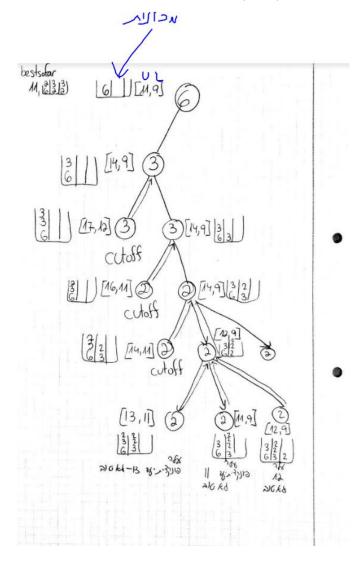אז הכל תקין(בערך). תזכורת, יש לנו 3 מכונות. מצורף ציור של חלק מהעץ על מנת להסביר את הקלט.

input selected: (6, 3, 3, 2, 2, 2) size 6
#########bestSolutionFound just got replaced "Target function=11 Number of Machines=3 . Content: <6,2>,<2,3>,<2,3>" #########

Current active is the job on hand. The print is at the parent level. In this case it's the root.
"current active(job=3)" "U=11 L=9. Machines:<6>. jobs Left: <3,2,2,2>"
Job on hand is 3
The [U,L] of root is [11,9]
The machines state is: m1 has 6, m2 and m3 are empty
Jobs left 3,2,2,2 (6 was assigned. The first 3 job is on hand)

"son0" "U=14 L=9. Machines:<6,3>. jobs Left: <3,2,2,2>"
This is the first son of the root (there are 2: 3 goes on the 6 or 3 gets a new machine)
When the tree will unfold back to this level there will be a "son1" print.
The way to understand it's son1 of root is the state of the machines.
So unfortunately for now, there could be son0 followed by son0 ...
Maybe to fix this we will add a tab on each tree level.

"current active(job=3)" "U=14 L=9. Machines:<6,3>. jobs Left: <2,2,2>"
"son0" "U=17 L=12. Machines:<6,3,3>. jobs Left: <2,2,2>"
"CUTOFF was made. job on hand: <3>. lower bound=12 is bigger than best solution so far=11"
"son1" "U=14 L=9. Machines:<6,3>,<3>. jobs Left: <2,2,2>"

"current active(job=2)" "U=14 L=9. Machines:<6,3>,<3>. jobs Left: <2,2>"
"son0" "U=16 L=11. Machines:<6,3,2>,<3>. jobs Left: <2,2>"
"CUTOFF was made. job on hand: <2>. lower bound=11 is bigger than best solution so far=11"
"son1" "U=14 L=9. Machines:<6,3>,<3,2>. jobs Left: <2,2>"

"current active(job=2)" "U=14 L=9. Machines:<6,3>,<3,2>. jobs Left: <2>"
"son0" "U=14 L=11. Machines:<6,3,2>,<3,2>. jobs Left: <2>"
"CUTOFF was made. job on hand: <2>. lower bound=11 is bigger than best solution so far=11"

"son1" "U=12 L=9. Machines:<6,3>,<3,2,2>. jobs Left: <2>"

"current active(job=2)" "U=12 L=9. Machines:<6,3>,<3,2,2>. jobs Left: <>"
"son0" "U=13 L=11. Machines:<6,3,2>,<3,2,2>. jobs Left: <>"
leaf: "Target function=13 Number of Machines=2 . Content: <6,3,2>,<3,2,2>"
"son1" "U=11 L=9. Machines:<6,3>,<3,2,2,2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=2 . Content: <6,3>,<3,2,2,2>"
"son2" "U=12 L=9. Machines:<6,3>,<3,2,2>,<2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=3 . Content: <6,3>,<3,2,2>,<2>"
"son2" "U=12 L=9. Machines:<6,3>,<3,2>,<2>. jobs Left: <2>"

"current active(job=2)" "U=12 L=9. Machines:<6,3>,<3,2>,<2>. jobs Left: <>"
"son0" "U=14 L=11. Machines:<6,3,2>,<3,2>,<2>. jobs Left: <>"
leaf: "Target function=14 Number of Machines=3 . Content: <6,3,2>,<3,2>,<2>"
"son1" "U=12 L=9. Machines:<6,3>,<3,2,2>,<2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=3 . Content: <6,3>,<3,2,2>,<2>"
"son2" "U=12 L=9. Machines:<6,3>,<3,2>,<2,2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=3 . Content: <6,3>,<3,2>,<2,2>"
"son2" "U=12 L=9. Machines:<6,3>,<3>,<2>. jobs Left: <2,2>"

"current active(job=2)" "U=12 L=9. Machines:<6,3>,<3>,<2>. jobs Left: <2>"
"son0" "U=14 L=11. Machines:<6,3,2>,<3>,<2>. jobs Left: <2>"
"CUTOFF was made. job on hand: <2>. lower bound=11 is bigger than best solution so far=11"
"son1" "U=12 L=9. Machines:<6,3>,<3,2>,<2>. jobs Left: <2>"

"current active(job=2)" "U=12 L=9. Machines:<6,3>,<3,2>,<2>. jobs Left: <>"
"son0" "U=14 L=11. Machines:<6,3,2>,<3,2>,<2>. jobs Left: <>"
leaf: "Target function=14 Number of Machines=3 . Content: <6,3,2>,<3,2>,<2>"
"son1" "U=12 L=9. Machines:<6,3>,<3,2,2>,<2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=3 . Content: <6,3>,<3,2,2>,<2>"
"son2" "U=12 L=9. Machines:<6,3>,<3,2>,<2,2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=3 . Content: <6,3>,<3,2>,<2,2>"

"son2" "U=12 L=9. Machines:<6,3>,<3>,<2,2>. jobs Left: <2>"

"current active(job=2)" "U=12 L=9. Machines:<6,3>,<3>,<2,2>. jobs Left: <>"
"son0" "U=14 L=11. Machines:<6,3,2>,<3>,<2,2>. jobs Left: <>"
leaf: "Target function=14 Number of Machines=3 . Content: <6,3,2>,<3>,<2,2>"
"son1" "U=12 L=9. Machines:<6,3>,<3,2>,<2,2>. jobs Left: <>"
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"son2" "U=12 L=9. Machines:<6,3>,<3>,<2,2,2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=3 . Content: <6,3>,<3>,<2,2,2>"
"son1" "U=11 L=9. Machines:<6>,<3>. jobs Left: <3,2,2,2>"

"current active(job=3)" "U=11 L=9. Machines:<6>,<3>. jobs Left: <2,2,2>"
"son0" "U=14 L=9. Machines:<6,3>,<3>. jobs Left: <2,2,2>"

"current active(job=2)" "U=14 L=9. Machines:<6,3>,<3>. jobs Left: <2,2>"
"son0" "U=16 L=11. Machines:<6,3,2>,<3>. jobs Left: <2,2>"
"CUTOFF was made. job on hand: <2>. lower bound=11 is bigger than best solution so far=11"
"son1" "U=14 L=9. Machines:<6,3>,<3,2>. jobs Left: <2,2>"

"current active(job=2)" "U=14 L=9. Machines:<6,3>,<3,2>. jobs Left: <2>"
"son0" "U=14 L=11. Machines:<6,3,2>,<3,2>. jobs Left: <2>"
"CUTOFF was made. job on hand: <2>. lower bound=11 is bigger than best solution so far=11"
"son1" "U=12 L=9. Machines:<6,3>,<3,2,2>. jobs Left: <2>"

"current active(job=2)" "U=12 L=9. Machines:<6,3>,<3,2,2>. jobs Left: <>"
"son0" "U=13 L=11. Machines:<6,3,2>,<3,2,2>. jobs Left: <>"
leaf: "Target function=13 Number of Machines=2 . Content: <6,3,2>,<3,2,2>"
"son1" "U=11 L=9. Machines:<6,3>,<3,2,2,2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=2 . Content: <6,3>,<3,2,2,2>"
"son2" "U=12 L=9. Machines:<6,3>,<3,2,2>,<2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=3 . Content: <6,3>,<3,2,2>,<2>"
"son2" "U=12 L=9. Machines:<6,3>,<3,2>,<2>. jobs Left: <2>"

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"son0" "U=14 L=11. Machines:<6,3,2>,<3,2>,<2>. jobs Left: <>"
leaf: "Target function=14 Number of Machines=3 . Content: <6,3,2>,<3,2>,<2>"
"son1" "U=12 L=9. Machines:<6,3>,<3,2,2>,<2>. jobs Left: <>"
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"son2" "U=12 L=9. Machines:<6,3>,<3,2>,<2,2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=3 . Content: <6,3>,<3,2>,<2,2>"
"son2" "U=12 L=9. Machines:<6,3>,<3>,<2>. jobs Left: <2,2>"

"current active(job=2)" "U=12 L=9. Machines:<6,3>,<3>,<2>. jobs Left: <2>"
"son0" "U=14 L=11. Machines:<6,3,2>,<3>,<2>. jobs Left: <2>"
"CUTOFF was made. job on hand: <2>. lower bound=11 is bigger than best solution so far=11"
"son1" "U=12 L=9. Machines:<6,3>,<3,2>,<2>. jobs Left: <2>"

"current active(job=2)" "U=12 L=9. Machines:<6,3>,<3,2>,<2>. jobs Left: <>"
"son0" "U=14 L=11. Machines:<6,3,2>,<3,2>,<2>. jobs Left: <>"
leaf: "Target function=14 Number of Machines=3 . Content: <6,3,2>,<3,2>,<2>"
"son1" "U=12 L=9. Machines:<6,3>,<3,2,2>,<2>. jobs Left: <>"
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"son2" "U=12 L=9. Machines:<6,3>,<3,2>,<2,2>. jobs Left: <>"
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"son0" "U=14 L=11. Machines:<6,3,2>,<3>,<2,2>. jobs Left: <>"
leaf: "Target function=14 Number of Machines=3 . Content: <6,3,2>,<3>,<2,2>"
"son1" "U=12 L=9. Machines:<6,3>,<3,2>,<2,2>. jobs Left: <>"
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"son2" "U=12 L=9. Machines:<6,3>,<3>,<2,2,2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=3 . Content: <6,3>,<3>,<2,2,2>"
"son1" "U=11 L=9. Machines:<6>,<3,3>. jobs Left: <2,2,2>"

"current active(job=2)" "U=11 L=9. Machines:<6>,<3,3>. jobs Left: <2,2>"
"son0" "U=13 L=9. Machines:<6,2>,<3,3>. jobs Left: <2,2>"

"current active(job=2)" "U=13 L=9. Machines:<6,2>,<3,3>. jobs Left: <2>"
"son0" "U=13 L=10. Machines:<6,2,2>,<3,3>. jobs Left: <2>"

"current active(job=2)" "U=13 L=10. Machines:<6,2,2>,<3,3>. jobs Left: <>"
"son0" "U=14 L=12. Machines:<6,2,2,2>,<3,3>. jobs Left: <>"
leaf: "Target function=14 Number of Machines=2 . Content: <6,2,2,2>,<3,3>"
"son1" "U=12 L=10. Machines:<6,2,2>,<3,3,2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=2 . Content: <6,2,2>,<3,3,2>"
"son2" "U=13 L=10. Machines:<6,2,2>,<3,3>,<2>. jobs Left: <>"
leaf: "Target function=13 Number of Machines=3 . Content: <6,2,2>,<3,3>,<2>"
"son1" "U=11 L=9. Machines:<6,2>,<3,3,2>. jobs Left: <2>"

"current active(job=2)" "U=11 L=9. Machines:<6,2>,<3,3,2>. jobs Left: <>"
"son0" "U=12 L=10. Machines:<6,2,2>,<3,3,2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=2 . Content: <6,2,2>,<3,3,2>"
"son1" "U=12 L=10. Machines:<6,2>,<3,3,2,2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=2 . Content: <6,2>,<3,3,2,2>"
"son2" "U=11 L=9. Machines:<6,2>,<3,3,2>,<2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=3 . Content: <6,2>,<3,3,2>,<2>"
"son2" "U=11 L=9. Machines:<6,2>,<3,3>,<2>. jobs Left: <2>"

"current active(job=2)" "U=11 L=9. Machines:<6,2>,<3,3>,<2>. jobs Left: <>"
"son0" "U=13 L=10. Machines:<6,2,2>,<3,3>,<2>. jobs Left: <>"
leaf: "Target function=13 Number of Machines=3 . Content: <6,2,2>,<3,3>,<2>"
"son1" "U=11 L=9. Machines:<6,2>,<3,3,2>,<2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=3 . Content: <6,2>,<3,3,2>,<2>"
"son2" "U=11 L=9. Machines:<6,2>,<3,3>,<2,2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=3 . Content: <6,2>,<3,3>,<2,2>"

"son1" "U=11 L=9. Machines:<6>,<3,3,2>. jobs Left: <2,2>"

"current active(job=2)" "U=11 L=9. Machines:<6>,<3,3,2>. jobs Left: <2>"
"son0" "U=11 L=9. Machines:<6,2>,<3,3,2>. jobs Left: <2>"

"current active(job=2)" "U=11 L=9. Machines:<6,2>,<3,3,2>. jobs Left: <>"
"son0" "U=12 L=10. Machines:<6,2,2>,<3,3,2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=2 . Content: <6,2,2>,<3,3,2>"
"son1" "U=12 L=10. Machines:<6,2>,<3,3,2,2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=2 . Content: <6,2>,<3,3,2,2>"
"son2" "U=11 L=9. Machines:<6,2>,<3,3,2>,<2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=3 . Content: <6,2>,<3,3,2>,<2>"
"son1" "U=13 L=10. Machines:<6>,<3,3,2,2>. jobs Left: <2>"

"current active(job=2)" "U=13 L=10. Machines:<6>,<3,3,2,2>. jobs Left: <>"
"son0" "U=12 L=10. Machines:<6,2>,<3,3,2,2>. jobs Left: <>"
leaf: "Target function=12 Number of Machines=2 . Content: <6,2>,<3,3,2,2>"
"son1" "U=14 L=12. Machines:<6>,<3,3,2,2,2>. jobs Left: <>"
leaf: "Target function=14 Number of Machines=2 . Content: <6>,<3,3,2,2,2>"
"son2" "U=13 L=10. Machines:<6>,<3,3,2,2>,<2>. jobs Left: <>"
leaf: "Target function=13 Number of Machines=3 . Content: <6>,<3,3,2,2>,<2>"
"son2" "U=11 L=9. Machines:<6>,<3,3,2>,<2>. jobs Left: <2>"

"current active(job=2)" "U=11 L=9. Machines:<6>,<3,3,2>,<2>. jobs Left: <>"
"son0" "U=11 L=9. Machines:<6,2>,<3,3,2>,<2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=3 . Content: <6,2>,<3,3,2>,<2>"
"son1" "U=13 L=10. Machines:<6>,<3,3,2,2>,<2>. jobs Left: <>"
leaf: "Target function=13 Number of Machines=3 . Content: <6>,<3,3,2,2>,<2>"
"son2" "U=11 L=9. Machines:<6>,<3,3,2>,<2,2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=3 . Content: <6>,<3,3,2>,<2,2>"
"son2" "U=11 L=9. Machines:<6>,<3,3>,<2>. jobs Left: <2,2>"

"current active(job=2)" "U=11 L=9. Machines:<6>,<3,3>,<2>. jobs Left: <2>"
"son0" "U=11 L=9. Machines:<6,2>,<3,3>,<2>. jobs Left: <2>"

"current active(job=2)" "U=11 L=9. Machines:<6,2>,<3,3>,<2>. jobs Left: <>"
"son0" "U=13 L=10. Machines:<6,2,2>,<3,3>,<2>. jobs Left: <>"
leaf: "Target function=13 Number of Machines=3 . Content: <6,2,2>,<3,3>,<2>"
"son1" "U=11 L=9. Machines:<6,2>,<3,3,2>,<2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=3 . Content: <6,2>,<3,3,2>,<2>"
"son2" "U=11 L=9. Machines:<6,2>,<3,3>,<2,2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=3 . Content: <6,2>,<3,3>,<2,2>"
"son1" "U=11 L=9. Machines:<6>,<3,3,2>,<2>. jobs Left: <2>"

"current active(job=2)" "U=11 L=9. Machines:<6>,<3,3,2>,<2>. jobs Left: <>"
"son0" "U=11 L=9. Machines:<6,2>,<3,3,2>,<2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=3 . Content: <6,2>,<3,3,2>,<2>"
"son1" "U=13 L=10. Machines:<6>,<3,3,2,2>,<2>. jobs Left: <>"
leaf: "Target function=13 Number of Machines=3 . Content: <6>,<3,3,2,2>,<2>"
"son2" "U=11 L=9. Machines:<6>,<3,3,2>,<2,2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=3 . Content: <6>,<3,3,2>,<2,2>"
"son2" "U=11 L=9. Machines:<6>,<3,3>,<2,2>. jobs Left: <2>"

"current active(job=2)" "U=11 L=9. Machines:<6>,<3,3>,<2,2>. jobs Left: <>"
"son0" "U=11 L=9. Machines:<6,2>,<3,3>,<2,2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=3 . Content: <6,2>,<3,3>,<2,2>"
"son1" "U=11 L=9. Machines:<6>,<3,3,2>,<2,2>. jobs Left: <>"
leaf: "Target function=11 Number of Machines=3 . Content: <6>,<3,3,2>,<2,2>"
#########bestSolutionFound just got replaced "Target function=9 Number of Machines=3 . Content: <6>,<3,3>,<2,2,2>" #########
"son2" "U=9 L=9. Machines:<6>,<3,3>,<2,2,2>. jobs Left: <>"
leaf: "Target function=9 Number of Machines=3 . Content: <6>,<3,3>,<2,2,2>"
"son2" "U=11 L=9. Machines:<6>,<3>,<3>. jobs Left: <2,2,2>"
"CUTOFF was made. job on hand: <3>. lower bound=9 is bigger than best solution so far=9"
BEST FOUND: "Target function=9 Number of Machines=3 . Content: <6>,<3,3>,<2,2,2>"

nodes seen: 90 . run time: 0.015 seconds