The first search method I implemented was simulated annealing. In this search method the method allows the occasional bad tracking to advance the search while keeping track of any good values. It uses the idea of temperature as how many times it iterates and how likely a bad choice is to be use.

The next Search method I implemented was backtracking. The idea of backtracking is to reach a point where either the search has ended or a error has been found, then is either accepted or we go back one step and try again with another value.

Then there is Degree heuristic which is backtracking heuristic that focus on choosing a variable with the most constrains, with this doing the most complicated variables first and leaving the rest second

The final search is Minimum remaining values which is the contrary to Degree heuristic. This also focus on backtracking but instead of staring with most constrain value it starts with the least constrain value

Tests

Simulated annealing

Number of Buildings: 10

Number of Rooms: 10

Number of Courses: 50

Time limit (s): 5

Algorithm number: 1

Random seed: 0

Temperature 10

Deadline: 1522040943348

Current: 1522040938348

Time remaining: 5000

Score: 763.2714920118913

Number of Buildings: 10

Number of Rooms: 10

Number of Courses: 50

Time limit (s): 5

Algorithm number: 1

Random seed: 0

Temperature 20

Deadline: 1522041038159

Current: 1522041033164

Time remaining: 4994

Score: 1582.3135042500417

Number of Buildings: 10

Number of Rooms: 10

Number of Courses: 50

Time limit (s): 5

Algorithm number: 1

Random seed: 0

Temperature 30

Deadline: 1522041073673

Current: 1522041068680

Time remaining: 4993

Score: 1480.1907318069377

Backtracking

Number of Buildings: 10

Number of Rooms: 10

Number of Courses: 50

Time limit (s): 5

Algorithm number: 2

Random seed: 0

Temperature 30

Deadline: 1522041132657

Current: 1522041127658

Time remaining: 4999

Score: 930.969413755253

Degree heuristic Backtracking

Number of Buildings: 10

Number of Rooms: 10

Number of Courses: 50

Time limit (s): 5

Algorithm number: 3

Random seed: 0

Temperature 30

Deadline: 1522041195743

Current: 1522041190744

Time remaining: 4999

Score: 1177.2262561286507

Minimal constrain Backtracking

Number of Buildings: 10

Number of Rooms: 10

Number of Courses: 50

Time limit (s): 5

Algorithm number: 4

Random seed: 0

Temperature 30

Deadline: 1522041239180

Current: 1522041234180

Time remaining: 5000

Score: 1252.9300763751683