รายการอ้างอิง

ภาษาไทย

ปารเมศ ชุติมา, 2544, ระบบผลิตแบบยืดหยุ่น, กรุงเทพมหานคร: สำนักพิมพ์แห่งจุฬาลงกรณ์มหาวิทยาลัย.

ปารเมศ ชุติมา, 2546, เทคนิคการจัดตารางการดำเนินงาน, กรุงเทพมหานคร: สำนักพิมพ์แห่งจุฬาลงกรณ์มหาวิทยาลัย.

ปารเมศ ชุติมา และ ชญานี มีทรัพย์หลาก, การเปรียบเทียบประสิทธิภาพของกฎการจ่ายงานในระบบผลิตแบบยืดหยุ่น ภายใต้สภาวะการเร่งงาน, การประชุมข่ายงานวิศวกรรมอุตสาหการประจำปี 2546, 499-506

ภาษาอังกฤษ

Atmani, A. and Lashkari, R. S., 1998, A Model of machine-tool selection and operation in FMS, International journal of Production Research, 36(5): 1339-1349

Baker, K.R., 1984, Introduction to Sequencing and Scheduling, New York: John Wiley & Son, Inc.

Chan, F.T.S., Chan, H. K., Lau, H.C.W. and Ip, R.W.L., 2003, Analysis of dynamic dispatching rules for a flexible manufacturing system, Journal of Materials Processing Technology, 138, 325 - 331

Chen, Y.-J. and Askin, R.G., 1990, A multi objective evaluation of FMS loading heuristics., International journal of Production Research, 28(5): 895-911

Gamila, M.A. and Motavalli, S., 2003, A modeling technique for loading and scheduling problems in FMS, Robotics and Computer Integrated Manufacturing, 19: 45-54

Garetti, M., Pozzetti, P. and Bareggi, A., 1990, On-line loading and dispatching in flexible manufacturing systems, International journal of Production Research, 28 (7): 1271 - 1292

Grieco, A.. Semeraro, Q. and Tolio, T., 2001, A review of loading problem in flexible manufacturing systems. The International Journal of Flexible Manufacturing Systems, 13, 361 - 384

Guerrero, F., Loazno, S., Koltai, T. and Larraneta, J., 1999, Machine loading and part type selection in flexible manufacturing systems, International journal of Production Research, 37: 1303 - 1317

Hwang, S.S., 1986, Models for production planning in flexible manufacturing system. PhD thesis, University of California, Barkeley.

Kim, Y.D. and Yano, C.A., 1994, A due date-based approach to part type selection in flexible manufacturing system, International journal of Production Research, 32(5): 1027 - 1043

Kim, Y.D. and Yano, C.A., 1997, Impact of throughput based objectives and machine grouping decisions on the short-term performance of flexible manufacturing systems, International journal of Production Research, 35: 3303 - 3322

Kumar, N. and Shanker, K., 2001, Comparing the effectiveness of workload balancing objectives in FMS loading, International journal of Production Research, 39: 843-871

Kusiak, A.,1985, Flexible Manufacturing Systems : A Structural Approach, International journal of Production Research, 23(6): 1057 - 1073

Moreno, A.A and Ding, F.Y., 1993, A constructive heuristic algorithm for concurrently selecting and sequencing jobs in an FMS environment, International journal of Production Research, 31: 1157-1169

Mukhopadhyay, S.K., Bibekananda, M. and Sandip, G., 1991, Heuristic solution to the scheduling problems in flexible manufacturing system, International journal of Production Research, 29(10): 2003 - 2024

Mukhopadhyay, S.K., Midha, S. and Krishna, V.M., 1992, A heuristic procedure for loading problems in flexible manufacturing systems, International journal of Production Research, 30(9): 2213-2228

Mukhopadhyay, S.K., Singh, M.K., and Srivastava, R., 1998, FMS machine loading: a simulated annealing approcach. International journal of Production Research, 36: 1526 – 1547

Mukhopadhyay, S.K. and Tiwari, M.K., 1995 Solving machine loading problem of FMS by conjoint measurement. Proceeding of the 13th ECPR, Jerusalem, 74 - 76

Rahimifard, S. and Newman, S.T., 2000, Machine loading algorithms for the elimination of tardy jobs in flexible batch machining applications, Journal of Materials Processing Technology, 107:450-458

Roh, H. K. and Kim, Y. D., 1997, Due-Date based loading and scheduling Methods for flexible manufacturing systems with and automatic tool transporter, International journal of Production Research, 35(11): 1526 – 15472989-3003

Sarin, S.C. and Dar-el, E.M., 1986, Scheduling parts in an FMS, Large Scale System, 11: 83-84

Shanker, K. and Srivivasulu, A., 1989, Some solution methodologies for a loading problem in a flexible manufacturing system. International journal of Production Research, 27: 1019 – 1034

Shanker, K. and Tzen, Y. J., 1985, A loading and dispatching problem in a random FMS. International journal of Production Research, 23: 579 - 595

Starbek, M.J. and Kušar, A.B, 2001, The optimal scheduling in FMS, The 34th CIRP International Seminar on Manufacturing Systems, 16 – 18 May, 2001

Stecke, K.E., 1983, Formulation and solution of non-linear integer production planning problems for flexible manufacturing systems, Management Science, 29: 273-288

Stecke, K.E. and Solberg, J.J., 1981, Loading and control policies for and FMS, International journal of Production Research, 19(5): 481-490

Tiwari, M.K., Hazarika, B., Vidyarthi, N.K., Jaggi, P. and Mukhopadhyay, S.K., 1997, A heuristic solution approach to the machine-loading problem of FMS and its Petrinet model, International journal of Production Research, 35: 2269 - 2284

Tiwari, M.K., and Vidyarthi, N.K., 2000, Solving machine loading problems in a flexible manufacturing system using a genetic algorithm based heuristic approach., International journal of Production Research, 38(14): 3357 - 3384

Vidyarthi, N.K. and Tiwari, M.K., 2001 Machine loading problems of FMS : a fuzzy-based heuristics approach, International journal of Production Research, 39(5)): 953-979

ภาคผนวก

ภาคผนวก ก.

แสดงปัญหาที่นำมาใช้ในงานวิจัยจำนวน 10 ปัญหา

ตารางที่ ก1 แสดงปัญหาที่ 1ที่ใช้ในงานวิจัย

Job number	Batch size	Operation number	Unit processing time	Slot needed	Machine number
1	8	1	18	1	3
2	9	1	25	1	1
					4
		2	24	1	4
		3	22	1	2
3	13	1	26	2	4
					1
		2	11	3	3
4	6	1	14	1	3
5	9	1	22	2	2
					3
		2	25	1	2
6	10	1	16	1	4
		2	7	1	4
					2
					3
		3	21	1	2
					1
7	12	1	19	1	3
					2
					4
		2	13	1	2
					3
					1
		3	23	1	4
8	13	1	25	1	1
					2
					3
		2	7	1	2
					1
		3	24	3	1

ตารางที่ ก2 แสดงปัญหาที่2 ที่ใช้ในงานวิจัย

Job number	Batch size	Operation number	Unit processing time	Slot needed	Machine number
1	15	1	10	2	4
			12	2	2
2	10	1	20	1	1
		2	35	2	3
3	12	1	22	3	1
4	9	1	25	1	3
			25	1	2
5	16	1	30	2	4
			25	1	2
			27	2	3
		2	10	1	1
		3	16	1	1
			16	1	4
6	11	1	21	3	2

ตารางที่ ก3 แสดงปัญหาที่ 3ที่ใช้ในงานวิจัย

Job number	Batch size	Operation number	Unit processing time	Slot needed	Machine number
1	10	1	25	3	3
			35	2	2
			27	2	4
			42	2	1
2	31	1	10	3	2
3	22	1	20	1	4
			19	1	1
		2	21	2	3
			21	1	1
4	6	1	51	3	1
5	10	1	16	1	1
			16	1	4
		2	17	1	2
			17	1	3

ตารางที่ ก4 แสดงปัญหาที่ 4ที่ใช้ในงานวิจัย

Job number	Batch size	Operation number	Unit processing time	Slot needed	Machine number
1	6	1	10	1	2
		2	12	2	1
		3	7	1	4
2	9	1	9	1	4
			9	1	2
			9	1	3
		6	6	2	3
3	8	1	12	1	4
4	12	1	14	2	2
			14	2	3
		2	12	1	3
		3	12	1	2
5	16	1	15	2	1

ตารางที่ ก5 แสดงปัญหาที่ 5ที่ใช้ในงานวิจัย

Job number	Batch size	Operation number	Unit processing time	Slot needed	Machine number
1	12	1	11	2	3
			10	2	1
			12	2	2
		2	9	1	2
2	11	1	20	2	1
3	15	1	13	1	3
		2	22	2	4
4	14	1	10	1	4
		2	26	2	3
			26	2	1
			26	21	2
		3	16		3
5	12	1	20	3	3
6	12	1	18	2	1

ตารางที่ ก6 แสดงปัญหาที่ 6ที่ใช้ในงานวิจัย

Job number	Batch size	Operation number	Unit processing time	Slot needed	Machine number
1	15	1	10	2	4
			12	2	2
2	10	1	20	1	1
		2	35	2	3
3	12	1	22	3	1
4	9	1	25	1	3
			25	1	2
5	16	1	30	2	4
			25	1	2
			27	2	3
		2	16	1	1
			16	1	4
6	11	1	21	3	2

ตารางที่ ก7 แสดงปัญหาที่ 7ที่ใช้ในงานวิจัย

Job number	Batch size	Operation number	Unit processing time	Slot needed	Machine number
1	12	1	20	2	1
2	15	1	10	1	4
		2	25	2	3
			25	2	1
			25	2	2
		3	16	1	3
3	12	1	18	2	1
4	15	1	14	1	3
		2	20	2	4
5	12	1	20	3	3
6	12	1	10	2	3
			10	2	1
			10	2	2
		2	9	1	2

ตารางที่ ก8 แสดงปัญหาที่ 8ที่ใช้ในงานวิจัย

Job number	Batch size	Operation number	Unit processing time	Slot needed	Machine number
1	9	1	22	2	2
			22	2	3
		2	25	1	2
2	8	1	20	1	3
3	9	1	25	1	1
			25	1	4
		2	25	1	4
		3	22	1	2
4	7	1	24	1	3
		2	19	1	4
5	14	1	26	2	4
			26	2	1
		2	11	3	3
6	13	1	25	1	1
			25	1	2
			25	1	3
		2	17	1	2
			17	1	1
		3	24	3	1
7	10	1	16	1	4
		2	7	1	4
			7	1	2
			7	1	3

ตารางที่ ก9 แสดงปัญหาที่ 9ที่ใช้ในงานวิจัย

Job number	Batch size	Operation number	Unit processing time	Slot needed	Machine number
1	15	1	10	2	3
		2	12	2	1
2	20	1	9	1	4
			9	1	3
			9	1	2
3	12	1	20	2	2
4	11	1	9	1	1
		2	11	2	2
			11	2	3
			11	2	4
5	10	1	8	1	2
			8	1	4
		2	10	1	3
			10	1	1
6	11	1	16	1	4
		2	12	1	1
7	9	1	8	1	1
			8	1	2
			8	1	3
		2	9	2	4
			9	2	1

ตารางที่ ก10 แสดงปัญหาที่ 10ที่ใช้ในงานวิจัย

Job number	Batch size	Operation number	Unit processing time	Slot needed	Machine number
1	13	1	7	1	3
			7	1	4
		2	8	1	1
			8	1	4
		3	9	2	2
2	9	1	9	1	3
		2	8	1	4
		3	8	1	1
			8	1	3
3	9	1	11	1	1
		2	10	1	2
4	11	1	10	2	3
		2	9	1	4
		3	13	2	1

ภาคผนวก ข.

ตัวอย่างผลการทดลอง

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Proposed	1	NOP	Low	Low	FIFO	SPT	925.08
Proposed	1	NOP	Low	Low	FIFO	MWKR	992.21
Proposed	1	NOP	Low	Low	FIFO	LWKR	865.08
Proposed	1	NOP	Low	Low	FIFO	EDD	978.89
Proposed	1	NOP	Low	Low	SPT	SPT	822.16
Proposed	1	NOP	Low	Low	SPT	MWKR	766.35
Proposed	1	NOP	Low	Low	SPT	LWKR	766.35
Proposed	1	NOP	Low	Low	SPT	EDD	753.03
Proposed	1	NOP	Low	Low	EDD	SPT	813.03
Proposed	1	NOP	Low	Low	EDD	MWKR	766.35
Proposed	1	NOP	Low	Low	EDD	LWKR	766.35
Proposed	1	NOP	Low	Low	EDD	EDD	753.03
Proposed	1	NOP	Low	High	FIFO	SPT	995.04
Proposed	1	NOP	Low	High	FIFO	MWKR	1172.21
Proposed	1	NOP	Low	High	FIFO	LWKR	948.35
Proposed	1	NOP	Low	High	FIFO	EDD	935.04
Proposed	1	NOP	Low	High	SPT	SPT	1516.89
Proposed	1	NOP	Low	High	SPT	MWKR	1463.05
Proposed	1	NOP	Low	High	SPT	LWKR	1636.89
Proposed	1	NOP	Low	High	SPT	EDD	1440.42
Proposed	1	NOP	Low	High	EDD	SPT	1310.82
Proposed	1	NOP	Low	High	EDD	MWKR	1310.82
Proposed	1	NOP	Low	High	EDD	LWKR	1298.7
Proposed	1	NOP	Low	High	EDD	EDD	1310.82
Proposed	1	NOP	High	Low	FIFO	SPT	1148.69
Proposed	1	NOP	High	Low	FIFO	MWKR	1170.57
Proposed	1	NOP	High	Low	FIFO	LWKR	1196

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Proposed	1	NOP	High	Low	FIFO	EDD	1170.57
Proposed	1	NOP	High	Low	SPT	SPT	822.16
Proposed	1	NOP	High	Low	SPT	MWKR	775.48
Proposed	1	NOP	High	Low	SPT	LWKR	775.48
Proposed	1	NOP	High	Low	SPT	EDD	813.03
Proposed	1	NOP	High	Low	EDD	SPT	822.16
Proposed	1	NOP	High	Low	EDD	MWKR	775.48
Proposed	1	NOP	High	Low	EDD	LWKR	775.48
Proposed	1	NOP	High	Low	EDD	EDD	813.03
Proposed	1	NOP	High	High	FIFO	SPT	1055.04
Proposed	1	NOP	High	High	FIFO	MWKR	1055.04
Proposed	1	NOP	High	High	FIFO	LWKR	1121.46
Proposed	1	NOP	High	High	FIFO	EDD	1194.57
Proposed	1	NOP	High	High	SPT	SPT	1062.16
Proposed	1	NOP	High	High	SPT	MWKR	1132.56
Proposed	1	NOP	High	High	SPT	LWKR	1062.16
Proposed	1	NOP	High	High	SPT	EDD	1132.56
Proposed	1	NOP	High	High	EDD	SPT	1009.21
Proposed	1	NOP	High	High	EDD	MWKR	1177.06
Proposed	1	NOP	High	High	EDD	LWKR	1058.7
Proposed	1	NOP	High	High	EDD	EDD	1191.08
Proposed	1	TWK	Low	Low	FIFO	SPT	862.8
Proposed	1	TWK	Low	Low	FIFO	MWKR	803.29
Proposed	1	TWK	Low	Low	FIFO	LWKR	816.12
Proposed	1	TWK	Low	Low	FIFO	EDD	940.88
Proposed	1	TWK	Low	Low	SPT	SPT	822.16
Proposed	1	TWK	Low	Low	SPT	MWKR	779.29

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Proposed	1	TWK	Low	Low	SPT	LWKR	792.12
Proposed	1	TWK	Low	Low	SPT	EDD	916.89
Proposed	1	TWK	Low	Low	EDD	SPT	1026.77
Proposed	1	TWK	Low	Low	EDD	MWKR	1046.22
Proposed	1	TWK	Low	Low	EDD	LWKR	958.8
Proposed	1	TWK	Low	Low	EDD	EDD	1183.82
Proposed	1	TWK	Low	High	FIFO	SPT	897.03
Proposed	1	TWK	Low	High	FIFO	MWKR	802.71
Proposed	1	TWK	Low	High	FIFO	LWKR	816.03
Proposed	1	TWK	Low	High	FIFO	EDD	777.03
Proposed	1	TWK	Low	High	SPT	SPT	1062.16
Proposed	1	TWK	Low	High	SPT	MWKR	1158.33
Proposed	1	TWK	Low	High	SPT	LWKR	1015.48
Proposed	1	TWK	Low	High	SPT	EDD	1132.56
Proposed	1	TWK	Low	High	EDD	SPT	1179.18
Proposed	1	TWK	Low	High	EDD	MWKR	1172.69
Proposed	1	TWK	Low	High	EDD	LWKR	1183.21
Proposed	1	TWK	Low	High	EDD	EDD	1172.69
Proposed	1	TWK	High	Low	FIFO	SPT	1086.77
Proposed	1	TWK	High	Low	FIFO	MWKR	1106.22
Proposed	1	TWK	High	Low	FIFO	LWKR	862.63
Proposed	1	TWK	High	Low	FIFO	EDD	1183.82
Proposed	1	TWK	High	Low	SPT	SPT	901.33
Proposed	1	TWK	High	Low	SPT	MWKR	759.35
Proposed	1	TWK	High	Low	SPT	LWKR	905.56
Proposed	1	TWK	High	Low	SPT	EDD	915.35
Proposed	1	TWK	High	Low	EDD	SPT	901.33

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Proposed	1	TWK	High	Low	EDD	MWKR	820.62
Proposed	1	TWK	High	Low	EDD	LWKR	855.88
Proposed	1	TWK	High	Low	EDD	EDD	915.35
Proposed	1	TWK	High	High	FIFO	SPT	1363.17
Proposed	1	TWK	High	High	FIFO	MWKR	1616.34
Proposed	1	TWK	High	High	FIFO	LWKR	954.64
Proposed	1	TWK	High	High	FIFO	EDD	1590.57
Proposed	1	TWK	High	High	SPT	SPT	1362.16
Proposed	1	TWK	High	High	SPT	MWKR	1158.33
Proposed	1	TWK	High	High	SPT	LWKR	1362.16
Proposed	1	TWK	High	High	SPT	EDD	1132.56
Proposed	1	TWK	High	High	EDD	SPT	1190.82
Proposed	1	TWK	High	High	EDD	MWKR	1230.57
Proposed	1	TWK	High	High	EDD	LWKR	1215.35
Proposed	1	TWK	High	High	EDD	EDD	1190.82
Proposed	1	CON	Low	Low	FIFO	SPT	1012.66
Proposed	1	CON	Low	Low	FIFO	MWKR	1040.8
Proposed	1	CON	Low	Low	FIFO	LWKR	1016.57
Proposed	1	CON	Low	Low	FIFO	EDD	1012.66
Proposed	1	CON	Low	Low	SPT	SPT	822.16
Proposed	1	CON	Low	Low	SPT	MWKR	779.29
Proposed	1	CON	Low	Low	SPT	LWKR	792.12
Proposed	1	CON	Low	Low	SPT	EDD	916.89
Proposed	1	CON	Low	Low	EDD	SPT	853.8
Proposed	1	CON	Low	Low	EDD	MWKR	853.8
Proposed	1	CON	Low	Low	EDD	LWKR	878.32
Proposed	1	CON	Low	Low	EDD	EDD	948.54

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Proposed	1	CON	Low	High	FIFO	SPT	1165.08
Proposed	1	CON	Low	High	FIFO	MWKR	1108.95
Proposed	1	CON	Low	High	FIFO	LWKR	994.27
Proposed	1	CON	Low	High	FIFO	EDD	1158.9
Proposed	1	CON	Low	High	SPT	SPT	1062.16
Proposed	1	CON	Low	High	SPT	MWKR	1000.89
Proposed	1	CON	Low	High	SPT	LWKR	1015.48
Proposed	1	CON	Low	High	SPT	EDD	1132.56
Proposed	1	CON	Low	High	EDD	SPT	1252.67
Proposed	1	CON	Low	High	EDD	MWKR	1173.77
Proposed	1	CON	Low	High	EDD	LWKR	1157.78
Proposed	1	CON	Low	High	EDD	EDD	1169.9
Proposed	1	CON	High	Low	FIFO	SPT	1105.34
Proposed	1	CON	High	Low	FIFO	MWKR	1098.69
Proposed	1	CON	High	Low	FIFO	LWKR	1154.62
Proposed	1	CON	High	Low	FIFO	EDD	1119.36
Proposed	1	CON	High	Low	SPT	SPT	1034.79
Proposed	1	CON	High	Low	SPT	MWKR	858.66
Proposed	1	CON	High	Low	SPT	LWKR	977.62
Proposed	1	CON	High	Low	SPT	EDD	1034.79
Proposed	1	CON	High	Low	EDD	SPT	1228.78
Proposed	1	CON	High	Low	EDD	MWKR	1235.89
Proposed	1	CON	High	Low	EDD	LWKR	1196.01
Proposed	1	CON	High	Low	EDD	EDD	1222.29
Proposed	1	CON	High	High	FIFO	SPT	1259.07
Proposed	1	CON	High	High	FIFO	MWKR	1278.6
Proposed	1	CON	High	High	FIFO	LWKR	1199.25

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Proposed	1	CON	High	High	FIFO	EDD	1278.6
Proposed	1	CON	High	High	SPT	SPT	962.73
Proposed	1	CON	High	High	SPT	MWKR	840.31
Proposed	1	CON	High	High	SPT	LWKR	856.08
Proposed	1	CON	High	High	SPT	EDD	1070.57
Proposed	1	CON	High	High	EDD	SPT	1285.31
Proposed	1	CON	High	High	EDD	MWKR	1278.66
Proposed	1	CON	High	High	EDD	LWKR	1334.59
Proposed	1	CON	High	High	EDD	EDD	1299.33
Proposed	1	RDM	Low	Low	FIFO	SPT	1310.52
Proposed	1	RDM	Low	Low	FIFO	MWKR	1070.52
Proposed	1	RDM	Low	Low	FIFO	LWKR	1070.52
Proposed	1	RDM	Low	Low	FIFO	EDD	1310.52
Proposed	1	RDM	Low	Low	SPT	SPT	852.12
Proposed	1	RDM	Low	Low	SPT	MWKR	852.12
Proposed	1	RDM	Low	Low	SPT	LWKR	790.33
Proposed	1	RDM	Low	Low	SPT	EDD	1357.05
Proposed	1	RDM	Low	Low	EDD	SPT	901.18
Proposed	1	RDM	Low	Low	EDD	MWKR	901.18
Proposed	1	RDM	Low	Low	EDD	LWKR	915.58
Proposed	1	RDM	Low	Low	EDD	EDD	894.69
Proposed	1	RDM	Low	High	FIFO	SPT	1355.02
Proposed	1	RDM	Low	High	FIFO	MWKR	1014.55
Proposed	1	RDM	Low	High	FIFO	LWKR	1014.55
Proposed	1	RDM	Low	High	FIFO	EDD	1494.55
Proposed	1	RDM	Low	High	SPT	SPT	1524.93
Proposed	1	RDM	Low	High	SPT	MWKR	1418.41

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Proposed	1	RDM	Low	High	SPT	LWKR	1361.06
Proposed	1	RDM	Low	High	SPT	EDD	1147.65
Proposed	1	RDM	Low	High	EDD	SPT	901.18
Proposed	1	RDM	Low	High	EDD	MWKR	901.18
Proposed	1	RDM	Low	High	EDD	LWKR	915.58
Proposed	1	RDM	Low	High	EDD	EDD	894.69
Proposed	1	RDM	High	Low	FIFO	SPT	1205.63
Proposed	1	RDM	High	Low	FIFO	MWKR	890.55
Proposed	1	RDM	High	Low	FIFO	LWKR	931.21
Proposed	1	RDM	High	Low	FIFO	EDD	1205.63
Proposed	1	RDM	High	Low	SPT	SPT	925.31
Proposed	1	RDM	High	Low	SPT	MWKR	950.06
Proposed	1	RDM	High	Low	SPT	LWKR	929.54
Proposed	1	RDM	High	Low	SPT	EDD	939.32
Proposed	1	RDM	High	Low	EDD	SPT	925.31
Proposed	1	RDM	High	Low	EDD	MWKR	950.06
Proposed	1	RDM	High	Low	EDD	LWKR	974.59
Proposed	1	RDM	High	Low	EDD	EDD	939.32
Proposed	1	RDM	High	High	FIFO	SPT	1250.52
Proposed	1	RDM	High	High	FIFO	MWKR	1250.52
Proposed	1	RDM	High	High	FIFO	LWKR	1185.49
Proposed	1	RDM	High	High	FIFO	EDD	1250.52
Proposed	1	RDM	High	High	SPT	SPT	944.61
Proposed	1	RDM	High	High	SPT	MWKR	969.36
Proposed	1	RDM	High	High	SPT	LWKR	898.58
Proposed	1	RDM	High	High	SPT	EDD	944.61
Proposed	1	RDM	High	High	EDD	SPT	805.08

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Proposed	1	RDM	High	High	EDD	MWKR	829.83
Proposed	1	RDM	High	High	EDD	LWKR	838.58
Proposed	1	RDM	High	High	EDD	EDD	944.61
Old	1	NOP	Low	Low	FIFO	SPT	1038.44
Old	1	NOP	Low	Low	FIFO	MWKR	991.72
Old	1	NOP	Low	Low	FIFO	LWKR	978.44
Old	1	NOP	Low	Low	FIFO	EDD	978.44
Old	1	NOP	Low	Low	SPT	SPT	841.72
Old	1	NOP	Low	Low	SPT	MWKR	913.74
Old	1	NOP	Low	Low	SPT	LWKR	913.74
Old	1	NOP	Low	Low	SPT	EDD	900.45
Old	1	NOP	Low	Low	EDD	SPT	960.45
Old	1	NOP	Low	Low	EDD	MWKR	913.74
Old	1	NOP	Low	Low	EDD	LWKR	913.74
Old	1	NOP	Low	Low	EDD	EDD	900.45
Old	1	NOP	Low	High	FIFO	SPT	1201.71
Old	1	NOP	Low	High	FIFO	MWKR	1036.59
Old	1	NOP	Low	High	FIFO	LWKR	1201.71
Old	1	NOP	Low	High	FIFO	EDD	1638.42
Old	1	NOP	Low	High	SPT	SPT	901.72
Old	1	NOP	Low	High	SPT	MWKR	1021.72
Old	1	NOP	Low	High	SPT	LWKR	901.72
Old	1	NOP	Low	High	SPT	EDD	1236.45
Old	1	NOP	Low	High	EDD	SPT	781.72
Old	1	NOP	Low	High	EDD	MWKR	781.72
Old	1	NOP	Low	High	EDD	LWKR	781.72
Old	1	NOP	Low	High	EDD	EDD	1236.45

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Old	1	NOP	High	Low	FIFO	SPT	1050.56
Old	1	NOP	High	Low	FIFO	MWKR	1050.56
Old	1	NOP	High	Low	FIFO	LWKR	1091.21
Old	1	NOP	High	Low	FIFO	EDD	1050.56
Old	1	NOP	High	Low	SPT	SPT	1014.45
Old	1	NOP	High	Low	SPT	MWKR	735
Old	1	NOP	High	Low	SPT	LWKR	735
Old	1	NOP	High	Low	SPT	EDD	876.45
Old	1	NOP	High	Low	EDD	SPT	1014.45
Old	1	NOP	High	Low	EDD	MWKR	735
Old	1	NOP	High	Low	EDD	LWKR	735
Old	1	NOP	High	Low	EDD	EDD	876.45
Old	1	NOP	High	High	FIFO	SPT	1122.36
Old	1	NOP	High	High	FIFO	MWKR	1260.45
Old	1	NOP	High	High	FIFO	LWKR	1095.48
Old	1	NOP	High	High	FIFO	EDD	1290.56
Old	1	NOP	High	High	SPT	SPT	878.73
Old	1	NOP	High	High	SPT	MWKR	1046.58
Old	1	NOP	High	High	SPT	LWKR	1110.46
Old	1	NOP	High	High	SPT	EDD	1046.58
Old	1	NOP	High	High	EDD	SPT	878.73
Old	1	NOP	High	High	EDD	MWKR	1046.58
Old	1	NOP	High	High	EDD	LWKR	1110.19
Old	1	NOP	High	High	EDD	EDD	1046.58
Old	1	TWK	Low	Low	FIFO	SPT	796.59
Old	1	TWK	Low	Low	FIFO	MWKR	736.59
Old	1	TWK	Low	Low	FIFO	LWKR	749.87

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Old	1	TWK	Low	Low	FIFO	EDD	736.59
Old	1	TWK	Low	Low	SPT	SPT	772.59
Old	1	TWK	Low	Low	SPT	MWKR	712.59
Old	1	TWK	Low	Low	SPT	LWKR	725.88
Old	1	TWK	Low	Low	SPT	EDD	712.59
Old	1	TWK	Low	Low	EDD	SPT	1186.97
Old	1	TWK	Low	Low	EDD	MWKR	1205.84
Old	1	TWK	Low	Low	EDD	LWKR	1036.89
Old	1	TWK	Low	Low	EDD	EDD	1205.84
Old	1	TWK	Low	High	FIFO	SPT	856.59
Old	1	TWK	Low	High	FIFO	MWKR	736.59
Old	1	TWK	Low	High	FIFO	LWKR	749.87
Old	1	TWK	Low	High	FIFO	EDD	736.59
Old	1	TWK	Low	High	SPT	SPT	1152.57
Old	1	TWK	Low	High	SPT	MWKR	1152.57
Old	1	TWK	Low	High	SPT	LWKR	1152.57
Old	1	TWK	Low	High	SPT	EDD	1152.57
Old	1	TWK	Low	High	EDD	SPT	932.68
Old	1	TWK	Low	High	EDD	MWKR	1032.57
Old	1	TWK	Low	High	EDD	LWKR	945.49
Old	1	TWK	Low	High	EDD	EDD	1032.57
Old	1	TWK	High	Low	FIFO	SPT	954.45
Old	1	TWK	High	Low	FIFO	MWKR	894.45
Old	1	TWK	High	Low	FIFO	LWKR	907.73
Old	1	TWK	High	Low	FIFO	EDD	894.45
Old	1	TWK	High	Low	SPT	SPT	796.43
Old	1	TWK	High	Low	SPT	MWKR	712.59

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Old	1	TWK	High	Low	SPT	LWKR	725.88
Old	1	TWK	High	Low	SPT	EDD	712.59
Old	1	TWK	High	Low	EDD	SPT	1150.96
Old	1	TWK	High	Low	EDD	MWKR	1140.45
Old	1	TWK	High	Low	EDD	LWKR	1128.43
Old	1	TWK	High	Low	EDD	EDD	1140.45
Old	1	TWK	High	High	FIFO	SPT	1338.45
Old	1	TWK	High	High	FIFO	MWKR	1350.56
Old	1	TWK	High	High	FIFO	LWKR	994.83
Old	1	TWK	High	High	FIFO	EDD	1350.56
Old	1	TWK	High	High	SPT	SPT	1152.57
Old	1	TWK	High	High	SPT	MWKR	1152.57
Old	1	TWK	High	High	SPT	LWKR	1152.57
Old	1	TWK	High	High	SPT	EDD	1152.57
Old	1	TWK	High	High	EDD	SPT	932.68
Old	1	TWK	High	High	EDD	MWKR	1032.57
Old	1	TWK	High	High	EDD	LWKR	945.49
Old	1	TWK	High	High	EDD	EDD	1032.57
Old	1	CON	Low	Low	FIFO	SPT	1021.72
Old	1	CON	Low	Low	FIFO	MWKR	960.45
Old	1	CON	Low	Low	FIFO	LWKR	973.73
Old	1	CON	Low	Low	FIFO	EDD	960.45
Old	1	CON	Low	Low	SPT	SPT	781.72
Old	1	CON	Low	Low	SPT	MWKR	961.72
Old	1	CON	Low	Low	SPT	LWKR	781.72
Old	1	CON	Low	Low	SPT	EDD	1028.69
Old	1	CON	Low	Low	EDD	SPT	1268.69

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Old	1	CON	Low	Low	EDD	MWKR	1268.69
Old	1	CON	Low	Low	EDD	LWKR	1281.49
Old	1	CON	Low	Low	EDD	EDD	1268.69
Old	1	CON	Low	High	FIFO	SPT	1122.36
Old	1	CON	Low	High	FIFO	MWKR	1052.68
Old	1	CON	Low	High	FIFO	LWKR	1163.01
Old	1	CON	Low	High	FIFO	EDD	1052.68
Old	1	CON	Low	High	SPT	SPT	1518.44
Old	1	CON	Low	High	SPT	MWKR	978.44
Old	1	CON	Low	High	SPT	LWKR	1518.44
Old	1	CON	Low	High	SPT	EDD	1368.57
Old	1	CON	Low	High	EDD	SPT	908.84
Old	1	CON	Low	High	EDD	MWKR	968.69
Old	1	CON	Low	High	EDD	LWKR	993.24
Old	1	CON	Low	High	EDD	EDD	1010.85
Old	1	CON	High	Low	FIFO	SPT	1518.44
Old	1	CON	High	Low	FIFO	MWKR	1458.44
Old	1	CON	High	Low	FIFO	LWKR	1386.53
Old	1	CON	High	Low	FIFO	EDD	1458.44
Old	1	CON	High	Low	SPT	SPT	1028.84
Old	1	CON	High	Low	SPT	MWKR	876.71
Old	1	CON	High	Low	SPT	LWKR	1016.73
Old	1	CON	High	Low	SPT	EDD	1028.84
Old	1	CON	High	Low	EDD	SPT	1200.45
Old	1	CON	High	Low	EDD	MWKR	1172.68
Old	1	CON	High	Low	EDD	LWKR	1200.45
Old	1	CON	High	Low	EDD	EDD	1392.57

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Old	1	CON	High	High	FIFO	SPT	1361.08
Old	1	CON	High	High	FIFO	MWKR	1338.44
Old	1	CON	High	High	FIFO	LWKR	1245.48
Old	1	CON	High	High	FIFO	EDD	1338.44
Old	1	CON	High	High	SPT	SPT	1494.45
Old	1	CON	High	High	SPT	MWKR	986.16
Old	1	CON	High	High	SPT	LWKR	1614.45
Old	1	CON	High	High	SPT	EDD	1148.84
Old	1	CON	High	High	EDD	SPT	1466.78
Old	1	CON	High	High	EDD	MWKR	1370.66
Old	1	CON	High	High	EDD	LWKR	1479.59
Old	1	CON	High	High	EDD	EDD	1536.42
Old	1	RDM	Low	Low	FIFO	SPT	1098.45
Old	1	RDM	Low	Low	FIFO	MWKR	814.83
Old	1	RDM	Low	Low	FIFO	LWKR	814.83
Old	1	RDM	Low	Low	FIFO	EDD	1026.57
Old	1	RDM	Low	Low	SPT	SPT	834.45
Old	1	RDM	Low	Low	SPT	MWKR	936.46
Old	1	RDM	Low	Low	SPT	LWKR	787.74
Old	1	RDM	Low	Low	SPT	EDD	876.46
Old	1	RDM	Low	Low	EDD	SPT	1314.45
Old	1	RDM	Low	Low	EDD	MWKR	1090.84
Old	1	RDM	Low	Low	EDD	LWKR	1090.84
Old	1	RDM	Low	Low	EDD	EDD	1086.57
Old	1	RDM	Low	High	FIFO	SPT	1338.45
Old	1	RDM	Low	High	FIFO	MWKR	994.83
Old	1	RDM	Low	High	FIFO	LWKR	994.83

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Old	1	RDM	Low	High	FIFO	EDD	1170.56
Old	1	RDM	Low	High	SPT	SPT	1794.45
Old	1	RDM	Low	High	SPT	MWKR	1285.2
Old	1	RDM	Low	High	SPT	LWKR	1711.73
Old	1	RDM	Low	High	SPT	EDD	1446.57
Old	1	RDM	Low	High	EDD	SPT	1232.46
Old	1	RDM	Low	High	EDD	MWKR	1090.84
Old	1	RDM	Low	High	EDD	LWKR	970.84
Old	1	RDM	Low	High	EDD	EDD	1086.57
Old	1	RDM	High	Low	FIFO	SPT	892.59
Old	1	RDM	High	Low	FIFO	MWKR	892.59
Old	1	RDM	High	Low	FIFO	LWKR	892.59
Old	1	RDM	High	Low	FIFO	EDD	1012.59
Old	1	RDM	High	Low	SPT	SPT	1176.45
Old	1	RDM	High	Low	SPT	MWKR	1132.84
Old	1	RDM	High	Low	SPT	LWKR	1038.11
Old	1	RDM	High	Low	SPT	EDD	1368.57
Old	1	RDM	High	Low	EDD	SPT	1084.96
Old	1	RDM	High	Low	EDD	MWKR	967.87
Old	1	RDM	High	Low	EDD	LWKR	1077.36
Old	1	RDM	High	Low	EDD	EDD	1223.84
Old	1	RDM	High	High	FIFO	SPT	1278.45
Old	1	RDM	High	High	FIFO	MWKR	1174.83
Old	1	RDM	High	High	FIFO	LWKR	1174.83
Old	1	RDM	High	High	FIFO	EDD	1290.56
Old	1	RDM	High	High	SPT	SPT	769.25
Old	1	RDM	High	High	SPT	MWKR	769.25

ตารางที่ ข.1 แสดงค่าเวลาที่ชิ้นงานอยู่ในระบบในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	Due Date	ETR Priority	OTR Priority	Reallocate	Dispatch	Flow Time
Old	1	RDM	High	High	SPT	LWKR	818.73
Old	1	RDM	High	High	SPT	EDD	974.46
Old	1	RDM	High	High	EDD	SPT	1472.45
Old	1	RDM	High	High	EDD	MWKR	1188.84
Old	1	RDM	High	High	EDD	LWKR	1087.74
Old	1	RDM	High	High	EDD	EDD	1388.57

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Proposed	1	NOP	Low	Low	FIFO	LWKR	239.42
Proposed	1	NOP	Low	Low	FIFO	EDD	306.55
Proposed	1	NOP	Low	Low	FIFO	SPT	179.42
Proposed	1	NOP	Low	Low	FIFO	MWKR	293.23
Proposed	1	NOP	Low	Low	SPT	LWKR	136.49
Proposed	1	NOP	Low	Low	SPT	EDD	80.68
Proposed	1	NOP	Low	Low	SPT	SPT	80.68
Proposed	1	NOP	Low	Low	SPT	MWKR	67.37
Proposed	1	NOP	Low	Low	EDD	LWKR	127.37
Proposed	1	NOP	Low	Low	EDD	EDD	80.68
Proposed	1	NOP	Low	Low	EDD	SPT	80.68
Proposed	1	NOP	Low	Low	EDD	MWKR	67.37
Proposed	1	NOP	Low	High	FIFO	LWKR	309.37
Proposed	1	NOP	Low	High	FIFO	EDD	486.55
Proposed	1	NOP	Low	High	FIFO	SPT	262.69
Proposed	1	NOP	Low	High	FIFO	MWKR	249.37
Proposed	1	NOP	Low	High	SPT	LWKR	831.23
Proposed	1	NOP	Low	High	SPT	EDD	777.38
Proposed	1	NOP	Low	High	SPT	SPT	951.23
Proposed	1	NOP	Low	High	SPT	MWKR	754.75
Proposed	1	NOP	Low	High	EDD	LWKR	625.15
Proposed	1	NOP	Low	High	EDD	EDD	625.15
Proposed	1	NOP	Low	High	EDD	SPT	613.03
Proposed	1	NOP	Low	High	EDD	MWKR	625.15
Proposed	1	NOP	High	Low	FIFO	LWKR	463.02
Proposed	1	NOP	High	Low	FIFO	EDD	484.91
Proposed	1	NOP	High	Low	FIFO	SPT	510.33

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Proposed	1	NOP	High	Low	FIFO	MWKR	484.91
Proposed	1	NOP	High	Low	SPT	LWKR	136.50
Proposed	1	NOP	High	Low	SPT	EDD	89.82
Proposed	1	NOP	High	Low	SPT	SPT	89.82
Proposed	1	NOP	High	Low	SPT	MWKR	127.37
Proposed	1	NOP	High	Low	EDD	LWKR	136.50
Proposed	1	NOP	High	Low	EDD	EDD	89.82
Proposed	1	NOP	High	Low	EDD	SPT	89.82
Proposed	1	NOP	High	Low	EDD	MWKR	127.37
Proposed	1	NOP	High	High	FIFO	LWKR	369.37
Proposed	1	NOP	High	High	FIFO	EDD	369.37
Proposed	1	NOP	High	High	FIFO	SPT	435.80
Proposed	1	NOP	High	High	FIFO	MWKR	508.90
Proposed	1	NOP	High	High	SPT	LWKR	376.49
Proposed	1	NOP	High	High	SPT	EDD	446.90
Proposed	1	NOP	High	High	SPT	SPT	376.49
Proposed	1	NOP	High	High	SPT	MWKR	446.90
Proposed	1	NOP	High	High	EDD	LWKR	323.55
Proposed	1	NOP	High	High	EDD	EDD	491.40
Proposed	1	NOP	High	High	EDD	SPT	373.03
Proposed	1	NOP	High	High	EDD	MWKR	505.41
Proposed	1	TWK	Low	Low	FIFO	LWKR	155.41
Proposed	1	TWK	Low	Low	FIFO	EDD	95.90
Proposed	1	TWK	Low	Low	FIFO	SPT	108.73
Proposed	1	TWK	Low	Low	FIFO	MWKR	233.49
Proposed	1	TWK	Low	Low	SPT	LWKR	114.77
Proposed	1	TWK	Low	Low	SPT	EDD	71.90

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Proposed	1	TWK	Low	Low	SPT	SPT	84.73
Proposed	1	TWK	Low	Low	SPT	MWKR	209.50
Proposed	1	TWK	Low	Low	EDD	LWKR	319.38
Proposed	1	TWK	Low	Low	EDD	EDD	338.83
Proposed	1	TWK	Low	Low	EDD	SPT	251.42
Proposed	1	TWK	Low	Low	EDD	MWKR	476.43
Proposed	1	TWK	Low	High	FIFO	LWKR	189.64
Proposed	1	TWK	Low	High	FIFO	EDD	95.33
Proposed	1	TWK	Low	High	FIFO	SPT	108.64
Proposed	1	TWK	Low	High	FIFO	MWKR	69.64
Proposed	1	TWK	Low	High	SPT	LWKR	354.77
Proposed	1	TWK	Low	High	SPT	EDD	450.94
Proposed	1	TWK	Low	High	SPT	SPT	308.09
Proposed	1	TWK	Low	High	SPT	MWKR	425.17
Proposed	1	TWK	Low	High	EDD	LWKR	471.79
Proposed	1	TWK	Low	High	EDD	EDD	465.30
Proposed	1	TWK	Low	High	EDD	SPT	475.82
Proposed	1	TWK	Low	High	EDD	MWKR	465.30
Proposed	1	TWK	High	Low	FIFO	LWKR	379.38
Proposed	1	TWK	High	Low	FIFO	EDD	398.83
Proposed	1	TWK	High	Low	FIFO	SPT	155.24
Proposed	1	TWK	High	Low	FIFO	MWKR	476.43
Proposed	1	TWK	High	Low	SPT	LWKR	193.94
Proposed	1	TWK	High	Low	SPT	EDD	51.96
Proposed	1	TWK	High	Low	SPT	SPT	198.18
Proposed	1	TWK	High	Low	SPT	MWKR	207.96
Proposed	1	TWK	High	Low	EDD	LWKR	193.94

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Proposed	1	TWK	High	Low	EDD	EDD	113.23
Proposed	1	TWK	High	Low	EDD	SPT	148.49
Proposed	1	TWK	High	Low	EDD	MWKR	207.96
Proposed	1	TWK	High	High	FIFO	LWKR	655.78
Proposed	1	TWK	High	High	FIFO	EDD	908.95
Proposed	1	TWK	High	High	FIFO	SPT	247.25
Proposed	1	TWK	High	High	FIFO	MWKR	883.18
Proposed	1	TWK	High	High	SPT	LWKR	654.77
Proposed	1	TWK	High	High	SPT	EDD	450.94
Proposed	1	TWK	High	High	SPT	SPT	654.77
Proposed	1	TWK	High	High	SPT	MWKR	425.17
Proposed	1	TWK	High	High	EDD	LWKR	483.43
Proposed	1	TWK	High	High	EDD	EDD	523.18
Proposed	1	TWK	High	High	EDD	SPT	507.96
Proposed	1	TWK	High	High	EDD	MWKR	483.43
Proposed	1	CON	Low	Low	FIFO	LWKR	263.50
Proposed	1	CON	Low	Low	FIFO	EDD	291.63
Proposed	1	CON	Low	Low	FIFO	SPT	267.40
Proposed	1	CON	Low	Low	FIFO	MWKR	263.50
Proposed	1	CON	Low	Low	SPT	LWKR	73.00
Proposed	1	CON	Low	Low	SPT	EDD	30.13
Proposed	1	CON	Low	Low	SPT	SPT	42.95
Proposed	1	CON	Low	Low	SPT	MWKR	167.72
Proposed	1	CON	Low	Low	EDD	LWKR	104.64
Proposed	1	CON	Low	Low	EDD	EDD	104.64
Proposed	1	CON	Low	Low	EDD	SPT	129.15
Proposed	1	CON	Low	Low	EDD	MWKR	199.37

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Proposed	1	CON	Low	High	FIFO	LWKR	415.91
Proposed	1	CON	Low	High	FIFO	EDD	359.78
Proposed	1	CON	Low	High	FIFO	SPT	245.10
Proposed	1	CON	Low	High	FIFO	MWKR	409.73
Proposed	1	CON	Low	High	SPT	LWKR	312.99
Proposed	1	CON	Low	High	SPT	EDD	251.72
Proposed	1	CON	Low	High	SPT	SPT	266.31
Proposed	1	CON	Low	High	SPT	MWKR	383.40
Proposed	1	CON	Low	High	EDD	LWKR	503.50
Proposed	1	CON	Low	High	EDD	EDD	424.60
Proposed	1	CON	Low	High	EDD	SPT	408.62
Proposed	1	CON	Low	High	EDD	MWKR	420.73
Proposed	1	CON	High	Low	FIFO	LWKR	356.17
Proposed	1	CON	High	Low	FIFO	EDD	349.53
Proposed	1	CON	High	Low	FIFO	SPT	405.45
Proposed	1	CON	High	Low	FIFO	MWKR	370.19
Proposed	1	CON	High	Low	SPT	LWKR	285.63
Proposed	1	CON	High	Low	SPT	EDD	109.49
Proposed	1	CON	High	Low	SPT	SPT	228.46
Proposed	1	CON	High	Low	SPT	MWKR	285.63
Proposed	1	CON	High	Low	EDD	LWKR	479.61
Proposed	1	CON	High	Low	EDD	EDD	486.72
Proposed	1	CON	High	Low	EDD	SPT	446.84
Proposed	1	CON	High	Low	EDD	MWKR	473.12
Proposed	1	CON	High	High	FIFO	LWKR	509.91
Proposed	1	CON	High	High	FIFO	EDD	529.43
Proposed	1	CON	High	High	FIFO	SPT	450.08

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Proposed	1	CON	High	High	FIFO	MWKR	529.43
Proposed	1	CON	High	High	SPT	LWKR	213.56
Proposed	1	CON	High	High	SPT	EDD	91.15
Proposed	1	CON	High	High	SPT	SPT	106.91
Proposed	1	CON	High	High	SPT	MWKR	321.41
Proposed	1	CON	High	High	EDD	LWKR	536.14
Proposed	1	CON	High	High	EDD	EDD	529.49
Proposed	1	CON	High	High	EDD	SPT	585.42
Proposed	1	CON	High	High	EDD	MWKR	550.16
Proposed	1	RDM	Low	Low	FIFO	LWKR	1262.30
Proposed	1	RDM	Low	Low	FIFO	EDD	1022.30
Proposed	1	RDM	Low	Low	FIFO	SPT	1022.30
Proposed	1	RDM	Low	Low	FIFO	MWKR	1262.30
Proposed	1	RDM	Low	Low	SPT	LWKR	803.89
Proposed	1	RDM	Low	Low	SPT	EDD	803.89
Proposed	1	RDM	Low	Low	SPT	SPT	742.10
Proposed	1	RDM	Low	Low	SPT	MWKR	1308.82
Proposed	1	RDM	Low	Low	EDD	LWKR	852.96
Proposed	1	RDM	Low	Low	EDD	EDD	852.96
Proposed	1	RDM	Low	Low	EDD	SPT	867.36
Proposed	1	RDM	Low	Low	EDD	MWKR	846.46
Proposed	1	RDM	Low	High	FIFO	LWKR	1306.79
Proposed	1	RDM	Low	High	FIFO	EDD	966.32
Proposed	1	RDM	Low	High	FIFO	SPT	966.32
Proposed	1	RDM	Low	High	FIFO	MWKR	1446.32
Proposed	1	RDM	Low	High	SPT	LWKR	1476.71
Proposed	1	RDM	Low	High	SPT	EDD	1370.19

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Proposed	1	RDM	Low	High	SPT	SPT	1312.84
Proposed	1	RDM	Low	High	SPT	MWKR	1099.43
Proposed	1	RDM	Low	High	EDD	LWKR	852.96
Proposed	1	RDM	Low	High	EDD	EDD	852.96
Proposed	1	RDM	Low	High	EDD	SPT	867.36
Proposed	1	RDM	Low	High	EDD	MWKR	846.46
Proposed	1	RDM	High	Low	FIFO	LWKR	1157.41
Proposed	1	RDM	High	Low	FIFO	EDD	842.33
Proposed	1	RDM	High	Low	FIFO	SPT	882.98
Proposed	1	RDM	High	Low	FIFO	MWKR	1157.41
Proposed	1	RDM	High	Low	SPT	LWKR	877.09
Proposed	1	RDM	High	Low	SPT	EDD	901.84
Proposed	1	RDM	High	Low	SPT	SPT	881.32
Proposed	1	RDM	High	Low	SPT	MWKR	891.10
Proposed	1	RDM	High	Low	EDD	LWKR	877.09
Proposed	1	RDM	High	Low	EDD	EDD	901.84
Proposed	1	RDM	High	Low	EDD	SPT	926.37
Proposed	1	RDM	High	Low	EDD	MWKR	891.10
Proposed	1	RDM	High	High	FIFO	LWKR	1202.30
Proposed	1	RDM	High	High	FIFO	EDD	1202.30
Proposed	1	RDM	High	High	FIFO	SPT	1137.26
Proposed	1	RDM	High	High	FIFO	MWKR	1202.30
Proposed	1	RDM	High	High	SPT	LWKR	896.39
Proposed	1	RDM	High	High	SPT	EDD	921.13
Proposed	1	RDM	High	High	SPT	SPT	850.36
Proposed	1	RDM	High	High	SPT	MWKR	896.39
Proposed	1	RDM	High	High	EDD	LWKR	756.86

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Proposed	1	RDM	High	High	EDD	EDD	781.61
Proposed	1	RDM	High	High	EDD	SPT	790.36
Proposed	1	RDM	High	High	EDD	MWKR	896.39
Old	1	NOP	Low	Low	FIFO	LWKR	352.77
Old	1	NOP	Low	Low	FIFO	EDD	306.06
Old	1	NOP	Low	Low	FIFO	SPT	292.77
Old	1	NOP	Low	Low	FIFO	MWKR	292.77
Old	1	NOP	Low	Low	SPT	LWKR	156.06
Old	1	NOP	Low	Low	SPT	EDD	228.07
Old	1	NOP	Low	Low	SPT	SPT	228.07
Old	1	NOP	Low	Low	SPT	MWKR	214.79
Old	1	NOP	Low	Low	EDD	LWKR	274.79
Old	1	NOP	Low	Low	EDD	EDD	228.07
Old	1	NOP	Low	Low	EDD	SPT	228.07
Old	1	NOP	Low	Low	EDD	MWKR	214.79
Old	1	NOP	Low	High	FIFO	LWKR	516.05
Old	1	NOP	Low	High	FIFO	EDD	350.92
Old	1	NOP	Low	High	FIFO	SPT	516.05
Old	1	NOP	Low	High	FIFO	MWKR	952.75
Old	1	NOP	Low	High	SPT	LWKR	216.05
Old	1	NOP	Low	High	SPT	EDD	336.05
Old	1	NOP	Low	High	SPT	SPT	216.05
Old	1	NOP	Low	High	SPT	MWKR	550.79
Old	1	NOP	Low	High	EDD	LWKR	96.05
Old	1	NOP	Low	High	EDD	EDD	96.05
Old	1	NOP	Low	High	EDD	SPT	96.05
Old	1	NOP	Low	High	EDD	MWKR	550.79

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Old	1	NOP	High	Low	FIFO	LWKR	364.89
Old	1	NOP	High	Low	FIFO	EDD	364.89
Old	1	NOP	High	Low	FIFO	SPT	405.54
Old	1	NOP	High	Low	FIFO	MWKR	364.89
Old	1	NOP	High	Low	SPT	LWKR	328.78
Old	1	NOP	High	Low	SPT	EDD	49.34
Old	1	NOP	High	Low	SPT	SPT	49.34
Old	1	NOP	High	Low	SPT	MWKR	190.79
Old	1	NOP	High	Low	EDD	LWKR	328.78
Old	1	NOP	High	Low	EDD	EDD	49.34
Old	1	NOP	High	Low	EDD	SPT	49.34
Old	1	NOP	High	Low	EDD	MWKR	190.79
Old	1	NOP	High	High	FIFO	LWKR	436.70
Old	1	NOP	High	High	FIFO	EDD	574.79
Old	1	NOP	High	High	FIFO	SPT	409.82
Old	1	NOP	High	High	FIFO	MWKR	604.90
Old	1	NOP	High	High	SPT	LWKR	193.07
Old	1	NOP	High	High	SPT	EDD	360.91
Old	1	NOP	High	High	SPT	SPT	424.79
Old	1	NOP	High	High	SPT	MWKR	360.91
Old	1	NOP	High	High	EDD	LWKR	193.07
Old	1	NOP	High	High	EDD	EDD	360.91
Old	1	NOP	High	High	EDD	SPT	424.52
Old	1	NOP	High	High	EDD	MWKR	360.91
Old	1	TWK	Low	Low	FIFO	LWKR	89.20
Old	1	TWK	Low	Low	FIFO	EDD	29.20
Old	1	TWK	Low	Low	FIFO	SPT	42.48

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Old	1	TWK	Low	Low	FIFO	MWKR	29.20
Old	1	TWK	Low	Low	SPT	LWKR	65.20
Old	1	TWK	Low	Low	SPT	EDD	5.20
Old	1	TWK	Low	Low	SPT	SPT	18.49
Old	1	TWK	Low	Low	SPT	MWKR	5.20
Old	1	TWK	Low	Low	EDD	LWKR	479.58
Old	1	TWK	Low	Low	EDD	EDD	498.45
Old	1	TWK	Low	Low	EDD	SPT	329.50
Old	1	TWK	Low	Low	EDD	MWKR	498.45
Old	1	TWK	Low	High	FIFO	LWKR	149.20
Old	1	TWK	Low	High	FIFO	EDD	29.20
Old	1	TWK	Low	High	FIFO	SPT	42.48
Old	1	TWK	Low	High	FIFO	MWKR	29.20
Old	1	TWK	Low	High	SPT	LWKR	445.18
Old	1	TWK	Low	High	SPT	EDD	445.18
Old	1	TWK	Low	High	SPT	SPT	445.18
Old	1	TWK	Low	High	SPT	MWKR	445.18
Old	1	TWK	Low	High	EDD	LWKR	225.30
Old	1	TWK	Low	High	EDD	EDD	325.18
Old	1	TWK	Low	High	EDD	SPT	238.10
Old	1	TWK	Low	High	EDD	MWKR	325.18
Old	1	TWK	High	Low	FIFO	LWKR	247.06
Old	1	TWK	High	Low	FIFO	EDD	187.06
Old	1	TWK	High	Low	FIFO	SPT	200.34
Old	1	TWK	High	Low	FIFO	MWKR	187.06
Old	1	TWK	High	Low	SPT	LWKR	89.04
Old	1	TWK	High	Low	SPT	EDD	5.20

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Old	1	TWK	High	Low	SPT	SPT	18.49
Old	1	TWK	High	Low	SPT	MWKR	5.20
Old	1	TWK	High	Low	EDD	LWKR	443.57
Old	1	TWK	High	Low	EDD	EDD	433.06
Old	1	TWK	High	Low	EDD	SPT	421.04
Old	1	TWK	High	Low	EDD	MWKR	433.06
Old	1	TWK	High	High	FIFO	LWKR	631.06
Old	1	TWK	High	High	FIFO	EDD	643.17
Old	1	TWK	High	High	FIFO	SPT	287.44
Old	1	TWK	High	High	FIFO	MWKR	643.17
Old	1	TWK	High	High	SPT	LWKR	445.18
Old	1	TWK	High	High	SPT	EDD	445.18
Old	1	TWK	High	High	SPT	SPT	445.18
Old	1	TWK	High	High	SPT	MWKR	445.18
Old	1	TWK	High	High	EDD	LWKR	225.30
Old	1	TWK	High	High	EDD	EDD	325.18
Old	1	TWK	High	High	EDD	SPT	238.10
Old	1	TWK	High	High	EDD	MWKR	325.18
Old	1	CON	Low	Low	FIFO	LWKR	272.55
Old	1	CON	Low	Low	FIFO	EDD	211.28
Old	1	CON	Low	Low	FIFO	SPT	224.57
Old	1	CON	Low	Low	FIFO	MWKR	211.28
Old	1	CON	Low	Low	SPT	LWKR	32.55
Old	1	CON	Low	Low	SPT	EDD	212.55
Old	1	CON	Low	Low	SPT	SPT	32.55
Old	1	CON	Low	Low	SPT	MWKR	279.52
Old	1	CON	Low	Low	EDD	LWKR	519.52

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Old	1	CON	Low	Low	EDD	EDD	519.52
Old	1	CON	Low	Low	EDD	SPT	532.33
Old	1	CON	Low	Low	EDD	MWKR	519.52
Old	1	CON	Low	High	FIFO	LWKR	373.19
Old	1	CON	Low	High	FIFO	EDD	303.52
Old	1	CON	Low	High	FIFO	SPT	413.84
Old	1	CON	Low	High	FIFO	MWKR	303.52
Old	1	CON	Low	High	SPT	LWKR	769.28
Old	1	CON	Low	High	SPT	EDD	229.28
Old	1	CON	Low	High	SPT	SPT	769.28
Old	1	CON	Low	High	SPT	MWKR	619.40
Old	1	CON	Low	High	EDD	LWKR	159.68
Old	1	CON	Low	High	EDD	EDD	219.52
Old	1	CON	Low	High	EDD	SPT	244.07
Old	1	CON	Low	High	EDD	MWKR	261.68
Old	1	CON	High	Low	FIFO	LWKR	769.28
Old	1	CON	High	Low	FIFO	EDD	709.28
Old	1	CON	High	Low	FIFO	SPT	637.36
Old	1	CON	High	Low	FIFO	MWKR	709.28
Old	1	CON	High	Low	SPT	LWKR	279.68
Old	1	CON	High	Low	SPT	EDD	127.54
Old	1	CON	High	Low	SPT	SPT	267.56
Old	1	CON	High	Low	SPT	MWKR	279.68
Old	1	CON	High	Low	EDD	LWKR	451.28
Old	1	CON	High	Low	EDD	EDD	423.52
Old	1	CON	High	Low	EDD	SPT	451.28
Old	1	CON	High	Low	EDD	MWKR	643.40

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Old	1	CON	High	High	FIFO	LWKR	611.91
Old	1	CON	High	High	FIFO	EDD	589.28
Old	1	CON	High	High	FIFO	SPT	496.31
Old	1	CON	High	High	FIFO	MWKR	589.28
Old	1	CON	High	High	SPT	LWKR	745.28
Old	1	CON	High	High	SPT	EDD	236.99
Old	1	CON	High	High	SPT	SPT	865.28
Old	1	CON	High	High	SPT	MWKR	399.67
Old	1	CON	High	High	EDD	LWKR	717.61
Old	1	CON	High	High	EDD	EDD	621.50
Old	1	CON	High	High	EDD	SPT	730.42
Old	1	CON	High	High	EDD	MWKR	787.25
Old	1	RDM	Low	Low	FIFO	LWKR	1050.23
Old	1	RDM	Low	Low	FIFO	EDD	766.61
Old	1	RDM	Low	Low	FIFO	SPT	766.61
Old	1	RDM	Low	Low	FIFO	MWKR	978.34
Old	1	RDM	Low	Low	SPT	LWKR	786.23
Old	1	RDM	Low	Low	SPT	EDD	888.24
Old	1	RDM	Low	Low	SPT	SPT	739.51
Old	1	RDM	Low	Low	SPT	MWKR	828.24
Old	1	RDM	Low	Low	EDD	LWKR	1266.23
Old	1	RDM	Low	Low	EDD	EDD	1042.61
Old	1	RDM	Low	Low	EDD	SPT	1042.61
Old	1	RDM	Low	Low	EDD	MWKR	1038.34
Old	1	RDM	Low	High	FIFO	LWKR	1290.23
Old	1	RDM	Low	High	FIFO	EDD	946.61
Old	1	RDM	Low	High	FIFO	SPT	946.61

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Old	1	RDM	Low	High	FIFO	MWKR	1122.34
Old	1	RDM	Low	High	SPT	LWKR	1746.23
Old	1	RDM	Low	High	SPT	EDD	1236.98
Old	1	RDM	Low	High	SPT	SPT	1663.51
Old	1	RDM	Low	High	SPT	MWKR	1398.34
Old	1	RDM	Low	High	EDD	LWKR	1184.24
Old	1	RDM	Low	High	EDD	EDD	1042.61
Old	1	RDM	Low	High	EDD	SPT	922.61
Old	1	RDM	Low	High	EDD	MWKR	1038.34
Old	1	RDM	High	Low	FIFO	LWKR	844.37
Old	1	RDM	High	Low	FIFO	EDD	844.37
Old	1	RDM	High	Low	FIFO	SPT	844.37
Old	1	RDM	High	Low	FIFO	MWKR	964.37
Old	1	RDM	High	Low	SPT	LWKR	1128.23
Old	1	RDM	High	Low	SPT	EDD	1084.62
Old	1	RDM	High	Low	SPT	SPT	989.89
Old	1	RDM	High	Low	SPT	MWKR	1320.35
Old	1	RDM	High	Low	EDD	LWKR	1036.74
Old	1	RDM	High	Low	EDD	EDD	919.65
Old	1	RDM	High	Low	EDD	SPT	1029.14
Old	1	RDM	High	Low	EDD	MWKR	1175.62
Old	1	RDM	High	High	FIFO	LWKR	1230.23
Old	1	RDM	High	High	FIFO	EDD	1126.61
Old	1	RDM	High	High	FIFO	SPT	1126.61
Old	1	RDM	High	High	FIFO	MWKR	1242.34
Old	1	RDM	High	High	SPT	LWKR	721.02
Old	1	RDM	High	High	SPT	EDD	721.02

ตารางที่ ข.2 แสดงค่าเวลาสายของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Lateness
Old	1	RDM	High	High	SPT	SPT	770.51
Old	1	RDM	High	High	SPT	MWKR	926.24
Old	1	RDM	High	High	EDD	LWKR	1424.23
Old	1	RDM	High	High	EDD	EDD	1140.62
Old	1	RDM	High	High	EDD	SPT	1039.51
Old	1	RDM	High	High	EDD	MWKR	1340.35

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Proposed	1	NOP	Low	Low	FIFO	SPT	272.58
Proposed	1	NOP	Low	Low	FIFO	EDD	342.20
Proposed	1	NOP	Low	Low	FIFO	LWKR	226.24
Proposed	1	NOP	Low	Low	FIFO	MWKR	342.20
Proposed	1	NOP	Low	Low	SPT	SPT	217.77
Proposed	1	NOP	Low	Low	SPT	EDD	154.35
Proposed	1	NOP	Low	Low	SPT	LWKR	154.35
Proposed	1	NOP	Low	Low	SPT	MWKR	154.35
Proposed	1	NOP	Low	Low	EDD	SPT	200.69
Proposed	1	NOP	Low	Low	EDD	EDD	154.35
Proposed	1	NOP	Low	Low	EDD	LWKR	154.35
Proposed	1	NOP	Low	Low	EDD	MWKR	154.35
Proposed	1	NOP	Low	High	FIFO	SPT	342.54
Proposed	1	NOP	Low	High	FIFO	EDD	520.05
Proposed	1	NOP	Low	High	FIFO	LWKR	296.20
Proposed	1	NOP	Low	High	FIFO	MWKR	296.20
Proposed	1	NOP	Low	High	SPT	SPT	897.79
Proposed	1	NOP	Low	High	SPT	EDD	831.21
Proposed	1	NOP	Low	High	SPT	LWKR	1017.79
Proposed	1	NOP	Low	High	SPT	MWKR	808.58
Proposed	1	NOP	Low	High	EDD	SPT	678.98
Proposed	1	NOP	Low	High	EDD	EDD	678.98
Proposed	1	NOP	Low	High	EDD	LWKR	666.86
Proposed	1	NOP	Low	High	EDD	MWKR	678.98
Proposed	1	NOP	High	Low	FIFO	SPT	592.91
Proposed	1	NOP	High	Low	FIFO	EDD	622.12
Proposed	1	NOP	High	Low	FIFO	LWKR	633.89

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Proposed	1	NOP	High	Low	FIFO	MWKR	622.12
Proposed	1	NOP	High	Low	SPT	SPT	217.77
Proposed	1	NOP	High	Low	SPT	EDD	171.43
Proposed	1	NOP	High	Low	SPT	LWKR	171.43
Proposed	1	NOP	High	Low	SPT	MWKR	222.30
Proposed	1	NOP	High	Low	EDD	SPT	217.77
Proposed	1	NOP	High	Low	EDD	EDD	171.43
Proposed	1	NOP	High	Low	EDD	LWKR	171.43
Proposed	1	NOP	High	Low	EDD	MWKR	222.30
Proposed	1	NOP	High	High	FIFO	SPT	498.64
Proposed	1	NOP	High	High	FIFO	EDD	498.64
Proposed	1	NOP	High	High	FIFO	LWKR	551.40
Proposed	1	NOP	High	High	FIFO	MWKR	638.17
Proposed	1	NOP	High	High	SPT	SPT	457.18
Proposed	1	NOP	High	High	SPT	EDD	487.05
Proposed	1	NOP	High	High	SPT	LWKR	457.18
Proposed	1	NOP	High	High	SPT	MWKR	487.05
Proposed	1	NOP	High	High	EDD	SPT	369.45
Proposed	1	NOP	High	High	EDD	EDD	526.71
Proposed	1	NOP	High	High	EDD	LWKR	418.93
Proposed	1	NOP	High	High	EDD	MWKR	540.72
Proposed	1	TWK	Low	Low	FIFO	SPT	225.85
Proposed	1	TWK	Low	Low	FIFO	EDD	185.58
Proposed	1	TWK	Low	Low	FIFO	LWKR	185.09
Proposed	1	TWK	Low	Low	FIFO	MWKR	345.73
Proposed	1	TWK	Low	Low	SPT	SPT	203.02
Proposed	1	TWK	Low	Low	SPT	EDD	161.59

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Proposed	1	TWK	Low	Low	SPT	LWKR	161.10
Proposed	1	TWK	Low	Low	SPT	MWKR	321.73
Proposed	1	TWK	Low	Low	EDD	SPT	464.38
Proposed	1	TWK	Low	Low	EDD	EDD	464.96
Proposed	1	TWK	Low	Low	EDD	LWKR	348.46
Proposed	1	TWK	Low	Low	EDD	MWKR	602.56
Proposed	1	TWK	Low	High	FIFO	SPT	282.63
Proposed	1	TWK	Low	High	FIFO	EDD	185.01
Proposed	1	TWK	Low	High	FIFO	LWKR	185.01
Proposed	1	TWK	Low	High	FIFO	MWKR	181.87
Proposed	1	TWK	Low	High	SPT	SPT	428.07
Proposed	1	TWK	Low	High	SPT	EDD	472.52
Proposed	1	TWK	Low	High	SPT	LWKR	381.39
Proposed	1	TWK	Low	High	SPT	MWKR	469.31
Proposed	1	TWK	Low	High	EDD	SPT	515.96
Proposed	1	TWK	Low	High	EDD	EDD	509.46
Proposed	1	TWK	Low	High	EDD	LWKR	519.98
Proposed	1	TWK	Low	High	EDD	MWKR	509.46
Proposed	1	TWK	High	Low	FIFO	SPT	524.38
Proposed	1	TWK	High	Low	FIFO	EDD	524.96
Proposed	1	TWK	High	Low	FIFO	LWKR	283.97
Proposed	1	TWK	High	Low	FIFO	MWKR	602.56
Proposed	1	TWK	High	Low	SPT	SPT	364.18
Proposed	1	TWK	High	Low	SPT	EDD	208.17
Proposed	1	TWK	High	Low	SPT	LWKR	335.15
Proposed	1	TWK	High	Low	SPT	MWKR	364.18
Proposed	1	TWK	High	Low	EDD	SPT	364.18

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Proposed	1	TWK	High	Low	EDD	EDD	246.89
Proposed	1	TWK	High	Low	EDD	LWKR	262.91
Proposed	1	TWK	High	Low	EDD	MWKR	364.18
Proposed	1	TWK	High	High	FIFO	SPT	722.94
Proposed	1	TWK	High	High	FIFO	EDD	976.11
Proposed	1	TWK	High	High	FIFO	LWKR	343.63
Proposed	1	TWK	High	High	FIFO	MWKR	950.34
Proposed	1	TWK	High	High	SPT	SPT	728.07
Proposed	1	TWK	High	High	SPT	EDD	472.52
Proposed	1	TWK	High	High	SPT	LWKR	728.07
Proposed	1	TWK	High	High	SPT	MWKR	469.31
Proposed	1	TWK	High	High	EDD	SPT	532.09
Proposed	1	TWK	High	High	EDD	EDD	571.84
Proposed	1	TWK	High	High	EDD	LWKR	556.62
Proposed	1	TWK	High	High	EDD	MWKR	532.09
Proposed	1	CON	Low	Low	FIFO	SPT	399.87
Proposed	1	CON	Low	Low	FIFO	EDD	425.25
Proposed	1	CON	Low	Low	FIFO	LWKR	415.26
Proposed	1	CON	Low	Low	FIFO	MWKR	399.87
Proposed	1	CON	Low	Low	SPT	SPT	216.64
Proposed	1	CON	Low	Low	SPT	EDD	233.77
Proposed	1	CON	Low	Low	SPT	LWKR	233.28
Proposed	1	CON	Low	Low	SPT	MWKR	375.87
Proposed	1	CON	Low	Low	EDD	SPT	288.76
Proposed	1	CON	Low	Low	EDD	EDD	288.76
Proposed	1	CON	Low	Low	EDD	LWKR	295.62
Proposed	1	CON	Low	Low	EDD	MWKR	383.49

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Proposed	1	CON	Low	High	FIFO	SPT	465.03
Proposed	1	CON	Low	High	FIFO	EDD	424.55
Proposed	1	CON	Low	High	FIFO	LWKR	333.81
Proposed	1	CON	Low	High	FIFO	MWKR	474.50
Proposed	1	CON	Low	High	SPT	SPT	368.24
Proposed	1	CON	Low	High	SPT	EDD	352.24
Proposed	1	CON	Low	High	SPT	LWKR	326.70
Proposed	1	CON	Low	High	SPT	MWKR	444.32
Proposed	1	CON	Low	High	EDD	SPT	569.20
Proposed	1	CON	Low	High	EDD	EDD	492.30
Proposed	1	CON	Low	High	EDD	LWKR	476.31
Proposed	1	CON	Low	High	EDD	MWKR	488.43
Proposed	1	CON	High	Low	FIFO	SPT	405.29
Proposed	1	CON	High	Low	FIFO	EDD	398.64
Proposed	1	CON	High	Low	FIFO	LWKR	454.57
Proposed	1	CON	High	Low	FIFO	MWKR	419.30
Proposed	1	CON	High	Low	SPT	SPT	449.42
Proposed	1	CON	High	Low	SPT	EDD	269.42
Proposed	1	CON	High	Low	SPT	LWKR	404.37
Proposed	1	CON	High	Low	SPT	MWKR	449.42
Proposed	1	CON	High	Low	EDD	SPT	518.13
Proposed	1	CON	High	Low	EDD	EDD	522.48
Proposed	1	CON	High	Low	EDD	LWKR	485.35
Proposed	1	CON	High	Low	EDD	MWKR	511.64
Proposed	1	CON	High	High	FIFO	SPT	634.68
Proposed	1	CON	High	High	FIFO	EDD	654.20
Proposed	1	CON	High	High	FIFO	LWKR	534.20

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Proposed	1	CON	High	High	FIFO	MWKR	654.20
Proposed	1	CON	High	High	SPT	SPT	343.74
Proposed	1	CON	High	High	SPT	EDD	274.83
Proposed	1	CON	High	High	SPT	LWKR	278.85
Proposed	1	CON	High	High	SPT	MWKR	454.34
Proposed	1	CON	High	High	EDD	SPT	571.90
Proposed	1	CON	High	High	EDD	EDD	565.25
Proposed	1	CON	High	High	EDD	LWKR	621.18
Proposed	1	CON	High	High	EDD	MWKR	585.92
Proposed	1	RDM	Low	Low	FIFO	SPT	1262.30
Proposed	1	RDM	Low	Low	FIFO	EDD	1022.30
Proposed	1	RDM	Low	Low	FIFO	LWKR	1022.30
Proposed	1	RDM	Low	Low	FIFO	MWKR	1262.30
Proposed	1	RDM	Low	Low	SPT	SPT	803.89
Proposed	1	RDM	Low	Low	SPT	EDD	803.89
Proposed	1	RDM	Low	Low	SPT	LWKR	742.10
Proposed	1	RDM	Low	Low	SPT	MWKR	1308.82
Proposed	1	RDM	Low	Low	EDD	SPT	852.96
Proposed	1	RDM	Low	Low	EDD	EDD	852.96
Proposed	1	RDM	Low	Low	EDD	LWKR	867.36
Proposed	1	RDM	Low	Low	EDD	MWKR	846.46
Proposed	1	RDM	Low	High	FIFO	SPT	1306.79
Proposed	1	RDM	Low	High	FIFO	EDD	966.32
Proposed	1	RDM	Low	High	FIFO	LWKR	966.32
Proposed	1	RDM	Low	High	FIFO	MWKR	1446.32
Proposed	1	RDM	Low	High	SPT	SPT	1476.71
Proposed	1	RDM	Low	High	SPT	EDD	1370.19

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Proposed	1	RDM	Low	High	SPT	LWKR	1312.84
Proposed	1	RDM	Low	High	SPT	MWKR	1099.43
Proposed	1	RDM	Low	High	EDD	SPT	852.96
Proposed	1	RDM	Low	High	EDD	EDD	852.96
Proposed	1	RDM	Low	High	EDD	LWKR	867.36
Proposed	1	RDM	Low	High	EDD	MWKR	846.46
Proposed	1	RDM	High	Low	FIFO	SPT	1157.41
Proposed	1	RDM	High	Low	FIFO	EDD	842.33
Proposed	1	RDM	High	Low	FIFO	LWKR	882.98
Proposed	1	RDM	High	Low	FIFO	MWKR	1157.41
Proposed	1	RDM	High	Low	SPT	SPT	877.09
Proposed	1	RDM	High	Low	SPT	EDD	901.84
Proposed	1	RDM	High	Low	SPT	LWKR	881.32
Proposed	1	RDM	High	Low	SPT	MWKR	891.10
Proposed	1	RDM	High	Low	EDD	SPT	877.09
Proposed	1	RDM	High	Low	EDD	EDD	901.84
Proposed	1	RDM	High	Low	EDD	LWKR	926.37
Proposed	1	RDM	High	Low	EDD	MWKR	891.10
Proposed	1	RDM	High	High	FIFO	SPT	1202.30
Proposed	1	RDM	High	High	FIFO	EDD	1202.30
Proposed	1	RDM	High	High	FIFO	LWKR	1137.26
Proposed	1	RDM	High	High	FIFO	MWKR	1202.30
Proposed	1	RDM	High	High	SPT	SPT	896.39
Proposed	1	RDM	High	High	SPT	EDD	921.13
Proposed	1	RDM	High	High	SPT	LWKR	850.36
Proposed	1	RDM	High	High	SPT	MWKR	896.39
Proposed	1	RDM	High	High	EDD	SPT	756.86

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Proposed	1	RDM	High	High	EDD	EDD	781.61
Proposed	1	RDM	High	High	EDD	LWKR	790.36
Proposed	1	RDM	High	High	EDD	MWKR	896.39
Old	1	NOP	Low	Low	FIFO	SPT	398.05
Old	1	NOP	Low	Low	FIFO	EDD	351.71
Old	1	NOP	Low	Low	FIFO	LWKR	351.71
Old	1	NOP	Low	Low	FIFO	MWKR	351.71
Old	1	NOP	Low	Low	SPT	SPT	254.22
Old	1	NOP	Low	Low	SPT	EDD	326.61
Old	1	NOP	Low	Low	SPT	LWKR	326.61
Old	1	NOP	Low	Low	SPT	MWKR	326.61
Old	1	NOP	Low	Low	EDD	SPT	372.95
Old	1	NOP	Low	Low	EDD	EDD	326.61
Old	1	NOP	Low	Low	EDD	LWKR	326.61
Old	1	NOP	Low	Low	EDD	MWKR	326.61
Old	1	NOP	Low	High	FIFO	SPT	569.28
Old	1	NOP	Low	High	FIFO	EDD	396.20
Old	1	NOP	Low	High	FIFO	LWKR	569 28
Old	1	NOP	Low	High	FIFO	MWKR	964.90
Old	1	NOP	Low	High	SPT	SPT	338.96
Old	1	NOP	Low	High	SPT	EDD	446.22
Old	1	NOP	Low	High	SPT	LWKR	338.96
Old	1	NOP	Low	High	SPT	MWKR	632.40
Old	1	NOP	Low	High	EDD	SPT	206.22
Old	1	NOP	Low	High	EDD	EDD	206.22
Old	1	NOP	Low	High	EDD	LWKR	206.22
Old	1	NOP	Low	High	EDD	MWKR	632.40

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Old	1	NOP	High	Low	FIFO	SPT	494.78
Old	1	NOP	High	Low	FIFO	EDD	494.78
Old	1	NOP	High	Low	FIFO	LWKR	521.77
Old	1	NOP	High	Low	FIFO	MWKR	494.78
Old	1	NOP	High	Low	SPT	SPT	414.22
Old	1	NOP	High	Low	SPT	EDD	143.10
Old	1	NOP	High	Low	SPT	LWKR	143.10
Old	1	NOP	High	Low	SPT	MWKR	297.83
Old	1	NOP	High	Low	EDD	SPT	414.22
Old	1	NOP	High	Low	EDD	EDD	143.10
Old	1	NOP	High	Low	EDD	LWKR	143.10
Old	1	NOP	High	Low	EDD	MWKR	297.83
Old	1	NOP	High	High	FIFO	SPT	565.96
Old	1	NOP	High	High	FIFO	EDD	704.05
Old	1	NOP	High	High	FIFO	LWKR	526.04
Old	1	NOP	High	High	FIFO	MWKR	734.78
Old	1	NOP	High	High	SPT	SPT	252.59
Old	1	NOP	High	High	SPT	EDD	409.85
Old	1	NOP	High	High	SPT	LWKR	532.58
Old	1	NOP	High	High	SPT	MWKR	409.85
Old	1	NOP	High	High	EDD	SPT	252.59
Old	1	NOP	High	High	EDD	EDD	409.85
Old	1	NOP	High	High	EDD	LWKR	532.31
Old	1	NOP	High	High	EDD	MWKR	409.85
Old	1	TWK	Low	Low	FIFO	SPT	222.63
Old	1	TWK	Low	Low	FIFO	EDD	181.87
Old	1	TWK	Low	Low	FIFO	LWKR	181.87

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Old	1	TWK	Low	Low	FIFO	MWKR	181.87
Old	1	TWK	Low	Low	SPT	SPT	198.63
Old	1	TWK	Low	Low	SPT	EDD	157.88
Old	1	TWK	Low	Low	SPT	LWKR	157.88
Old	1	TWK	Low	Low	SPT	MWKR	157.88
Old	1	TWK	Low	Low	EDD	SPT	624.58
Old	1	TWK	Low	Low	EDD	EDD	624.58
Old	1	TWK	Low	Low	EDD	LWKR	426.55
Old	1	TWK	Low	Low	EDD	MWKR	624.58
Old	1	TWK	Low	High	FIFO	SPT	282.63
Old	1	TWK	Low	High	FIFO	EDD	181.87
Old	1	TWK	Low	High	FIFO	LWKR	181.87
Old	1	TWK	Low	High	FIFO	MWKR	181.87
Old	1	TWK	Low	High	SPT	SPT	466.76
Old	1	TWK	Low	High	SPT	EDD	466.76
Old	1	TWK	Low	High	SPT	LWKR	466.76
Old	1	TWK	Low	High	SPT	MWKR	466.76
Old	1	TWK	Low	High	EDD	SPT	342.47
Old	1	TWK	Low	High	EDD	EDD	429.06
Old	1	TWK	Low	High	EDD	LWKR	355.28
Old	1	TWK	Low	High	EDD	MWKR	429.06
Old	1	TWK	High	Low	FIFO	SPT	375.74
Old	1	TWK	High	Low	FIFO	EDD	334.98
Old	1	TWK	High	Low	FIFO	LWKR	334.98
Old	1	TWK	High	Low	FIFO	MWKR	334.98
Old	1	TWK	High	Low	SPT	SPT	199.92
Old	1	TWK	High	Low	SPT	EDD	157.88

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Old	1	TWK	High	Low	SPT	LWKR	157.88
Old	1	TWK	High	Low	SPT	MWKR	157.88
Old	1	TWK	High	Low	EDD	SPT	533.32
Old	1	TWK	High	Low	EDD	EDD	533.32
Old	1	TWK	High	Low	EDD	LWKR	498.62
Old	1	TWK	High	Low	EDD	MWKR	533.32
Old	1	TWK	High	High	FIFO	SPT	727.52
Old	1	TWK	High	High	FIFO	EDD	762.82
Old	1	TWK	High	High	FIFO	LWKR	440.81
Old	1	TWK	High	High	FIFO	MWKR	762.82
Old	1	TWK	High	High	SPT	SPT	466.76
Old	1	TWK	High	High	SPT	EDD	466.76
Old	1	TWK	High	High	SPT	LWKR	466.76
Old	1	TWK	High	High	SPT	MWKR	466.76
Old	1	TWK	High	High	EDD	SPT	342.47
Old	1	TWK	High	High	EDD	EDD	429.06
Old	1	TWK	High	High	EDD	LWKR	355.28
Old	1	TWK	High	High	EDD	MWKR	429.06
Old	1	CON	Low	Low	FIFO	SPT	415.87
Old	1	CON	Low	Low	FIFO	EDD	419.11
Old	1	CON	Low	Low	FIFO	LWKR	419.11
Old	1	CON	Low	Low	FIFO	MWKR	419.11
Old	1	CON	Low	Low	SPT	SPT	224.86
Old	1	CON	Low	Low	SPT	EDD	404.86
Old	1	CON	Low	Low	SPT	LWKR	224.86
Old	1	CON	Low	Low	SPT	MWKR	418.35
Old	1	CON	Low	Low	EDD	SPT	648.60

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Old	1	CON	Low	Low	EDD	EDD	648.60
Old	1	CON	Low	Low	EDD	LWKR	658.00
Old	1	CON	Low	Low	EDD	MWKR	648.60
Old	1	CON	Low	High	FIFO	SPT	516.52
Old	1	CON	Low	High	FIFO	EDD	429.10
Old	1	CON	Low	High	FIFO	LWKR	541.51
Old	1	CON	Low	High	FIFO	MWKR	429.10
Old	1	CON	Low	High	SPT	SPT	824.53
Old	1	CON	Low	High	SPT	EDD	325.29
Old	1	CON	Low	High	SPT	LWKR	824.53
Old	1	CON	Low	High	SPT	MWKR	675.83
Old	1	CON	Low	High	EDD	SPT	303.00
Old	1	CON	Low	High	EDD	EDD	403.86
Old	1	CON	Low	High	EDD	LWKR	413.25
Old	1	CON	Low	High	EDD	MWKR	405.01
Old	1	CON	High	Low	FIFO	SPT	818.39
Old	1	CON	High	Low	FIFO	EDD	758.39
Old	1	CON	High	Low	FIFO	LWKR	686.47
Old	1	CON	High	Low	FIFO	MWKR	758.39
Old	1	CON	High	Low	SPT	SPT	438.95
Old	1	CON	High	Low	SPT	EDD	282.95
Old	1	CON	High	Low	SPT	LWKR	438.95
Old	1	CON	High	Low	SPT	MWKR	438.95
Old	1	CON	High	Low	EDD	SPT	502.70
Old	1	CON	High	Low	EDD	EDD	474.94
Old	1	CON	High	Low	EDD	LWKR	502.70
Old	1	CON	High	Low	EDD	MWKR	694.82

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Old	1	CON	High	High	FIFO	SPT	683.82
Old	1	CON	High	High	FIFO	EDD	671.70
Old	1	CON	High	High	FIFO	LWKR	598.17
Old	1	CON	High	High	FIFO	MWKR	671.70
Old	1	CON	High	High	SPT	SPT	800.53
Old	1	CON	High	High	SPT	EDD	322.62
Old	1	CON	High	High	SPT	LWKR	920.53
Old	1	CON	High	High	SPT	MWKR	463.84
Old	1	CON	High	High	EDD	SPT	777.37
Old	1	CON	High	High	EDD	EDD	681.25
Old	1	CON	High	High	EDD	LWKR	790.18
Old	1	CON	High	High	EDD	MWKR	847.01
Old	1	RDM	Low	Low	FIFO	SPT	1050.23
Old	1	RDM	Low	Low	FIFO	EDD	766.61
Old	1	RDM	Low	Low	FIFO	LWKR	766.61
Old	1	RDM	Low	Low	FIFO	MWKR	978.34
Old	1	RDM	Low	Low	SPT	SPT	786.23
Old	1	RDM	Low	Low	SPT	EDD	888.24
Old	1	RDM	Low	Low	SPT	LWKR	739.51
Old	1	RDM	Low	Low	SPT	MWKR	828.24
Old	1	RDM	Low	Low	EDD	SPT	1266.23
Old	1	RDM	Low	Low	EDD	EDD	1042.61
Old	1	RDM	Low	Low	EDD	LWKR	1042.61
Old	1	RDM	Low	Low	EDD	MWKR	1038.34
Old	1	RDM	Low	High	FIFO	SPT	1290.23
Old	1	RDM	Low	High	FIFO	EDD	946.61
Old	1	RDM	Low	High	FIFO	LWKR	946.61

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Old	1	RDM	Low	High	FIFO	MWKR	1122.34
Old	1	RDM	Low	High	SPT	SPT	1746.23
Old	1	RDM	Low	High	SPT	EDD	1236.98
Old	1	RDM	Low	High	SPT	LWKR	1663.51
Old	1	RDM	Low	High	SPT	MWKR	1398.34
Old	1	RDM	Low	High	EDD	SPT	1184.24
Old	1	RDM	Low	High	EDD	EDD	1042.61
Old	1	RDM	Low	High	EDD	LWKR	922.61
Old	1	RDM	Low	High	EDD	MWKR	1038.34
Old	1	RDM	High	Low	FIFO	SPT	844.37
Old	1	RDM	High	Low	FIFO	EDD	844.37
Old	1	RDM	High	Low	FIFO	LWKR	844.37
Old	1	RDM	High	Low	FIFO	MWKR	964.37
Old	1	RDM	High	Low	SPT	SPT	1128.23
Old	1	RDM	High	Low	SPT	EDD	1084.62
Old	1	RDM	High	Low	SPT	LWKR	989.89
Old	1	RDM	High	Low	SPT	MWKR	1320.35
Old	1	RDM	High	Low	EDD	SPT	1036.74
Old	1	RDM	High	Low	EDD	EDD	919.65
Old	1	RDM	High	Low	EDD	LWKR	1029.14
Old	1	RDM	High	Low	EDD	MWKR	1175.62
Old	1	RDM	High	High	FIFO	SPT	1230.23
Old	1	RDM	High	High	FIFO	EDD	1126.61
Old	1	RDM	High	High	FIFO	LWKR	1126.61
Old	1	RDM	High	High	FIFO	MWKR	1242.34
Old	1	RDM	High	High	SPT	SPT	721.02
Old	1	RDM	High	High	SPT	EDD	721.02

ตารางที่ ข.3 แสดงค่าเวลาล่าช้าของชิ้นงานในสภาวะการทดลองต่าง ๆ

Heuristic	Problem	DueDate	ETR Priority	OTR Priority	Reallocate	Dispatch	Tardiness
Old	1	RDM	High	High	SPT	LWKR	770.51
Old	1	RDM	High	High	SPT	MWKR	926.24
Old	1	RDM	High	High	EDD	SPT	1424.23
Old	1	RDM	High	High	EDD	EDD	1140.62
Old	1	RDM	High	High	EDD	LWKR	1039.51
Old	1	RDM	High	High	EDD	MWKR	1340.35

ประวัติผู้เขียนวิทยานิพนธ์

นางสาวสาลินี สันติธีรากุล เกิดเมื่อวันที่ 13 พฤศจิกายน พ.ศ 2522 ที่ จ.เชียงใหม่ สำเร็จการศึกษาระดับปริญญาบัณฑิตจากคณะวิศวกรรมศาสตร์ สาขาวิศวกรรมอุตสาหการ จากมหาวิทยาลัยเชียงใหม่ ในปีการศึกษา 2544 จากนั้นได้เข้าศึกษาต่อในหลักสูตรวิศวกรรมศาสตรมหาบัณฑิต สาขาวิศวกรรมอุตสาหการ คณะวิศวกรรมศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ในปีการศึกษา 2545