KLAUS MA

ESTIMATION

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Project Title: Heuristic based job scheduling for grid environment using GridSim
Project Description: Using Extend Great Deluge Algorithm to find an optimal solution for Jobs on resources

Contract Number: oDesk#14941221
Project URL: https://gitlab.com/klausma/oDesk-14941221
Terms: N/A Days

Description	ETA	Deliveries	Cost
#1: design the follow of the algorithm	April 27	Design doc	$ 30
#2: coding based on the design	May 4	Source code	$ 90
#3: online demo with client, and description of the implementing	May 5	Online demo	$ 10
		Total	$ 130
	oDesk	10.00%	$ 13
		Incoming	$ 117

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SOLUTIONS

Items	Description
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Solution	**Pre-conditions:**
	Data structures of solution (S): ETC matrix for resources and jobs
	Data source: Jobs: generate jobs by Lublin model, Resources: generate resources randomly (1. Each resource have one machine, 2. each machine has one to five PEs, 3. PEs Rating varies from 10-60 MIPS, 4. Cost 3-5$)
	Neighbourhood: Random generates neighbourhood which meet the hard constraints; if more intelligent algorithm is necessary, re-estimate the schedule/budget
	Cost function: the sum of the number violation of soft constraints
	
	Steps:
	 - init the ETC matrix that meet the hard constraints
	 - calculate the cost of the init ETC matrix
	 - init level & decay
	 - while loop < 1000 times (configurable) & (improved by new decay: probability of annealing > 0.5) then
	    get next neighbourhood (S*)
	    calculate the cost of S*
	    if (f(S*) <= f(S) || f(S*) <= level) then S=S*
	    level = level - decay
	    if probability of annealing < 0.5 (configurable)
	      level = f(S)
	      decay = new rate by second cooling parameters
	 - output the scheduling result of ETC matrix
	 - simulate by GridSim

Platform	JDK 1.8, OS: Linux, GridSim: 5.2
Deliveries	*.tar.gz, README.txt