

ĐẠI HỌC QUỐC GIA THÀNH PHỐ HỒ CHÍ MINH
TRƯỜNG ĐẠI HỌC CÔNG NGHỆ THÔNG TIN



TRÍ TUỆ NHÂN TẠO

BT3: Knapsack

GVHD: Lương Ngọc Hoàng

Lớp: CS106.O21

Tên: Lê Minh Nhựt

MSSV: 22521060

Bảng so sánh các nhóm testcase

Tên Testcase	Giá trị	Tổng trọng lượng	Tối ưu
00Uncorrelated			
/n00050/R10000/s023.kp	184146	136791	✓
/n00100/R10000/s023.kp	397170	243454	✓
/n00200/R10000/s023.kp	791932	525855	✓
/n00500/R10000/s018.kp	2042604	1244410	✓
/n01000/R01000/s060.kp	396658	254485	✓
/n02000/R10000/s087.kp	7930410	5034713	✓
/n05000/R10000/s003.kp	20171425	12456172	✓
/n10000/R01000/s068.kp	4119623	2456211	✓
01WeaklyCorrelated			
/n00050/R01000/s003.kp	14805	13206	✓
/n00100/R01000/s003.kp	29073	26809	✓
/n00200/R01000/s003.kp	55912	50852	✓
/n00500/R01000/s001.kp	138098	123764	✓
/n01000/R10000/s021.kp	2754845	2494424	✓
/n02000/R10000/s075.kp	5453486	4928687	✓

/n05000/R01000/s010.kp	1370823	1244058	✓
/n10000/R10000/s031.kp	27624962	25008094	✓
02StronglyCorrelated			
/n00050/R10000/s037.kp	160943	126943	✓
/n00100/R01000/s097.kp	31950	24950	✓
/n00200/R01000/s018.kp	64093	50193	x
/n00500/R10000/s051.kp	1607734	1257734	x
/n01000/R01000/s002.kp	319438	249438	x
/n02000/R10000/s017.kp	6372264	4965264	x
/n05000/R10000/s017.kp	15920402	12417402	x
/n10000/R10000/s017.kp	31707235	24675235	x
03InverseStronglyCorrelated			
/n00050/R01000/s054.kp	13485	15085	✓
/n00100/R10000/s011.kp	253403	283403	✓
/n00200/R01000/s025.kp	51376	57576	x
/n00500/R10000/s019.kp	1314892	1471892	x
/n01000/R10000/s012.kp	2671635	2988635	x
/n02000/R10000/s061.kp	5247561	5869561	x
/n05000/R10000/s061.kp	13250017	14824017	x

/n10000/R10000/s061.kp	26483279	29629279	x
04AlmostStronglyCorrelated			
/n00050/R10000/s012.kp	151166	116207	✓
/n00100/R10000/s030.kp	326671	258739	✓
/n00200/R01000/s000.kp	65385	51563	x
/n00500/R10000/s011.kp	1613683	1264582	x
/n01000/R10000/s064.kp	3178169	2474163	x
/n02000/R01000/s096.kp	642360	502977	x
/n05000/R01000/s096.kp	1594805	1244484	✓
/n05000/R10000/s057.kp	15920682	12402028	x
/n10000/R01000/s096.kp	3179459	2477295	x
05SubsetSum			
/n00050/R01000/s055.kp	12087	12087	✓
/n00100/R01000/s055.kp	24611	24611	✓
/n00200/R01000/s055.kp	50287	50287	✓
/n00500/R01000/s033.kp	123559	123559	✓
/n01000/R10000/s006.kp	2421639	2421639	✓
/n02000/R10000/s012.kp	4949949	4949949	✓
/n05000/R10000/s017.kp	12422197	12422197	✓

/n10000/R01000/s053.kp	2481670	2481670	✓
06UncorrelatedWithSimilarWeights			
/n00050/R10000/s033.kp	17986	2401011	✓
/n00100/R10000/s033.kp	34555	4902246	✓
/n00200/R01000/s006.kp	77104	9904960	✓
/n00500/R01000/s013.kp	182925	24711920	x
/n01000/R01000/s021.kp	372392	49525290	✓
/n02000/R01000/s032.kp	747346	99049431	x
/n05000/R10000/s033.kp	1864185	247622510	x
/n10000/R10000/s033.kp	3721351	495247754	x
07SpannerUncorrelated			
/n00050/R10000/s022.kp	132354	77314	✓
/n00100/R01000/s017.kp	24400	16138	x
/n00200/R10000/s013.kp	282842	350488	x
/n00500/R10000/s011.kp	868038	851220	x
/n01000/R10000/s055.kp	1448928	1126944	x
/n02000/R01000/s000.kp	459560	168004	x
/n05000/R01000/s000.kp	1131684	413019	x
/n10000/R01000/s000.kp	2283100	834925	x

08SpannerWeaklyCorrelated			
/n00050/R01000/s000.kp	10354	11452	✓
/n00100/R10000/s005.kp	389766	166478	x
/n00200/R10000/s011.kp	715572	253737	x
/n00500/R10000/s007.kp	824454	287532	x
/n01000/R01000/s047.kp	177516	97248	x
/n02000/R01000/s017.kp	833689	323136	x
/n05000/R01000/s017.kp	2089817	809832	x
/n10000/R01000/s017.kp	4171773	1617006	x
09SpannerStronglyCorrelated			
/n00050/R01000/s008.kp	20800	5700	✓
/n00100/R01000/s003.kp	50089	9989	x
/n00200/R10000/s027.kp	954264	354264	x
/n00500/R01000/s015.kp	273964	63764	x
/n01000/R01000/s036.kp	549879	164779	x
/n02000/R10000/s046.kp	10166440	3214440	x
/n05000/R10000/s046.kp	25365825	7974825	x
/n10000/R10000/s046.kp	50697277	15878277	x
10MultipleStronglyCorrelated			

/n00050/R10000/s000.kp	217265	142265	✓
/n00100/R01000/s000.kp	43316	29016	✓
/n00200/R01000/s005.kp	84200	53100	x
/n00500/R10000/s008.kp	2043422	1282422	x
/n01000/R01000/s028.kp	403428	249228	x
/n02000/R10000/s027.kp	8123212	5053212	x
/n05000/R10000/s027.kp	20282796	12588796	x
/n10000/R10000/s027.kp	40373407	25001407	x
11ProfitCeiling			
/n00050/R10000/s003.kp	132021	132031	✓
/n00100/R10000/s004.kp	238599	238613	✓
/n00200/R01000/s028.kp	45834	45854	✓
/n00500/R10000/s048.kp	1312527	1312573	x
/n01000/R01000/s027.kp	259026	259127	x
/n02000/R01000/s051.kp	498192	498374	x
/n05000/R01000/s051.kp	1250013	1250449	x
/n10000/R01000/s051.kp	2495064	2495937	x
12Circle			
/n00050/R01000/s005.kp	268001	12719	✓

/n00100/R010000/s000.kp	19329757	289961	✓
/n00200/R01000/s017.kp	1075229	51029	✓
/n00500/R01000/s001.kp	2607828	123764	x
/n01000/R01000/s019.kp	5034768	238944	x
/n02000/R01000/s034.kp	10592765	502719	x
/n05000/R01000/s034.kp	25966424	1232334	x
/n10000/R01000/s034.kp	52080883	2471693	x

Chú thích:

✓: Có

x: Không thể kết luận

Nhận xét (với các test case đã thử nghiệm trong bảng):

- Nhóm dễ nhất (cho lời giải tối ưu một cách nhanh chóng với tất cả test case):
 - 00Uncorrelated
 - 01WeaklyCorrelated
 - 05SubsetSum
- Nhóm khó nhất (chỉ cho lời giải tối ưu nhanh chóng của các test case với $n = 50$):
 - 07SpannerUncorrelated
 - 08SpannerWeaklyCorrelated
 - 09SpannerStronglyCorrelated