Local Beam Search Parallel Programming

OUTLINE

- Parallel Programming
- Local Beam Search
- Use Parallel in Local beam search
    - Code
    - How it work
    - Result

Parallel Programming

Form of computation which many calculation are carried out simultaneously

(Speed Factor)

(Large amount of memory)

(Fault Tolerance)

(Computation Power)

(But)

(It Using some time to communication in each thread)

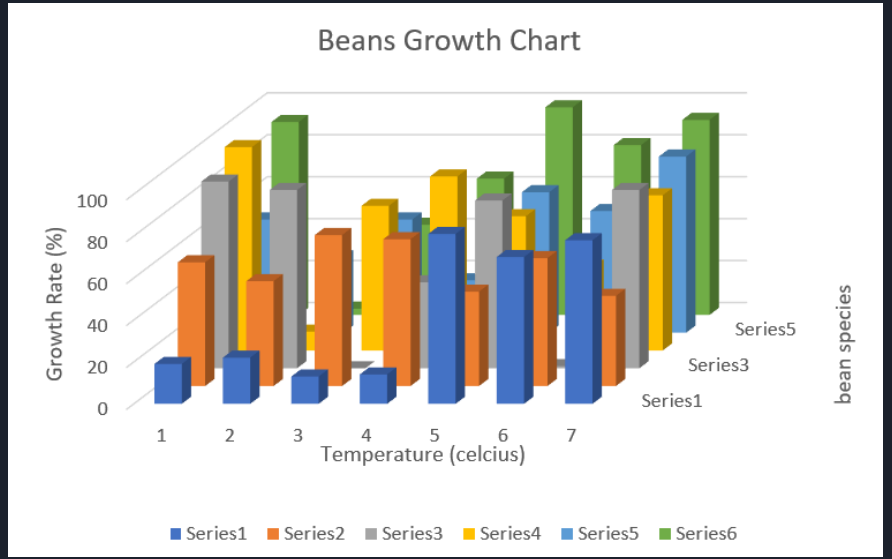
(The Output is Unpredictable)

Why Using Java

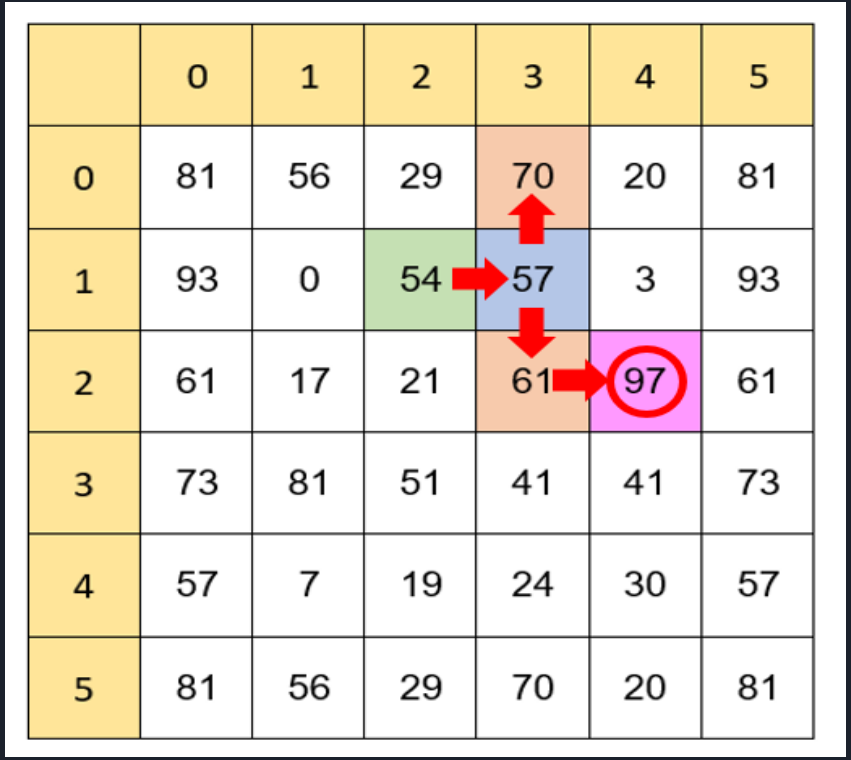
- It Shared Memory
- It easy to understand
- Our thread working same algorithm but in the different part

Local Beam Search

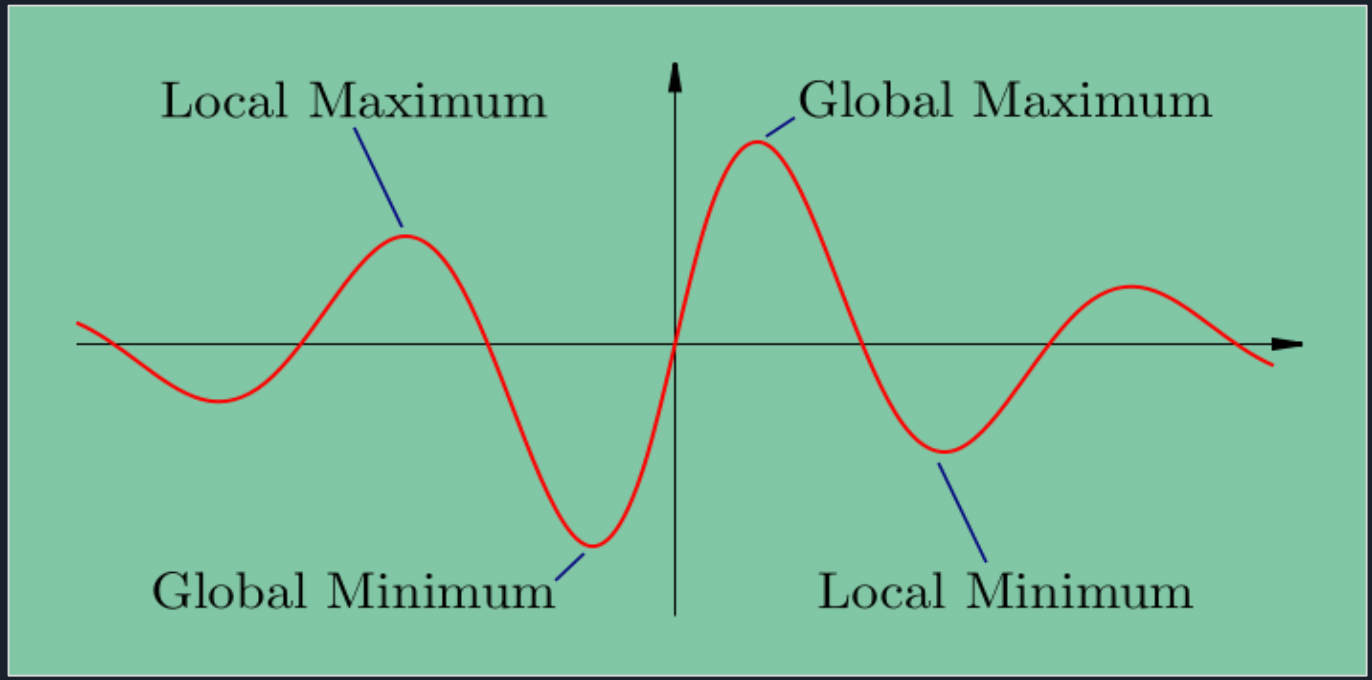
Temp/ species	Black Beans	Black-Eyed Peas	Kidney Beans	Red Beans	Soy Beans	White Beans	Green Lentils
5	19	59	89	97	54	92	19
10	22	50	85	9	36	3	22
15	13	72	12	69	54	43	13
20	14	70	41	83	25	65	14
25	81	45	80	64	67	99	81
30	70	61	1	40	58	81	70
35	78	43	85	74	84	93	78



```
function Beam-Search ( problem, k ) returns a solution
        state start with k randomly generated states
        Loop
                generate all successors of all k states
                if any of them is a solution then return it
                else select the k best successors
```



	0	1	2	3	4	5
0	81	56	29	70	20	81
1	93	0	54	57	3	93
2	61	17	21	61	97	61
3	73	81	51	41	41	73
4	57	7	19	24	30	57
5	81	56	29	70	20	81


Local Maximum
Global Maximum
Global Minimum
Local Minimum

Use Parallel Programming In Local Beam Search

Conclusion

The parallel programming works with local beam search quite well. The calculation time reduces around 17% of sequential programming

Thank you

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