AI: H.O1

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IMPLEMENTATION

A – Chromosom

A-1: IS A LIST OF LISTS WHICH CONTAINS SHIFTS OF (ALL) DAYS

A-2: IS ACTUALLY A SOLUSION TO THE PROBLEM

A-3: SHOULD AT LAST SATSFY THESE NEEDS:

- LIMITATIONS FOR EACH DOCTOR IN EACH SHIFT SHOULD BE SATISFIED
- NO DOCTOR SHOULD WORK 3 NIGHT-SHIFTS IN A ROW
- NO DOCTOR SHOULD BE PUT IN A CIRCUMSTANCE THAT HAS TO WORK NIGHT-NOON-AFTERNOON SHIFTS IN A ROW
- LIMITATION FOR ALL SHIFTS FOR ALL DAYS OF A DOCTOR SHOULD BE SATISFIED

$B - Generation$

B-1: IS A LIST OF CHOROMOSOMS

B-2: THE BEST CHOROMOSOM OF FINAL GENERATION SHOULD AT LAST SATSFY THESE NEEDS:

- LIMITATIONS FOR EACH DOCTOR IN EACH SHIFT SHOULD BE SATISFIED
- NO DOCTOR SHOULD WORK 3 NIGHT-SHIFTS IN A ROW
- NO DOCTOR SHOULD BE PUT IN A CIRCUMSTANCE THAT HAS TO WORK NIGHT-NOON-AFTERNOON SHIFTS IN A ROW
- LIMITATION FOR ALL SHIFTS FOR ALL DAYS OF A DOCTOR SHOULD BE SATISFIED

$C - Algorith$

C-1: AT FIRST, A GENERATION WILL BE GENERATED RANDOMLY.

C-2: THAT GENERATON WILL BE RANKED THROUGH FITNESS FUNCTION.

C-3:

- IF THE BEST CHOROMOSOM HAD THE SATISFACTION WE WOULD CONSIDER IT AS THE SOLUTION AND IT IS DONE
- IF NOT, WE WOULD STRAIGHTLY DELIVER 16% OF MOST POWERFUL CHOROMOSOMS TO THE NEXT GENERATION AND CROSSOVER THE REST WITH p_c AND MUTATE THEM WITH p_m PROBABILITY, AND CONSIDER THEIR CHILDEREN A REPLACEMENT WITH THEM IN THE NEXT GENERATION AND IT CONTINUES TILL SATISFACTION

C-3-1: CROSS OVER ALGORITHM: CROSSES BETWEEN ALL SHIFT

- MEANING THAT WE USED $day \times 3$ POINTS
- USING FLIP THE COIN ALGORITH IT JUST SELECTS EACH SHIFT OF THE 2 CHOROMOSOM

C-3-1: MUTATE: RANDOMLY CHANGES 2 SHIFTS