PARALLEL MACHINE SCHEDULING

1.introduction

- generalization of the single machine
- special case of flow shop
- decomposition procedures for multistage systems

2. the makespan without preemption: $P_m||C_{max}$

- ***LPT(longest process time first) rule*** : yield a good bound, not optimal *(page95)*
- ***LFJ(least flexible job fist) rule***: optimal for $P_m| p_j = 1, M_j | C_{max}$ *(page103)*

3. the makespan with preemption

- ***An optimal algorithm: more practical in practise*** *(page106)*
- ***LRPT largest remaining process time fist***: optimal rule for discrete time and continues time $P_m |r_j, prmp |C_{max}$(可以指定一个整数的时间间隔来切换，得到方案后再重新整理，使方案更合理)
- ***LRPT-FM largest remaining process time fist to the fast machine***: optimal rule for discrete time and continues time $Q_m| r_j, prmp |C_{max}$ (可以指定一个整数的时间间隔来切换，得到方案后再重新整理，使方案更合理)

4. the total completion time without preemptions

- ***SPT shortest process time first rule*** : optimal for both $P_m||\sum C_j$ **and** $1||\sum C_j$
- ***WSPT weight shortest process time first rule*** : optimal for $1||\sum w_j C_j$, but not optimal for $P_m||\sum w_j C_j$
- ***LFJ(least flexible job fist) rule***: optimal for $P_m||\sum C_j$

5. the total completion time with preemptions

- ***SPT shortest process time first rule***: optimal for $P_m \mid prmp \mid \sum C_j$
- ***SRPT-FM shortest remian process time with fast machine first rule***: optimal for $Q_m \mid prmp \mid \sum C_j$