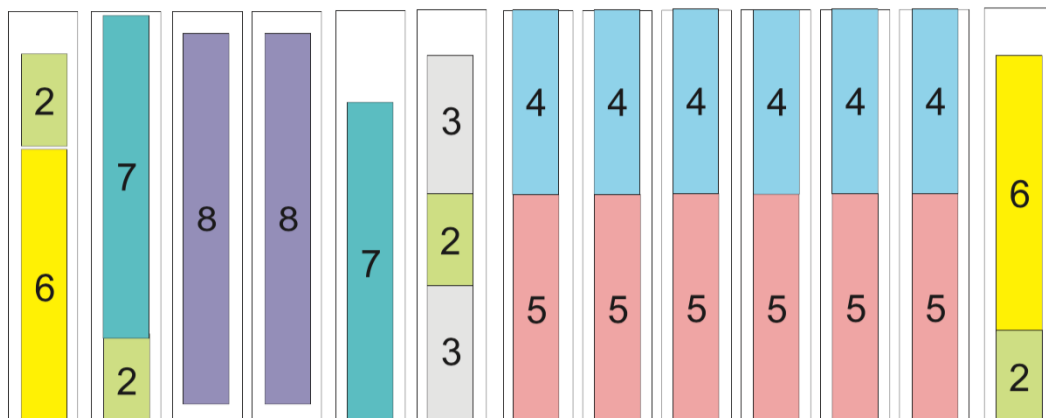


Annexes - Bin Packing 1D

*Optimisation discrète - M. Stéphane BONNEVAY
Février - juin 2021*



ANNEXE n°1

MIN	13	99	198	21	41	84	168	25	29	257	217	11	62
AVG	13	99.8	198.9666667	21	41	84	168	25.1	29	257.8666667	217.2666667	11.03333333	62.06666667
VAR	0	0.16	0.03222222222	0	0	0	0	0.09	0	0.1822222222	0.1955555556	0.03222222222	0.06222222222
ECART-TYPE	0	0.4	0.1795054936	0	0	0	0	0.3	0	0.4268749491	0.4422166388	0.1795054936	0.2494438258

AVG(ECART-TYPE)	0.17	Runtime	9min 2s
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Initial temperature	Final temperature	Iteration per temperature	Decreasing factor
10	0.0001	100	0.98



MIN	13	99	198	21	41	84	168	25	29	257	217	11	62
AVG	13	99.53333333	198.9333333	21	41	84	168	25.1	29	257.7666667	217.1333333	11	62.1
VAR	0	0.248888889	0.06222222222	0	0	0	0	0	0	0.178888889	0.1155555556	0	0.09
ECART-TYPE	0	0.4988876516	0.2494438258	0	0	0	0	0	0	0.4229525847	0.3399346343	0	0.3

AVG(ECART-TYPE)	0.14	Runtime	10min 12s
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Initial temperature	Final temperature	Iteration per temperature	Decreasing factor
100	0.0001	100	0.98



MIN	13	99	198	21	41	84	168	25	29	257	216	11	62
AVG	13	99.6	198.9	21	41	84	168	25	29	257.6666667	217	11.03333333	62.03333333
VAR	0	0.24	0.09	0	0	0	0	0	0	0.2222222222	0.1333333333	0.03222222222	0.03222222222
ECART-TYPE	0	0.4898979486	0.3	0	0	0	0	0	0	0.4714045208	0.3651483716	0.1795054936	0.1795054936

AVG(ECART-TYPE)	0.15	Runtime	12min 46s
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Initial temperature	Final temperature	Iteration per temperature	Decreasing factor
1000	0.0001	100	0.98

ANNEXE n°2

MIN	13	99	199	21	41	84	168	25	29	257	217	11	62
AVG	13	99,83333333	199,0666667	21	41	84	168,3333333	25,06666667	29	258,1333333	217,5	11,03333333	62,23333333
VAR	0	0,1388888889	0,06222222222	0	0	0	0,2222222222	0,06222222222	0	0,1822222222	0,25	0,03222222222	0,1788888889
ECART-TYPE	0	0,3726779963	0,2494438258	0	0	0	0,4714045208	0,2494438258	0	0,4268749491	0,5	0,1795054936	0,4229525847

AVG(ECART-TYPE)	0,22
Runtime	1min 16s

Initial temperature	Final temperature	Iteration per temperature	Decreasing factor
100	0,0001	10	0,98

MIN	13	99	198	21	41	84	168	25	29	257	217	11	62
AVG	13	99,73333333	198,9666667	21	41	84	168	25	29	257,7666667	217,2666667	11,03333333	62,06666667
VAR	0	0,1955555556	0,03222222222	0	0	0	0	0	0	0,1788888889	0,1955555556	0,03222222222	0,06222222222
ECART-TYPE	0	0,4422166388	0,1795054936	0	0	0	0	0	0	0,4229525847	0,4422166388	0,1795054936	0,2494438258

AVG(ECART-TYPE)	0,15
Runtime	5min 20s

Initial temperature	Final temperature	Iteration per temperature	Decreasing factor
100	0,0001	50	0,98

MIN	13	99	198	21	41	84	168	25	29	257	217	11	62
AVG	13	99,53333333	198,9333333	21	41	84	168	25,1	29	257,7666667	217,1333333	11	62,1
VAR	0	0,2488888889	0,06222222222	0	0	0	0	0	0	0,1788888889	0,1155555556	0	0,09
ECART-TYPE	0	0,4988876516	0,2494438258	0	0	0	0	0	0	0,4229525847	0,3399346343	0	0,3

AVG(ECART-TYPE)	0,14
Runtime	10min 12s

Initial temperature	Final temperature	Iteration per temperature	Decreasing factor
100	0,0001	100	0,98

MIN	13	99	198	21	41	84	168	25	29	257	217	11	62
AVG	13	99,73333333	198,9333333	21	41	84	168	25	29	257,7	217,1333333	11	62,1
VAR	0	0,1955555556	0,06222222222	0	0	0	0	0	0	0,21	0,1155555556	0	0,09
ECART-TYPE	0	0,4422166387	0,2494438258	0	0	0	0	0	0	0,4582575695	0,3399346342	0	0,3

AVG(ECART-TYPE)	0,14
Runtime	19min 47s

Initial temperature	Final temperature	Iteration per temperature	Decreasing factor
100	0,0001	200	0,98

ANNEXE n°3

MIN	13	99	198	21	41	84	168	25	29	257	217	11	62
AVG	13	99,63333333	198,9666667	21	41	84	168	25,1	29	257,9666667	217,4333333	11	62,1
VAR	0	0,2322222222	0,03222222222	0	0	0	0	0,09	0	0,03222222222	0,2455555556	0	0,09
ECART-TYPE	0	0,4818944098	0,1795054936	0	0	0	0	0,3	0	0,1795054936	0,4955356249	0	0,3

AVG(ECART-TYPE)	0,15	Runtime	1min 48s
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Initial temperature	Final temperature	Iteration per temperature	Decreasing factor
100	0,0001	100	0,9

MIN	13	99	199	21	41	84	168	25	29	257	217	11	62
AVG	13	99,7	199	21	41	84	168	25,03333333	29	257,8333333	217,2666667	11	62,13333333
VAR	0	0,21	0,06222222222	0	0	0	0	0,03222222222	0	0,1388888889	0,1955555556	0	0,1155555556
ECART-TYPE	0	0,4582575695	0,2494438258	0	0	0	0	0,1795054936	0	0,3726779962	0,4422166387	0	0,3399346342

AVG(ECART-TYPE)	0,16	Runtime	2min 17s
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Initial temperature	Final temperature	Iteration per temperature	Decreasing factor
100	0,0001	100	0,92

MIN	13	99	198	21	41	84	168	25	29	257	217	11	62
AVG	13	99,7	199	21	41	84	168	25	29	257,9333333	217,5	11	62,13333333
VAR	0	0,21	0,06666666667	0	0	0	0	0	0	0,06222222222	0,1388888889	0	0,1155555556
ECART-TYPE	0	0,4582575695	0,2581988897	0	0	0	0	0	0	0,2494438258	0,3726779962	0	0,3399346342

AVG(ECART-TYPE)	0,13	Runtime	3min 40s
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Initial temperature	Final temperature	Iteration per temperature	Decreasing factor
100	0,0001	100	0,95

MIN	13	99	198	21	41	84	168	25	29	257	217	11	62
AVG	13	99,53333333	198,9333333	21	41	84	168	25,1	29	257,7666667	217,1333333	11	62,1
VAR	0	0,2488888889	0,06222222222	0	0	0	0	0	0	0,1788888889	0,1155555556	0	0,09
ECART-TYPE	0	0,4988876516	0,2494438258	0	0	0	0	0	0	0,4229525847	0,3399346343	0	0,3

AVG(ECART-TYPE)	0,14	Runtime	10min 12s
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Initial temperature	Final temperature	Iteration per temperature	Decreasing factor
100	0,0001	100	0,98

ANNEXE n°4

MIN	13	103	207	21	43	91	184	26	29	266	230	12	64
AVG	13.06666667	104.1333333	207.9666667	21.36666667	43.63333333	92.2	186.2333333	26	29	269.6666667	231.2	12	64.86666667
VAR	0.06222222222	0.3822222222	0.4988888889	0.2322222222	0.2322222222	0.4933333333	1.112222222	0	0	4.888888889	0.76	0	0.9155555556
ECART-TYPE	0.2494438258	0.618241233	0.70632067	0.4818944098	0.4818944098	0.7023769169	1.054619468	0	0	2.211083194	0.8717797887	0	0.956846673

AVG(ECART-TYPE)	0.64
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Runtime	4.526s
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Maximum step	Neighbourhood per step	Tabu size
10	100	3

MIN	13	100	202	21	41	85	174	25	29	259	221	11	63
AVG	13.06666667	100	202.5666667	21	41	85.06666667	175.1	25.3	29	260.9333333	222.5	11.03333333	62.2
VAR	0.06222222222	0	0.3122222222	0	0	0.06222222222	0.29	0.21	0	1.728888889	0.45	0.03222222222	0.16
ECART-TYPE	0.2494438258	0	0.5587684871	0	0	0.2494438258	0.5385164807	0.4582575695	0	1.314872195	0.6708203932	0.1795054936	0.4

AVG(ECART-TYPE)	0.36
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Runtime	47.825s
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Maximum step	Neighbourhood per step	Tabu size
100	100	3

MIN	13	99	199	21	41	84	168	25	29	258	217	11	62
AVG	13.06666667	99.66666667	199	21	41	84	168	25.56666667	29	258.2666667	217.3666667	11.03333333	62.06666667
VAR	0.06222222222	0.2222222222	0	0	0	0	0	0.2455555556	0	0.2622222222	0.2322222222	0.03222222222	0.06222222222
ECART-TYPE	0.2494438258	0.4714045208	0	0	0	0	0	0.4955356249	0	0.5120763832	0.4818944098	0.1795054936	0.2494438258

AVG(ECART-TYPE)	0.20
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Runtime	3min 48s
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Maximum step	Neighbourhood per step	Tabu size
500	100	3

MIN	13	99	199	21	41	84	168	25	29	258	217	11	62
AVG	13.06666667	99.93333333	199	21	41	84	168	25.46666667	29	258.3666667	217.3	11	62.03333333
VAR	0.06222222222	0.0622222222	0	0	0	0	0	0.2488888889	0	0.2322222222	0.21	0	0.03222222222
ECART-TYPE	0.2494438258	0.2494438258	0	0	0	0	0	0.4988876516	0	0.4818944098	0.4582575695	0	0.1795054936

AVG(ECART-TYPE)	0.16
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Runtime	7min 39s
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Maximum step	Neighbourhood per step	Tabu size
1000	100	3

ANNEXE n°5

MIN	13	99	199	21	41	84	170	25	29	258	218	11	62
AVG	13	99.9	200.1	21	41	84	170.8333333	25.6	29	259.4333333	218.9666667	11.06666667	62.23333333
VAR	0	0.09	0.1566666667	0	0	0	0.4055555556	0.24	0	0.5788888889	0.2988888889	0.0622222222	0.2455555556
ECART-TYPE	0	0.3	0.3958114029	0	0	0	0.6368324392	0.4898979486	0	0.7608474807	0.5467073156	0.2494438258	0.4955356249

AVG(ECART-TYPE)	0.30
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Runtime	3min 48s
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Maximum step	Neighbourhood per step	Tabu size
500	10	3

MIN	13	99	199	21	41	84	168	25	29	257	217	11	62
AVG	13.03	99.93333333	199.0333333	21	41	84	168.1	25.56666667	29	258.3	217.4333333	11.03333333	62.03333333
VAR	0.0322222222	0.0622222222	0.0322222222	0	0	0	0.09	0.2455555556	0	0.2766666667	0.2455555556	0.0322222222	0.0322222222
ECART-TYPE	0.1795054936	0.2494438258	0.1795054936	0	0	0	0.3	0.4955356249	0	0.5259911279	0.4955356249	0.1795054936	0.1795054936

AVG(ECART-TYPE)	0.21
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Runtime	1min 47s
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Maximum step	Neighbourhood per step	Tabu size
500	50	3

MIN	13	99	199	21	41	84	168	25	29	258	217	11	62
AVG	13.06666667	99.66666667	199	21	41	84	168	25.56666667	29	258.2666667	217.3666667	11.03333333	62.06666667
VAR	0.0622222222	0.222222222	0	0	0	0	0	0.2455555556	0	0.2622222222	0.2322222222	0.0322222222	0.0622222222
ECART-TYPE	0.2494438258	0.4714045208	0	0	0	0	0	0.4955356249	0	0.5120763832	0.4818944098	0.1795054936	0.2494438258

AVG(ECART-TYPE)	0.20
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Runtime	3min 48s
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Maximum step	Neighbourhood per step	Tabu size
500	100	3

MIN	13	99	199	21	41	84	168	25	29	258	217	11	62
AVG	13.03333333	99.83333333	199.0333333	21	41	84	168	25.43333333	29	258.1	217.4666667	11	62.03333333
VAR	0.0322222222	0.1388888889	0.0322222222	0	0	0	0	0.2455555556	0	0.09	0.2488888889	0	0.0322222222
ECART-TYPE	0.1795054936	0.3726779962	0.1795054936	0	0	0	0	0.4955356249	0	0.3	0.4988876516	0	0.1795054936

AVG(ECART-TYPE)	0.17
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Runtime	7min 35s
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Maximum step	Neighbourhood per step	Tabu size
500	200	3

ANNEXE n°6

MIN	13	99	199	21	41	84	168	25	29	257	217	11	62
AVG	13,03333333	99,83333333	199	21	41	84	168	25,56666667	29	258,1666667	217,3333333	11,03333333	62,03333333
VAR	0,03222222222	0,138888889	0	0	0	0	0	0,2455555556	0	0,2055555556	0,2222222222	0,03222222222	0,03222222222
ECART-TYPE	0,1795054936	0,3726779962	0	0	0	0	0	0,4955356249	0	0,4533823503	0,4714045208	0,1795054936	0,1795054936

AVG(ECART-TYPE)	0,18
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Runtime	7min 27s
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Maximum step	Neighbourhood per step	Tabu size
500	200	1

MIN	13	99	199	21	41	84	168	25	29	258	217	11	62
AVG	13,03333333	99,76666667	199,0333333	21	41	84	168	25,53333333	29	258,1	217,2666667	11,06666667	62
VAR	0,03222222222	0,178888889	0,03222222222	0	0	0	0	0,248888889	0	0,09	0,1955555556	0,06222222222	0
ECART-TYPE	0,1795054936	0,4229525847	0,1795054936	0	0	0	0	0,4988876516	0	0,3	0,4422166387	0,2494438258	0

AVG(ECART-TYPE)	0,17
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Runtime	7min 35s
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Maximum step	Neighbourhood per step	Tabu size
500	200	2

MIN	13	99	199	21	41	84	168	25	29	258	217	11	62
AVG	13,03333333	99,83333333	199,0333333	21	41	84	168	25,43333333	29	258,1	217,4666667	11	62,03333333
VAR	0,03222222222	0,138888889	0,03222222222	0	0	0	0	0,2455555556	0	0,09	0,248888889	0	0,03222222222
ECART-TYPE	0,1795054936	0,3726779962	0,1795054936	0	0	0	0	0,4955356249	0	0,3	0,4988876516	0	0,1795054936

AVG(ECART-TYPE)	0,17
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Runtime	7min 35s
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Maximum step	Neighbourhood per step	Tabu size
500	200	3

MIN	13	99	199	21	41	84	168	25	29	257	217	11	62
AVG	13	99,73333333	199,0333333	21	41	84	168	25,43333333	29	258,1	217,2333333	11,06666667	62,03333333
VAR	0	0,1955555556	0,03222222222	0	0	0	0	0,2455555556	0	0,3566666667	0,178888889	0,06222222222	0,03222222222
ECART-TYPE	0	0,4422166387	0,1795054936	0	0	0	0	0,4955356249	0	0,5972157622	0,4229525847	0,2494438258	0,1795054936

AVG(ECART-TYPE)	0,20
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Runtime	7min 27s
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Maximum step	Neighbourhood per step	Tabu size
500	200	4