\_05\_0010\_4.txt"

"\*\*\*Data from file NU\_2\_0010\_05\_4.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_2\_05\_0010\_4.txt: machinesNum=5 jobsNum=10 lowerBound=1904 upperBound=1904 isOptimal=1"

Content of machines summed (1093, 1891, 1901, 1904, 1902)

input selected: size 10 sum 8691

----Our Results-------

"tf=1909. Machines:<998,95>,<978,913>,<968,933>,<964,940>,<952,950>"

"----Comparison for the 14 example----"

"\*\*\*tf from benchmark was 1909(we added the number of machines) and target function from our bnb search is 1909"

\*\*\*RESULT IS THE SAME

Run time: 0.01 seconds

"Correct (size-numberCorrect):" QMap((10, 15))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 15 from 60-----------------------------------------"

"--------------------START 16 from 60--------------------------------"

"input file number 16: inputName=C:/algo/h2/all2/NU\_2\_0010\_05\_5.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_2\_05\_0010\_5.txt"

"\*\*\*Data from file NU\_2\_0010\_05\_5.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_2\_05\_0010\_5.txt: machinesNum=5 jobsNum=10 lowerBound=1885 upperBound=1885 isOptimal=1"

Content of machines summed (1121, 1885, 1880, 1869, 1870)

input selected: size 10 sum 8625

----Our Results-------

"tf=1890. Machines:<995,126>,<965,920>,<958,922>,<939,930>,<937,933>"

"----Comparison for the 15 example----"

"\*\*\*tf from benchmark was 1890(we added the number of machines) and target function from our bnb search is 1890"

\*\*\*RESULT IS THE SAME

Run time: 0.02 seconds

"Correct (size-numberCorrect):" QMap((10, 16))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 16 from 60-----------------------------------------"

"--------------------START 17 from 60--------------------------------"

"input file number 17: inputName=C:/algo/h2/all2/NU\_2\_0010\_05\_6.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_2\_05\_0010\_6.txt"

"\*\*\*Data from file NU\_2\_0010\_05\_6.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_2\_05\_0010\_6.txt: machinesNum=5 jobsNum=10 lowerBound=1885 upperBound=1885 isOptimal=1"

Content of machines summed (1006, 1875, 1876, 1876, 1885)

input selected: size 10 sum 8518

----Our Results-------

"tf=1890. Machines:<983,901>,<974,23>,<956,923>,<953,920>,<952,933>"

"----Comparison for the 16 example----"

"\*\*\*tf from benchmark was 1890(we added the number of machines) and target function from our bnb search is 1890"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 17))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 17 from 60-----------------------------------------"

"--------------------START 18 from 60--------------------------------"

"input file number 18: inputName=C:/algo/h2/all2/NU\_2\_0010\_05\_7.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_2\_05\_0010\_7.txt"

"\*\*\*Data from file NU\_2\_0010\_05\_7.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_2\_05\_0010\_7.txt: machinesNum=5 jobsNum=10 lowerBound=1902 upperBound=1902 isOptimal=1"

Content of machines summed (1187, 1884, 1886, 1902, 1893)

input selected: size 10 sum 8752

----Our Results-------

"tf=1907. Machines:<990,197>,<969,919>,<967,915>,<961,941>,<949,944>"

"----Comparison for the 17 example----"

"\*\*\*tf from benchmark was 1907(we added the number of machines) and target function from our bnb search is 1907"

\*\*\*RESULT IS THE SAME

Run time: 0.01 seconds

"Correct (size-numberCorrect):" QMap((10, 18))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 18 from 60-----------------------------------------"

"--------------------START 19 from 60--------------------------------"

"input file number 19: inputName=C:/algo/h2/all2/NU\_2\_0010\_05\_8.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_2\_05\_0010\_8.txt"

"\*\*\*Data from file NU\_2\_0010\_05\_8.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_2\_05\_0010\_8.txt: machinesNum=5 jobsNum=10 lowerBound=1896 upperBound=1896 isOptimal=1"

Content of machines summed (1124, 1896, 1888, 1888, 1888)

input selected: size 10 sum 8684

----Our Results-------

"tf=1901. Machines:<999,125>,<995,901>,<975,913>,<947,941>,<947,941>"

"----Comparison for the 18 example----"

"\*\*\*tf from benchmark was 1901(we added the number of machines) and target function from our bnb search is 1901"

\*\*\*RESULT IS THE SAME

Run time: 0.024 seconds

"Correct (size-numberCorrect):" QMap((10, 19))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 19 from 60-----------------------------------------"

"--------------------START 20 from 60--------------------------------"

"input file number 20: inputName=C:/algo/h2/all2/NU\_2\_0010\_05\_9.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_2\_05\_0010\_9.txt"

"\*\*\*Data from file NU\_2\_0010\_05\_9.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_2\_05\_0010\_9.txt: machinesNum=5 jobsNum=10 lowerBound=1902 upperBound=1902 isOptimal=1"

Content of machines summed (1889, 1066, 1888, 1902, 1900)

input selected: size 10 sum 8645

----Our Results-------

"tf=1907. Machines:<980,909>,<980,86>,<963,925>,<958,944>,<953,947>"

"----Comparison for the 19 example----"

"\*\*\*tf from benchmark was 1907(we added the number of machines) and target function from our bnb search is 1907"

\*\*\*RESULT IS THE SAME

Run time: 0.014 seconds

"Correct (size-numberCorrect):" QMap((10, 20))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 20 from 60-----------------------------------------"

"--------------------START 21 from 60--------------------------------"

"input file number 21: inputName=C:/algo/h2/all2/NU\_3\_0010\_05\_0.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_3\_05\_0010\_0.txt"

"\*\*\*Data from file NU\_3\_0010\_05\_0.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_3\_05\_0010\_0.txt: machinesNum=5 jobsNum=10 lowerBound=19186 upperBound=19186 isOptimal=1"

Content of machines summed (9913, 18873, 19186, 19177, 19158)

input selected: size 10 sum 86307

----Our Results-------

"tf=19191. Machines:<9901,9055,12>,<9818>,<9731,9455>,<9666,9511>,<9595,9563>"

"----Comparison for the 20 example----"

"\*\*\*tf from benchmark was 19191(we added the number of machines) and target function from our bnb search is 19191"

\*\*\*RESULT IS THE SAME

Run time: 0.012 seconds

"Correct (size-numberCorrect):" QMap((10, 21))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 21 from 60-----------------------------------------"

"--------------------START 22 from 60--------------------------------"

"input file number 22: inputName=C:/algo/h2/all2/NU\_3\_0010\_05\_1.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_3\_05\_0010\_1.txt"

"\*\*\*Data from file NU\_3\_0010\_05\_1.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_3\_05\_0010\_1.txt: machinesNum=5 jobsNum=10 lowerBound=18907 upperBound=18907 isOptimal=1"

Content of machines summed (11335, 18907, 18767, 18837, 18678)

input selected: size 10 sum 86524

----Our Results-------

"tf=18912. Machines:<9921,1414>,<9885,9022>,<9744,9023>,<9700,9137>,<9379,9299>"

"----Comparison for the 21 example----"

"\*\*\*tf from benchmark was 18912(we added the number of machines) and target function from our bnb search is 18912"

\*\*\*RESULT IS THE SAME

Run time: 0.016 seconds

"Correct (size-numberCorrect):" QMap((10, 22))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 22 from 60-----------------------------------------"

"--------------------START 23 from 60--------------------------------"

"input file number 23: inputName=C:/algo/h2/all2/NU\_3\_0010\_05\_2.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_3\_05\_0010\_2.txt"

"\*\*\*Data from file NU\_3\_0010\_05\_2.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_3\_05\_0010\_2.txt: machinesNum=5 jobsNum=10 lowerBound=18644 upperBound=18644 isOptimal=1"

Content of machines summed (10290, 18554, 18526, 18644, 18569)

input selected: size 10 sum 84583

----Our Results-------

"tf=18649. Machines:<9999,291>,<9476,9125>,<9401,9078>,<9373,9271>,<9297,9272>"

"----Comparison for the 22 example----"

"\*\*\*tf from benchmark was 18649(we added the number of machines) and target function from our bnb search is 18649"

\*\*\*RESULT IS THE SAME

Run time: 0.011 seconds

"Correct (size-numberCorrect):" QMap((10, 23))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 23 from 60-----------------------------------------"

"--------------------START 24 from 60--------------------------------"

"input file number 24: inputName=C:/algo/h2/all2/NU\_3\_0010\_05\_3.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_3\_05\_0010\_3.txt"

"\*\*\*Data from file NU\_3\_0010\_05\_3.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_3\_05\_0010\_3.txt: machinesNum=5 jobsNum=10 lowerBound=18793 upperBound=18793 isOptimal=1"

Content of machines summed (10351, 18750, 18793, 18393, 18349)

input selected: size 10 sum 84636

----Our Results-------

"tf=18798. Machines:<9721,9032>,<9718,630>,<9691,9102>,<9289,9104>,<9231,9118>"

"----Comparison for the 23 example----"

"\*\*\*tf from benchmark was 18798(we added the number of machines) and target function from our bnb search is 18798"

\*\*\*RESULT IS THE SAME

Run time: 0.017 seconds

"Correct (size-numberCorrect):" QMap((10, 24))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 24 from 60-----------------------------------------"

"--------------------START 25 from 60--------------------------------"

"input file number 25: inputName=C:/algo/h2/all2/NU\_3\_0010\_05\_4.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_3\_05\_0010\_4.txt"

"\*\*\*Data from file NU\_3\_0010\_05\_4.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_3\_05\_0010\_4.txt: machinesNum=5 jobsNum=10 lowerBound=19038 upperBound=19038 isOptimal=1"

Content of machines summed (10921, 18916, 19008, 19038, 19018)

input selected: size 10 sum 86901

----Our Results-------

"tf=19043. Machines:<9973,948>,<9781,9135>,<9676,9332>,<9638,9400>,<9519,9499>"

"----Comparison for the 24 example----"

"\*\*\*tf from benchmark was 19043(we added the number of machines) and target function from our bnb search is 19043"

\*\*\*RESULT IS THE SAME

Run time: 0.011 seconds

"Correct (size-numberCorrect):" QMap((10, 25))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 25 from 60-----------------------------------------"

"--------------------START 26 from 60--------------------------------"

"input file number 26: inputName=C:/algo/h2/all2/NU\_3\_0010\_05\_5.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_3\_05\_0010\_5.txt"

"\*\*\*Data from file NU\_3\_0010\_05\_5.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_3\_05\_0010\_5.txt: machinesNum=5 jobsNum=10 lowerBound=18856 upperBound=18856 isOptimal=1"

Content of machines summed (11204, 18856, 18803, 18691, 18698)

input selected: size 10 sum 86252

----Our Results-------

"tf=18861. Machines:<9946,1258>,<9651,9205>,<9579,9224>,<9390,9301>,<9368,9330>"

"----Comparison for the 25 example----"

"\*\*\*tf from benchmark was 18861(we added the number of machines) and target function from our bnb search is 18861"

\*\*\*RESULT IS THE SAME

Run time: 0.022 seconds

"Correct (size-numberCorrect):" QMap((10, 26))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 26 from 60-----------------------------------------"

"--------------------START 27 from 60--------------------------------"

"input file number 27: inputName=C:/algo/h2/all2/NU\_3\_0010\_05\_6.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_3\_05\_0010\_6.txt"

"\*\*\*Data from file NU\_3\_0010\_05\_6.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_3\_05\_0010\_6.txt: machinesNum=5 jobsNum=10 lowerBound=18856 upperBound=18856 isOptimal=1"

Content of machines summed (10055, 18753, 18764, 18764, 18856)

input selected: size 10 sum 85192

----Our Results-------

"tf=18861. Machines:<9826,9015>,<9738,229>,<9564,9232>,<9532,9200>,<9525,9331>"

"----Comparison for the 26 example----"

"\*\*\*tf from benchmark was 18861(we added the number of machines) and target function from our bnb search is 18861"

\*\*\*RESULT IS THE SAME

Run time: 0.01 seconds

"Correct (size-numberCorrect):" QMap((10, 27))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 27 from 60-----------------------------------------"

"--------------------START 28 from 60--------------------------------"

"input file number 28: inputName=C:/algo/h2/all2/NU\_3\_0010\_05\_7.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_3\_05\_0010\_7.txt"

"\*\*\*Data from file NU\_3\_0010\_05\_7.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_3\_05\_0010\_7.txt: machinesNum=5 jobsNum=10 lowerBound=19018 upperBound=19018 isOptimal=1"

Content of machines summed (11862, 18841, 18868, 19018, 18922)

input selected: size 10 sum 87511

----Our Results-------

"tf=19023. Machines:<9898,1964>,<9685,9196>,<9672,9156>,<9612,9406>,<9486,9436>"

"----Comparison for the 27 example----"

"\*\*\*tf from benchmark was 19023(we added the number of machines) and target function from our bnb search is 19023"

\*\*\*RESULT IS THE SAME

Run time: 0.014 seconds

"Correct (size-numberCorrect):" QMap((10, 28))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 28 from 60-----------------------------------------"

"--------------------START 29 from 60--------------------------------"

"input file number 29: inputName=C:/algo/h2/all2/NU\_3\_0010\_05\_8.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_3\_05\_0010\_8.txt"

"\*\*\*Data from file NU\_3\_0010\_05\_8.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_3\_05\_0010\_8.txt: machinesNum=5 jobsNum=10 lowerBound=18968 upperBound=18968 isOptimal=1"

Content of machines summed (11230, 18968, 18882, 18887, 18881)

input selected: size 10 sum 86848

----Our Results-------

"tf=18973. Machines:<9988,1242>,<9950,9018>,<9751,9131>,<9474,9413>,<9466,9415>"

"----Comparison for the 28 example----"

"\*\*\*tf from benchmark was 18973(we added the number of machines) and target function from our bnb search is 18973"

\*\*\*RESULT IS THE SAME

Run time: 0.029 seconds

"Correct (size-numberCorrect):" QMap((10, 29))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 29 from 60-----------------------------------------"

"--------------------START 30 from 60--------------------------------"

"input file number 30: inputName=C:/algo/h2/all2/NU\_3\_0010\_05\_9.txt and solutionName=C:/algo/h2/all2/SOL\_NU\_3\_05\_0010\_9.txt"

"\*\*\*Data from file NU\_3\_0010\_05\_9.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_NU\_3\_05\_0010\_9.txt: machinesNum=5 jobsNum=10 lowerBound=19014 upperBound=19014 isOptimal=1"

Content of machines summed (10653, 18891, 18884, 19014, 19003)

input selected: size 10 sum 86445

----Our Results-------

"tf=19019. Machines:<9798,9098>,<9793,855>,<9629,9255>,<9578,9436>,<9534,9469>"

"----Comparison for the 29 example----"

"\*\*\*tf from benchmark was 19019(we added the number of machines) and target function from our bnb search is 19019"

\*\*\*RESULT IS THE SAME

Run time: 0.011 seconds

"Correct (size-numberCorrect):" QMap((10, 30))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 30 from 60-----------------------------------------"

"--------------------START 31 from 60--------------------------------"

"input file number 31: inputName=C:/algo/h2/all2/U\_1\_0010\_05\_0.txt and solutionName=C:/algo/h2/all2/SOL\_U\_1\_05\_0010\_0.txt"

"\*\*\*Data from file U\_1\_0010\_05\_0.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_1\_05\_0010\_0.txt: machinesNum=5 jobsNum=10 lowerBound=101 upperBound=101 isOptimal=1"

Content of machines summed (92, 87, 94, 96, 101)

input selected: size 10 sum 470

----Our Results-------

"tf=106. Machines:<92,5,2>,<80>,<68,26>,<61,35>,<53,48>"

"----Comparison for the 30 example----"

"\*\*\*tf from benchmark was 106(we added the number of machines) and target function from our bnb search is 106"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 31))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 31 from 60-----------------------------------------"

"--------------------START 32 from 60--------------------------------"

"input file number 32: inputName=C:/algo/h2/all2/U\_1\_0010\_05\_1.txt and solutionName=C:/algo/h2/all2/SOL\_U\_1\_05\_0010\_1.txt"

"\*\*\*Data from file U\_1\_0010\_05\_1.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_1\_05\_0010\_1.txt: machinesNum=5 jobsNum=10 lowerBound=86 upperBound=86 isOptimal=1"

Content of machines summed (86, 78, 76, 75, 77)

input selected: size 10 sum 392

----Our Results-------

"tf=91. Machines:<86>,<67,11,4>,<52,33>,<44,40>,<31,24>"

"----Comparison for the 31 example----"

"\*\*\*tf from benchmark was 91(we added the number of machines) and target function from our bnb search is 91"

\*\*\*RESULT IS THE SAME

Run time: 0.004 seconds

"Correct (size-numberCorrect):" QMap((10, 32))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 32 from 60-----------------------------------------"

"--------------------START 33 from 60--------------------------------"

"input file number 33: inputName=C:/algo/h2/all2/U\_1\_0010\_05\_2.txt and solutionName=C:/algo/h2/all2/SOL\_U\_1\_05\_0010\_2.txt"

"\*\*\*Data from file U\_1\_0010\_05\_2.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_1\_05\_0010\_2.txt: machinesNum=5 jobsNum=10 lowerBound=116 upperBound=116 isOptimal=1"

Content of machines summed (111, 101, 116, 106, 116)

input selected: size 10 sum 550

----Our Results-------

"tf=121. Machines:<81,34>,<81,30>,<72,44>,<72,20>,<63,53>"

"----Comparison for the 32 example----"

"\*\*\*tf from benchmark was 121(we added the number of machines) and target function from our bnb search is 121"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 33))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 33 from 60-----------------------------------------"

"--------------------START 34 from 60--------------------------------"

"input file number 34: inputName=C:/algo/h2/all2/U\_1\_0010\_05\_3.txt and solutionName=C:/algo/h2/all2/SOL\_U\_1\_05\_0010\_3.txt"

"\*\*\*Data from file U\_1\_0010\_05\_3.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_1\_05\_0010\_3.txt: machinesNum=5 jobsNum=10 lowerBound=125 upperBound=125 isOptimal=1"

Content of machines summed (100, 125, 120, 112, 120)

input selected: size 10 sum 577

----Our Results-------

"tf=130. Machines:<97,3>,<85,40>,<78,42>,<68,44>,<62,58>"

"----Comparison for the 33 example----"

"\*\*\*tf from benchmark was 130(we added the number of machines) and target function from our bnb search is 130"

\*\*\*RESULT IS THE SAME

Run time: 0.015 seconds

"Correct (size-numberCorrect):" QMap((10, 34))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 34 from 60-----------------------------------------"

"--------------------START 35 from 60--------------------------------"

"input file number 35: inputName=C:/algo/h2/all2/U\_1\_0010\_05\_4.txt and solutionName=C:/algo/h2/all2/SOL\_U\_1\_05\_0010\_4.txt"

"\*\*\*Data from file U\_1\_0010\_05\_4.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_1\_05\_0010\_4.txt: machinesNum=5 jobsNum=10 lowerBound=89 upperBound=89 isOptimal=1"

Content of machines summed (69, 76, 68, 80, 89)

input selected: size 10 sum 382

----Our Results-------

"tf=94. Machines:<65,14,4>,<63,13>,<54,28>,<52>,<50,39>"

"----Comparison for the 34 example----"

"\*\*\*tf from benchmark was 94(we added the number of machines) and target function from our bnb search is 94"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 35))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 35 from 60-----------------------------------------"

"--------------------START 36 from 60--------------------------------"

"input file number 36: inputName=C:/algo/h2/all2/U\_1\_0010\_05\_5.txt and solutionName=C:/algo/h2/all2/SOL\_U\_1\_05\_0010\_5.txt"

"\*\*\*Data from file U\_1\_0010\_05\_5.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_1\_05\_0010\_5.txt: machinesNum=5 jobsNum=10 lowerBound=121 upperBound=121 isOptimal=1"

Content of machines summed (95, 95, 109, 109, 121)

input selected: size 10 sum 529

----Our Results-------

"tf=126. Machines:<95,6,4>,<85,32>,<79,30>,<77>,<69,52>"

"----Comparison for the 35 example----"

"\*\*\*tf from benchmark was 126(we added the number of machines) and target function from our bnb search is 126"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 36))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 36 from 60-----------------------------------------"

"--------------------START 37 from 60--------------------------------"

"input file number 37: inputName=C:/algo/h2/all2/U\_1\_0010\_05\_6.txt and solutionName=C:/algo/h2/all2/SOL\_U\_1\_05\_0010\_6.txt"

"\*\*\*Data from file U\_1\_0010\_05\_6.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_1\_05\_0010\_6.txt: machinesNum=5 jobsNum=10 lowerBound=113 upperBound=113 isOptimal=1"

Content of machines summed (113, 113, 108, 92, 83)

input selected: size 10 sum 509

----Our Results-------

"tf=118. Machines:<93,10,5>,<92>,<83>,<67,46>,<40,39,34>"

"----Comparison for the 36 example----"

"\*\*\*tf from benchmark was 118(we added the number of machines) and target function from our bnb search is 118"

\*\*\*RESULT IS THE SAME

Run time: 0.014 seconds

"Correct (size-numberCorrect):" QMap((10, 37))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 37 from 60-----------------------------------------"

"--------------------START 38 from 60--------------------------------"

"input file number 38: inputName=C:/algo/h2/all2/U\_1\_0010\_05\_7.txt and solutionName=C:/algo/h2/all2/SOL\_U\_1\_05\_0010\_7.txt"

"\*\*\*Data from file U\_1\_0010\_05\_7.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_1\_05\_0010\_7.txt: machinesNum=5 jobsNum=10 lowerBound=99 upperBound=99 isOptimal=1"

Content of machines summed (99, 90, 88, 93, 93)

input selected: size 10 sum 463

----Our Results-------

"tf=104. Machines:<99>,<90>,<68,26>,<63,20,11>,<56,20,10>"

"----Comparison for the 37 example----"

"\*\*\*tf from benchmark was 104(we added the number of machines) and target function from our bnb search is 104"

\*\*\*RESULT IS THE SAME

Run time: 0.004 seconds

"Correct (size-numberCorrect):" QMap((10, 38))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 38 from 60-----------------------------------------"

"--------------------START 39 from 60--------------------------------"

"input file number 39: inputName=C:/algo/h2/all2/U\_1\_0010\_05\_8.txt and solutionName=C:/algo/h2/all2/SOL\_U\_1\_05\_0010\_8.txt"

"\*\*\*Data from file U\_1\_0010\_05\_8.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_1\_05\_0010\_8.txt: machinesNum=5 jobsNum=10 lowerBound=116 upperBound=116 isOptimal=1"

Content of machines summed (100, 106, 102, 112, 116)

input selected: size 10 sum 536

----Our Results-------

"tf=121. Machines:<91,17>,<90,16,9>,<85>,<69,43>,<66,50>"

"----Comparison for the 38 example----"

"\*\*\*tf from benchmark was 121(we added the number of machines) and target function from our bnb search is 121"

\*\*\*RESULT IS THE SAME

Run time: 0.01 seconds

"Correct (size-numberCorrect):" QMap((10, 39))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 39 from 60-----------------------------------------"

"--------------------START 40 from 60--------------------------------"

"input file number 40: inputName=C:/algo/h2/all2/U\_1\_0010\_05\_9.txt and solutionName=C:/algo/h2/all2/SOL\_U\_1\_05\_0010\_9.txt"

"\*\*\*Data from file U\_1\_0010\_05\_9.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_1\_05\_0010\_9.txt: machinesNum=5 jobsNum=10 lowerBound=104 upperBound=104 isOptimal=1"

Content of machines summed (85, 97, 104, 94, 86)

input selected: size 10 sum 466

----Our Results-------

"tf=109. Machines:<80,5>,<69,28>,<68,36>,<53,41>,<43,43>"

"----Comparison for the 39 example----"

"\*\*\*tf from benchmark was 109(we added the number of machines) and target function from our bnb search is 109"

\*\*\*RESULT IS THE SAME

Run time: 0.035 seconds

"Correct (size-numberCorrect):" QMap((10, 40))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 40 from 60-----------------------------------------"

"--------------------START 41 from 60--------------------------------"

"input file number 41: inputName=C:/algo/h2/all2/U\_2\_0010\_05\_0.txt and solutionName=C:/algo/h2/all2/SOL\_U\_2\_05\_0010\_0.txt"

"\*\*\*Data from file U\_2\_0010\_05\_0.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_2\_05\_0010\_0.txt: machinesNum=5 jobsNum=10 lowerBound=1354 upperBound=1354 isOptimal=1"

Content of machines summed (1149, 1155, 1290, 1354, 1255)

input selected: size 10 sum 6203

----Our Results-------

"tf=1359. Machines:<973,230>,<925,176>,<859,431>,<837,517>,<696,559>"

"----Comparison for the 40 example----"

"\*\*\*tf from benchmark was 1359(we added the number of machines) and target function from our bnb search is 1359"

\*\*\*RESULT IS THE SAME

Run time: 0.011 seconds

"Correct (size-numberCorrect):" QMap((10, 41))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 41 from 60-----------------------------------------"

"--------------------START 42 from 60--------------------------------"

"input file number 42: inputName=C:/algo/h2/all2/U\_2\_0010\_05\_1.txt and solutionName=C:/algo/h2/all2/SOL\_U\_2\_05\_0010\_1.txt"

"\*\*\*Data from file U\_2\_0010\_05\_1.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_2\_05\_0010\_1.txt: machinesNum=5 jobsNum=10 lowerBound=1108 upperBound=1108 isOptimal=1"

Content of machines summed (957, 905, 898, 1106, 1108)

input selected: size 10 sum 4974

----Our Results-------

"tf=1113. Machines:<957,107,30>,<858,17>,<791>,<620,486>,<608,500>"

"----Comparison for the 41 example----"

"\*\*\*tf from benchmark was 1113(we added the number of machines) and target function from our bnb search is 1113"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 42))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 42 from 60-----------------------------------------"

"--------------------START 43 from 60--------------------------------"

"input file number 43: inputName=C:/algo/h2/all2/U\_2\_0010\_05\_2.txt and solutionName=C:/algo/h2/all2/SOL\_U\_2\_05\_0010\_2.txt"

"\*\*\*Data from file U\_2\_0010\_05\_2.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_2\_05\_0010\_2.txt: machinesNum=5 jobsNum=10 lowerBound=961 upperBound=961 isOptimal=1"

Content of machines summed (961, 953, 844, 932, 876)

input selected: size 10 sum 4566

----Our Results-------

"tf=966. Machines:<961>,<953>,<787,172>,<542,391>,<292,218,193,57>"

"----Comparison for the 42 example----"

"\*\*\*tf from benchmark was 966(we added the number of machines) and target function from our bnb search is 966"

\*\*\*RESULT IS THE SAME

Run time: 0.005 seconds

"Correct (size-numberCorrect):" QMap((10, 43))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 43 from 60-----------------------------------------"

"--------------------START 44 from 60--------------------------------"

"input file number 44: inputName=C:/algo/h2/all2/U\_2\_0010\_05\_3.txt and solutionName=C:/algo/h2/all2/SOL\_U\_2\_05\_0010\_3.txt"

"\*\*\*Data from file U\_2\_0010\_05\_3.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_2\_05\_0010\_3.txt: machinesNum=5 jobsNum=10 lowerBound=1127 upperBound=1127 isOptimal=1"

Content of machines summed (1046, 1117, 1093, 1127, 1083)

input selected: size 10 sum 5466

----Our Results-------

"tf=1132. Machines:<985,61>,<825,292>,<788,305>,<656,471>,<597,486>"

"----Comparison for the 43 example----"

"\*\*\*tf from benchmark was 1132(we added the number of machines) and target function from our bnb search is 1132"

\*\*\*RESULT IS THE SAME

Run time: 0.011 seconds

"Correct (size-numberCorrect):" QMap((10, 44))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 44 from 60-----------------------------------------"

"--------------------START 45 from 60--------------------------------"

"input file number 45: inputName=C:/algo/h2/all2/U\_2\_0010\_05\_4.txt and solutionName=C:/algo/h2/all2/SOL\_U\_2\_05\_0010\_4.txt"

"\*\*\*Data from file U\_2\_0010\_05\_4.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_2\_05\_0010\_4.txt: machinesNum=5 jobsNum=10 lowerBound=782 upperBound=782 isOptimal=1"

Content of machines summed (782, 631, 665, 657, 684)

input selected: size 10 sum 3419

----Our Results-------

"tf=787. Machines:<782>,<631,103,36>,<629>,<369,279>,<245,185,160>"

"----Comparison for the 44 example----"

"\*\*\*tf from benchmark was 787(we added the number of machines) and target function from our bnb search is 787"

\*\*\*RESULT IS THE SAME

Run time: 0.004 seconds

"Correct (size-numberCorrect):" QMap((10, 45))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 45 from 60-----------------------------------------"

"--------------------START 46 from 60--------------------------------"

"input file number 46: inputName=C:/algo/h2/all2/U\_2\_0010\_05\_5.txt and solutionName=C:/algo/h2/all2/SOL\_U\_2\_05\_0010\_5.txt"

"\*\*\*Data from file U\_2\_0010\_05\_5.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_2\_05\_0010\_5.txt: machinesNum=5 jobsNum=10 lowerBound=939 upperBound=939 isOptimal=1"

Content of machines summed (916, 902, 812, 798, 939)

input selected: size 10 sum 4367

----Our Results-------

"tf=944. Machines:<916,6>,<902>,<556,249,131>,<543,125>,<515,424>"

"----Comparison for the 45 example----"

"\*\*\*tf from benchmark was 944(we added the number of machines) and target function from our bnb search is 944"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 46))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 46 from 60-----------------------------------------"

"--------------------START 47 from 60--------------------------------"

"input file number 47: inputName=C:/algo/h2/all2/U\_2\_0010\_05\_6.txt and solutionName=C:/algo/h2/all2/SOL\_U\_2\_05\_0010\_6.txt"

"\*\*\*Data from file U\_2\_0010\_05\_6.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_2\_05\_0010\_6.txt: machinesNum=5 jobsNum=10 lowerBound=760 upperBound=760 isOptimal=1"

Content of machines summed (760, 608, 559, 539, 569)

input selected: size 10 sum 3035

----Our Results-------

"tf=765. Machines:<760>,<608,140>,<453,62,60,46,46>,<431>,<429>"

"----Comparison for the 46 example----"

"\*\*\*tf from benchmark was 765(we added the number of machines) and target function from our bnb search is 765"

\*\*\*RESULT IS THE SAME

Run time: 0.004 seconds

"Correct (size-numberCorrect):" QMap((10, 47))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 47 from 60-----------------------------------------"

"--------------------START 48 from 60--------------------------------"

"input file number 48: inputName=C:/algo/h2/all2/U\_2\_0010\_05\_7.txt and solutionName=C:/algo/h2/all2/SOL\_U\_2\_05\_0010\_7.txt"

"\*\*\*Data from file U\_2\_0010\_05\_7.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_2\_05\_0010\_7.txt: machinesNum=5 jobsNum=10 lowerBound=1202 upperBound=1202 isOptimal=1"

Content of machines summed (1066, 1127, 1115, 1117, 1202)

input selected: size 10 sum 5627

----Our Results-------

"tf=1207. Machines:<950,195>,<932,116>,<798,317>,<637,480>,<624,578>"

"----Comparison for the 47 example----"

"\*\*\*tf from benchmark was 1207(we added the number of machines) and target function from our bnb search is 1207"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 48))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 48 from 60-----------------------------------------"

"--------------------START 49 from 60--------------------------------"

"input file number 49: inputName=C:/algo/h2/all2/U\_2\_0010\_05\_8.txt and solutionName=C:/algo/h2/all2/SOL\_U\_2\_05\_0010\_8.txt"

"\*\*\*Data from file U\_2\_0010\_05\_8.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_2\_05\_0010\_8.txt: machinesNum=5 jobsNum=10 lowerBound=1390 upperBound=1390 isOptimal=1"

Content of machines summed (1112, 1390, 1307, 1316, 1240)

input selected: size 10 sum 6365

----Our Results-------

"tf=1395. Machines:<999,113>,<896,494>,<792,515>,<724,592>,<623,617>"

"----Comparison for the 48 example----"

"\*\*\*tf from benchmark was 1395(we added the number of machines) and target function from our bnb search is 1395"

\*\*\*RESULT IS THE SAME

Run time: 0.029 seconds

"Correct (size-numberCorrect):" QMap((10, 49))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 49 from 60-----------------------------------------"

"--------------------START 50 from 60--------------------------------"

"input file number 50: inputName=C:/algo/h2/all2/U\_2\_0010\_05\_9.txt and solutionName=C:/algo/h2/all2/SOL\_U\_2\_05\_0010\_9.txt"

"\*\*\*Data from file U\_2\_0010\_05\_9.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_2\_05\_0010\_9.txt: machinesNum=5 jobsNum=10 lowerBound=1144 upperBound=1144 isOptimal=1"

Content of machines summed (957, 1018, 939, 1144, 1087)

input selected: size 10 sum 5145

----Our Results-------

"tf=1149. Machines:<858,193>,<841,177,99>,<746>,<728,416>,<622,465>"

"----Comparison for the 49 example----"

"\*\*\*tf from benchmark was 1149(we added the number of machines) and target function from our bnb search is 1149"

\*\*\*RESULT IS THE SAME

Run time: 0.01 seconds

"Correct (size-numberCorrect):" QMap((10, 50))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 50 from 60-----------------------------------------"

"--------------------START 51 from 60--------------------------------"

"input file number 51: inputName=C:/algo/h2/all2/U\_3\_0010\_05\_0.txt and solutionName=C:/algo/h2/all2/SOL\_U\_3\_05\_0010\_0.txt"

"\*\*\*Data from file U\_3\_0010\_05\_0.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_3\_05\_0010\_0.txt: machinesNum=5 jobsNum=10 lowerBound=13547 upperBound=13547 isOptimal=1"

Content of machines summed (11493, 11553, 12900, 13547, 12550)

input selected: size 10 sum 62043

----Our Results-------

"tf=13552. Machines:<9731,2303>,<9250,1762>,<8593,4307>,<8377,5170>,<6957,5593>"

"----Comparison for the 50 example----"

"\*\*\*tf from benchmark was 13552(we added the number of machines) and target function from our bnb search is 13552"

\*\*\*RESULT IS THE SAME

Run time: 0.011 seconds

"Correct (size-numberCorrect):" QMap((10, 51))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 51 from 60-----------------------------------------"

"--------------------START 52 from 60--------------------------------"

"input file number 52: inputName=C:/algo/h2/all2/U\_3\_0010\_05\_1.txt and solutionName=C:/algo/h2/all2/SOL\_U\_3\_05\_0010\_1.txt"

"\*\*\*Data from file U\_3\_0010\_05\_1.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_3\_05\_0010\_1.txt: machinesNum=5 jobsNum=10 lowerBound=12344 upperBound=12344 isOptimal=1"

Content of machines summed (10634, 12344, 11737, 11805, 11984)

input selected: size 10 sum 58504

----Our Results-------

"tf=12349. Machines:<8851,1783>,<8586,3758>,<7235,4502>,<6846,4959>,<6493,5491>"

"----Comparison for the 51 example----"

"\*\*\*tf from benchmark was 12349(we added the number of machines) and target function from our bnb search is 12349"

\*\*\*RESULT IS THE SAME

Run time: 0.022 seconds

"Correct (size-numberCorrect):" QMap((10, 52))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 52 from 60-----------------------------------------"

"--------------------START 53 from 60--------------------------------"

"input file number 53: inputName=C:/algo/h2/all2/U\_3\_0010\_05\_2.txt and solutionName=C:/algo/h2/all2/SOL\_U\_3\_05\_0010\_2.txt"

"\*\*\*Data from file U\_3\_0010\_05\_2.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_3\_05\_0010\_2.txt: machinesNum=5 jobsNum=10 lowerBound=10520 upperBound=10520 isOptimal=1"

Content of machines summed (9366, 9016, 8813, 8961, 10520)

input selected: size 10 sum 46676

----Our Results-------

"tf=10525. Machines:<8447,1486>,<7959,1188,1057>,<7625,919>,<7475>,<6696,3824>"

"----Comparison for the 52 example----"

"\*\*\*tf from benchmark was 10525(we added the number of machines) and target function from our bnb search is 10525"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 53))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 53 from 60-----------------------------------------"

"--------------------START 54 from 60--------------------------------"

"input file number 54: inputName=C:/algo/h2/all2/U\_3\_0010\_05\_3.txt and solutionName=C:/algo/h2/all2/SOL\_U\_3\_05\_0010\_3.txt"

"\*\*\*Data from file U\_3\_0010\_05\_3.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_3\_05\_0010\_3.txt: machinesNum=5 jobsNum=10 lowerBound=8513 upperBound=8513 isOptimal=1"

Content of machines summed (8513, 7020, 7043, 6543, 8167)

input selected: size 10 sum 37286

----Our Results-------

"tf=8518. Machines:<8513>,<5858,1656,621>,<5107,1315,1162>,<4887>,<4096,4071>"

"----Comparison for the 53 example----"

"\*\*\*tf from benchmark was 8518(we added the number of machines) and target function from our bnb search is 8518"

\*\*\*RESULT IS THE SAME

Run time: 0.004 seconds

"Correct (size-numberCorrect):" QMap((10, 54))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 54 from 60-----------------------------------------"

"--------------------START 55 from 60--------------------------------"

"input file number 55: inputName=C:/algo/h2/all2/U\_3\_0010\_05\_4.txt and solutionName=C:/algo/h2/all2/SOL\_U\_3\_05\_0010\_4.txt"

"\*\*\*Data from file U\_3\_0010\_05\_4.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_3\_05\_0010\_4.txt: machinesNum=5 jobsNum=10 lowerBound=10828 upperBound=10828 isOptimal=1"

Content of machines summed (9454, 10633, 10828, 10091, 10419)

input selected: size 10 sum 51425

----Our Results-------

"tf=10833. Machines:<9454>,<8814,1819>,<7232,3596>,<5185,4906>,<3919,3784,2716>"

"----Comparison for the 54 example----"

"\*\*\*tf from benchmark was 10833(we added the number of machines) and target function from our bnb search is 10833"

\*\*\*RESULT IS THE SAME

Run time: 0.018 seconds

"Correct (size-numberCorrect):" QMap((10, 55))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 55 from 60-----------------------------------------"

"--------------------START 56 from 60--------------------------------"

"input file number 56: inputName=C:/algo/h2/all2/U\_3\_0010\_05\_5.txt and solutionName=C:/algo/h2/all2/SOL\_U\_3\_05\_0010\_5.txt"

"\*\*\*Data from file U\_3\_0010\_05\_5.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_3\_05\_0010\_5.txt: machinesNum=5 jobsNum=10 lowerBound=11056 upperBound=11056 isOptimal=1"

Content of machines summed (10667, 10697, 8970, 9396, 11056)

input selected: size 10 sum 50786

----Our Results-------

"tf=11061. Machines:<8956,1711>,<8547,2295>,<6675,3036>,<6360,2150>,<6324,4732>"

"----Comparison for the 55 example----"

"\*\*\*tf from benchmark was 11061(we added the number of machines) and target function from our bnb search is 11061"

\*\*\*RESULT IS THE SAME

Run time: 0.01 seconds

"Correct (size-numberCorrect):" QMap((10, 56))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 56 from 60-----------------------------------------"

"--------------------START 57 from 60--------------------------------"

"input file number 57: inputName=C:/algo/h2/all2/U\_3\_0010\_05\_6.txt and solutionName=C:/algo/h2/all2/SOL\_U\_3\_05\_0010\_6.txt"

"\*\*\*Data from file U\_3\_0010\_05\_6.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_3\_05\_0010\_6.txt: machinesNum=5 jobsNum=10 lowerBound=11575 upperBound=11575 isOptimal=1"

Content of machines summed (9943, 11426, 11575, 10166, 10923)

input selected: size 10 sum 54033

----Our Results-------

"tf=11580. Machines:<9943,1139>,<9621,1805>,<9580,1995>,<8070,2096>,<5665,4119>"

"----Comparison for the 56 example----"

"\*\*\*tf from benchmark was 11580(we added the number of machines) and target function from our bnb search is 11580"

\*\*\*RESULT IS THE SAME

Run time: 0.012 seconds

"Correct (size-numberCorrect):" QMap((10, 57))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 57 from 60-----------------------------------------"

"--------------------START 58 from 60--------------------------------"

"input file number 58: inputName=C:/algo/h2/all2/U\_3\_0010\_05\_7.txt and solutionName=C:/algo/h2/all2/SOL\_U\_3\_05\_0010\_7.txt"

"\*\*\*Data from file U\_3\_0010\_05\_7.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_3\_05\_0010\_7.txt: machinesNum=5 jobsNum=10 lowerBound=14233 upperBound=14233 isOptimal=1"

Content of machines summed (10016, 12162, 14233, 14098, 13379)

input selected: size 10 sum 63888

----Our Results-------

"tf=14238. Machines:<9965,2650,51>,<9512>,<8770,5463>,<7785,6313>,<6981,6398>"

"----Comparison for the 57 example----"

"\*\*\*tf from benchmark was 14238(we added the number of machines) and target function from our bnb search is 14238"

\*\*\*RESULT IS THE SAME

Run time: 0.014 seconds

"Correct (size-numberCorrect):" QMap((10, 58))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 58 from 60-----------------------------------------"

"--------------------START 59 from 60--------------------------------"

"input file number 59: inputName=C:/algo/h2/all2/U\_3\_0010\_05\_8.txt and solutionName=C:/algo/h2/all2/SOL\_U\_3\_05\_0010\_8.txt"

"\*\*\*Data from file U\_3\_0010\_05\_8.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_3\_05\_0010\_8.txt: machinesNum=5 jobsNum=10 lowerBound=12749 upperBound=12749 isOptimal=1"

Content of machines summed (9968, 10246, 12749, 12417, 12614)

input selected: size 10 sum 57994

----Our Results-------

"tf=12754. Machines:<9347,910,621>,<9336>,<8314,4435>,<7863,4554>,<7643,4971>"

"----Comparison for the 58 example----"

"\*\*\*tf from benchmark was 12754(we added the number of machines) and target function from our bnb search is 12754"

\*\*\*RESULT IS THE SAME

Run time: 0.011 seconds

"Correct (size-numberCorrect):" QMap((10, 59))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 59 from 60-----------------------------------------"

"--------------------START 60 from 60--------------------------------"

"input file number 60: inputName=C:/algo/h2/all2/U\_3\_0010\_05\_9.txt and solutionName=C:/algo/h2/all2/SOL\_U\_3\_05\_0010\_9.txt"

"\*\*\*Data from file U\_3\_0010\_05\_9.txt: machinesNum=5 jobsNum=10"

"\*\*\*SOLUTION Data from file SOL\_U\_3\_05\_0010\_9.txt: machinesNum=5 jobsNum=10 lowerBound=13586 upperBound=13586 isOptimal=1"

Content of machines summed (10223, 10781, 10468, 12897, 13586)

input selected: size 10 sum 57955

----Our Results-------

"tf=13591. Machines:<9743,1376,1050,480>,<9731>,<9092>,<8389,4508>,<7662,5924>"

"----Comparison for the 59 example----"

"\*\*\*tf from benchmark was 13591(we added the number of machines) and target function from our bnb search is 13591"

\*\*\*RESULT IS THE SAME

Run time: 0.009 seconds

"Correct (size-numberCorrect):" QMap((10, 60))

"Mistakes(size-numberMistakes):" QMap()

"Avegare error: 0"

"-----------END 60 from 60-----------------------------------------"

"Correct (size-numberCorrect):" QMap((10, 60))

"Mistakes(size-numberMistakes):" QMap()

"Total Avegare error: 0"

"Total time: 0.874 seconds"