

Report

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Intro to Artificial Intelligence

System working process:

My program first calls `input_call()` which reads in the input files from the user. It will be checked to see if the file is available and if it meets the correct requirements. If it does pass, the file's path will be returned and read. Once the system receives the file it will process the attributes information. The same process is used for hard constraints. Both of these files' information will be stored and kept for both preference logic. The preference logic will provide options to the user. If an incorrect number is inputted by the user, the user will be asked to input a correct number. For both options 1 and 2 (penalty and qualitative logic), options from 1 to 6 will be provided to the user. If an incorrect option is inputted by the user, then the user will be asked again to provide a valid option. For every option, a method is called to process the information needed to be printed. If, for example, the user wants penalty, then qualitative, then penalty, the information in penalty will be re-processed for the user.

1. Encoding - Penalty and Qualitative

Choose the reasoning task to perform:

1. Encoding
2. Feasibility Checking
3. Show the Table
4. Exemplification
5. Omni-optimization
6. Back to previous menu

Your Choice: 1

o0 -bacon, burger, turkey, celery, soda, fries, cookie, chips
o1 -bacon, burger, turkey, celery, soda, fries, cookie, popcorn
o2 -bacon, burger, turkey, celery, soda, fries, oreo, chips
o3 -bacon, burger, turkey, celery, soda, fries, oreo, popcorn
o4 -bacon, burger, turkey, celery, soda, pizza, cookie, chips
o5 -bacon, burger, turkey, celery, soda, pizza, cookie, popcorn
o6 -bacon, burger, turkey, celery, soda, pizza, oreo, chips
o7 -bacon, burger, turkey, celery, soda, pizza, oreo, popcorn
o8 -bacon, burger, turkey, celery, water, fries, cookie, chips
o9 -bacon, burger, turkey, celery, water, fries, cookie, popcorn
o10 -bacon, burger, turkey, celery, water, fries, oreo, chips
o11 -bacon, burger, turkey, celery, water, fries, oreo, popcorn
o12 -bacon, burger, turkey, celery, water, pizza, cookie, chips
o13 -bacon, burger, turkey, celery, water, pizza, cookie, popcorn
o14 -bacon, burger, turkey, celery, water, pizza, oreo, chips
o15 -bacon, burger, turkey, celery, water, pizza, oreo, popcorn
o16 -bacon, burger, turkey, raisin, soda, fries, cookie, chips
o17 -bacon, burger, turkey, raisin, soda, fries, cookie, popcorn
o18 -bacon, burger, turkey, raisin, soda, fries, oreo, chips
o19 -bacon, burger, turkey, raisin, soda, fries, oreo, popcorn
o20 -bacon, burger, turkey, raisin, soda, pizza, cookie, chips
o21 -bacon, burger, turkey, raisin, soda, pizza, cookie, popcorn

o22 -bacon, burger, turkey, raisin, soda, pizza, oreo, chips
o23 -bacon, burger, turkey, raisin, soda, pizza, oreo, popcorn
o24 -bacon, burger, turkey, raisin, water, fries, cookie, chips
o25 -bacon, burger, turkey, raisin, water, fries, cookie, popcorn
o26 -bacon, burger, turkey, raisin, water, fries, oreo, chips
o27 -bacon, burger, turkey, raisin, water, fries, oreo, popcorn
o28 -bacon, burger, turkey, raisin, water, pizza, cookie, chips
o29 -bacon, burger, turkey, raisin, water, pizza, cookie, popcorn
o30 -bacon, burger, turkey, raisin, water, pizza, oreo, chips
o31 -bacon, burger, turkey, raisin, water, pizza, oreo, popcorn
o32 -bacon, burger, chicken, celery, soda, fries, cookie, chips
o33 -bacon, burger, chicken, celery, soda, fries, cookie, popcorn
o34 -bacon, burger, chicken, celery, soda, fries, oreo, chips
o35 -bacon, burger, chicken, celery, soda, fries, oreo, popcorn
o36 -bacon, burger, chicken, celery, soda, pizza, cookie, chips
o37 -bacon, burger, chicken, celery, soda, pizza, cookie, popcorn
o38 -bacon, burger, chicken, celery, soda, pizza, oreo, chips
o39 -bacon, burger, chicken, celery, soda, pizza, oreo, popcorn
o40 -bacon, burger, chicken, celery, water, fries, cookie, chips
o41 -bacon, burger, chicken, celery, water, fries, cookie, popcorn
o42 -bacon, burger, chicken, celery, water, fries, oreo, chips
o43 -bacon, burger, chicken, celery, water, fries, oreo, popcorn
o44 -bacon, burger, chicken, celery, water, pizza, cookie, chips
o45 -bacon, burger, chicken, celery, water, pizza, cookie, popcorn
o46 -bacon, burger, chicken, celery, water, pizza, oreo, chips
o47 -bacon, burger, chicken, celery, water, pizza, oreo, popcorn
o48 -bacon, burger, chicken, raisin, soda, fries, cookie, chips
o49 -bacon, burger, chicken, raisin, soda, fries, cookie, popcorn
o50 -bacon, burger, chicken, raisin, soda, fries, oreo, chips
o51 -bacon, burger, chicken, raisin, soda, fries, oreo, popcorn
o52 -bacon, burger, chicken, raisin, soda, pizza, cookie, chips
o53 -bacon, burger, chicken, raisin, soda, pizza, cookie, popcorn
o54 -bacon, burger, chicken, raisin, soda, pizza, oreo, chips

o55 -bacon, burger, chicken, raisin, soda, pizza, oreo, popcorn
o56 -bacon, burger, chicken, raisin, water, fries, cookie, chips
o57 -bacon, burger, chicken, raisin, water, fries, cookie, popcorn
o58 -bacon, burger, chicken, raisin, water, fries, oreo, chips
o59 -bacon, burger, chicken, raisin, water, fries, oreo, popcorn
o60 -bacon, burger, chicken, raisin, water, pizza, cookie, chips
o61 -bacon, burger, chicken, raisin, water, pizza, cookie, popcorn
o62 -bacon, burger, chicken, raisin, water, pizza, oreo, chips
o63 -bacon, burger, chicken, raisin, water, pizza, oreo, popcorn
o64 -bacon, salad, turkey, celery, soda, fries, cookie, chips
o65 -bacon, salad, turkey, celery, soda, fries, cookie, popcorn
o66 -bacon, salad, turkey, celery, soda, fries, oreo, chips
o67 -bacon, salad, turkey, celery, soda, fries, oreo, popcorn
o68 -bacon, salad, turkey, celery, soda, pizza, cookie, chips
o69 -bacon, salad, turkey, celery, soda, pizza, cookie, popcorn
o70 -bacon, salad, turkey, celery, soda, pizza, oreo, chips
o71 -bacon, salad, turkey, celery, soda, pizza, oreo, popcorn
o72 -bacon, salad, turkey, celery, water, fries, cookie, chips
o73 -bacon, salad, turkey, celery, water, fries, cookie, popcorn
o74 -bacon, salad, turkey, celery, water, fries, oreo, chips
o75 -bacon, salad, turkey, celery, water, fries, oreo, popcorn
o76 -bacon, salad, turkey, celery, water, pizza, cookie, chips
o77 -bacon, salad, turkey, celery, water, pizza, cookie, popcorn
o78 -bacon, salad, turkey, celery, water, pizza, oreo, chips
o79 -bacon, salad, turkey, celery, water, pizza, oreo, popcorn
o80 -bacon, salad, turkey, raisin, soda, fries, cookie, chips
o81 -bacon, salad, turkey, raisin, soda, fries, cookie, popcorn
o82 -bacon, salad, turkey, raisin, soda, fries, oreo, chips
o83 -bacon, salad, turkey, raisin, soda, fries, oreo, popcorn
o84 -bacon, salad, turkey, raisin, soda, pizza, cookie, chips
o85 -bacon, salad, turkey, raisin, soda, pizza, cookie, popcorn
o86 -bacon, salad, turkey, raisin, soda, pizza, oreo, chips
o87 -bacon, salad, turkey, raisin, soda, pizza, oreo, popcorn

o88 -bacon, salad, turkey, raisin, water, fries, cookie, chips
o89 -bacon, salad, turkey, raisin, water, fries, cookie, popcorn
o90 -bacon, salad, turkey, raisin, water, fries, oreo, chips
o91 -bacon, salad, turkey, raisin, water, fries, oreo, popcorn
o92 -bacon, salad, turkey, raisin, water, pizza, cookie, chips
o93 -bacon, salad, turkey, raisin, water, pizza, cookie, popcorn
o94 -bacon, salad, turkey, raisin, water, pizza, oreo, chips
o95 -bacon, salad, turkey, raisin, water, pizza, oreo, popcorn
o96 -bacon, salad, chicken, celery, soda, fries, cookie, chips
o97 -bacon, salad, chicken, celery, soda, fries, cookie, popcorn
o98 -bacon, salad, chicken, celery, soda, fries, oreo, chips
o99 -bacon, salad, chicken, celery, soda, fries, oreo, popcorn
o100 -bacon, salad, chicken, celery, soda, pizza, cookie, chips
o101 -bacon, salad, chicken, celery, soda, pizza, cookie, popcorn
o102 -bacon, salad, chicken, celery, soda, pizza, oreo, chips
o103 -bacon, salad, chicken, celery, soda, pizza, oreo, popcorn
o104 -bacon, salad, chicken, celery, water, fries, cookie, chips
o105 -bacon, salad, chicken, celery, water, fries, cookie, popcorn
o106 -bacon, salad, chicken, celery, water, fries, oreo, chips
o107 -bacon, salad, chicken, celery, water, fries, oreo, popcorn
o108 -bacon, salad, chicken, celery, water, pizza, cookie, chips
o109 -bacon, salad, chicken, celery, water, pizza, cookie, popcorn
o110 -bacon, salad, chicken, celery, water, pizza, oreo, chips
o111 -bacon, salad, chicken, celery, water, pizza, oreo, popcorn
o112 -bacon, salad, chicken, raisin, soda, fries, cookie, chips
o113 -bacon, salad, chicken, raisin, soda, fries, cookie, popcorn
o114 -bacon, salad, chicken, raisin, soda, fries, oreo, chips
o115 -bacon, salad, chicken, raisin, soda, fries, oreo, popcorn
o116 -bacon, salad, chicken, raisin, soda, pizza, cookie, chips
o117 -bacon, salad, chicken, raisin, soda, pizza, cookie, popcorn
o118 -bacon, salad, chicken, raisin, soda, pizza, oreo, chips
o119 -bacon, salad, chicken, raisin, soda, pizza, oreo, popcorn
o120 -bacon, salad, chicken, raisin, water, fries, cookie, chips

o121 -bacon, salad, chicken, raisin, water, fries, cookie, popcorn
o122 -bacon, salad, chicken, raisin, water, fries, oreo, chips
o123 -bacon, salad, chicken, raisin, water, fries, oreo, popcorn
o124 -bacon, salad, chicken, raisin, water, pizza, cookie, chips
o125 -bacon, salad, chicken, raisin, water, pizza, cookie, popcorn
o126 -bacon, salad, chicken, raisin, water, pizza, oreo, chips
o127 -bacon, salad, chicken, raisin, water, pizza, oreo, popcorn
o128 -egg, burger, turkey, celery, soda, fries, cookie, chips
o129 -egg, burger, turkey, celery, soda, fries, cookie, popcorn
o130 -egg, burger, turkey, celery, soda, fries, oreo, chips
o131 -egg, burger, turkey, celery, soda, fries, oreo, popcorn
o132 -egg, burger, turkey, celery, soda, pizza, cookie, chips
o133 -egg, burger, turkey, celery, soda, pizza, cookie, popcorn
o134 -egg, burger, turkey, celery, soda, pizza, oreo, chips
o135 -egg, burger, turkey, celery, soda, pizza, oreo, popcorn
o136 -egg, burger, turkey, celery, water, fries, cookie, chips
o137 -egg, burger, turkey, celery, water, fries, cookie, popcorn
o138 -egg, burger, turkey, celery, water, fries, oreo, chips
o139 -egg, burger, turkey, celery, water, fries, oreo, popcorn
o140 -egg, burger, turkey, celery, water, pizza, cookie, chips
o141 -egg, burger, turkey, celery, water, pizza, cookie, popcorn
o142 -egg, burger, turkey, celery, water, pizza, oreo, chips
o143 -egg, burger, turkey, celery, water, pizza, oreo, popcorn
o144 -egg, burger, turkey, raisin, soda, fries, cookie, chips
o145 -egg, burger, turkey, raisin, soda, fries, cookie, popcorn
o146 -egg, burger, turkey, raisin, soda, fries, oreo, chips
o147 -egg, burger, turkey, raisin, soda, fries, oreo, popcorn
o148 -egg, burger, turkey, raisin, soda, pizza, cookie, chips
o149 -egg, burger, turkey, raisin, soda, pizza, cookie, popcorn
o150 -egg, burger, turkey, raisin, soda, pizza, oreo, chips
o151 -egg, burger, turkey, raisin, soda, pizza, oreo, popcorn
o152 -egg, burger, turkey, raisin, water, fries, cookie, chips
o153 -egg, burger, turkey, raisin, water, fries, cookie, popcorn

o154 -egg, burger, turkey, raisin, water, fries, oreo, chips
o155 -egg, burger, turkey, raisin, water, fries, oreo, popcorn
o156 -egg, burger, turkey, raisin, water, pizza, cookie, chips
o157 -egg, burger, turkey, raisin, water, pizza, cookie, popcorn
o158 -egg, burger, turkey, raisin, water, pizza, oreo, chips
o159 -egg, burger, turkey, raisin, water, pizza, oreo, popcorn
o160 -egg, burger, chicken, celery, soda, fries, cookie, chips
o161 -egg, burger, chicken, celery, soda, fries, cookie, popcorn
o162 -egg, burger, chicken, celery, soda, fries, oreo, chips
o163 -egg, burger, chicken, celery, soda, fries, oreo, popcorn
o164 -egg, burger, chicken, celery, soda, pizza, cookie, chips
o165 -egg, burger, chicken, celery, soda, pizza, cookie, popcorn
o166 -egg, burger, chicken, celery, soda, pizza, oreo, chips
o167 -egg, burger, chicken, celery, soda, pizza, oreo, popcorn
o168 -egg, burger, chicken, celery, water, fries, cookie, chips
o169 -egg, burger, chicken, celery, water, fries, cookie, popcorn
o170 -egg, burger, chicken, celery, water, fries, oreo, chips
o171 -egg, burger, chicken, celery, water, fries, oreo, popcorn
o172 -egg, burger, chicken, celery, water, pizza, cookie, chips
o173 -egg, burger, chicken, celery, water, pizza, cookie, popcorn
o174 -egg, burger, chicken, celery, water, pizza, oreo, chips
o175 -egg, burger, chicken, celery, water, pizza, oreo, popcorn
o176 -egg, burger, chicken, raisin, soda, fries, cookie, chips
o177 -egg, burger, chicken, raisin, soda, fries, cookie, popcorn
o178 -egg, burger, chicken, raisin, soda, fries, oreo, chips
o179 -egg, burger, chicken, raisin, soda, fries, oreo, popcorn
o180 -egg, burger, chicken, raisin, soda, pizza, cookie, chips
o181 -egg, burger, chicken, raisin, soda, pizza, cookie, popcorn
o182 -egg, burger, chicken, raisin, soda, pizza, oreo, chips
o183 -egg, burger, chicken, raisin, soda, pizza, oreo, popcorn
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o185 -egg, burger, chicken, raisin, water, fries, cookie, popcorn
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o187 -egg, burger, chicken, raisin, water, fries, oreo, popcorn
o188 -egg, burger, chicken, raisin, water, pizza, cookie, chips
o189 -egg, burger, chicken, raisin, water, pizza, cookie, popcorn
o190 -egg, burger, chicken, raisin, water, pizza, oreo, chips
o191 -egg, burger, chicken, raisin, water, pizza, oreo, popcorn
o192 -egg, salad, turkey, celery, soda, fries, cookie, chips
o193 -egg, salad, turkey, celery, soda, fries, cookie, popcorn
o194 -egg, salad, turkey, celery, soda, fries, oreo, chips
o195 -egg, salad, turkey, celery, soda, fries, oreo, popcorn
o196 -egg, salad, turkey, celery, soda, pizza, cookie, chips
o197 -egg, salad, turkey, celery, soda, pizza, cookie, popcorn
o198 -egg, salad, turkey, celery, soda, pizza, oreo, chips
o199 -egg, salad, turkey, celery, soda, pizza, oreo, popcorn
o200 -egg, salad, turkey, celery, water, fries, cookie, chips
o201 -egg, salad, turkey, celery, water, fries, cookie, popcorn
o202 -egg, salad, turkey, celery, water, fries, oreo, chips
o203 -egg, salad, turkey, celery, water, fries, oreo, popcorn
o204 -egg, salad, turkey, celery, water, pizza, cookie, chips
o205 -egg, salad, turkey, celery, water, pizza, cookie, popcorn
o206 -egg, salad, turkey, celery, water, pizza, oreo, chips
o207 -egg, salad, turkey, celery, water, pizza, oreo, popcorn
o208 -egg, salad, turkey, raisin, soda, fries, cookie, chips
o209 -egg, salad, turkey, raisin, soda, fries, cookie, popcorn
o210 -egg, salad, turkey, raisin, soda, fries, oreo, chips
o211 -egg, salad, turkey, raisin, soda, fries, oreo, popcorn
o212 -egg, salad, turkey, raisin, soda, pizza, cookie, chips
o213 -egg, salad, turkey, raisin, soda, pizza, cookie, popcorn
o214 -egg, salad, turkey, raisin, soda, pizza, oreo, chips
o215 -egg, salad, turkey, raisin, soda, pizza, oreo, popcorn
o216 -egg, salad, turkey, raisin, water, fries, cookie, chips
o217 -egg, salad, turkey, raisin, water, fries, cookie, popcorn
o218 -egg, salad, turkey, raisin, water, fries, oreo, chips
o219 -egg, salad, turkey, raisin, water, fries, oreo, popcorn

o220 -egg, salad, turkey, raisin, water, pizza, cookie, chips
o221 -egg, salad, turkey, raisin, water, pizza, cookie, popcorn
o222 -egg, salad, turkey, raisin, water, pizza, oreo, chips
o223 -egg, salad, turkey, raisin, water, pizza, oreo, popcorn
o224 -egg, salad, chicken, celery, soda, fries, cookie, chips
o225 -egg, salad, chicken, celery, soda, fries, cookie, popcorn
o226 -egg, salad, chicken, celery, soda, fries, oreo, chips
o227 -egg, salad, chicken, celery, soda, fries, oreo, popcorn
o228 -egg, salad, chicken, celery, soda, pizza, cookie, chips
o229 -egg, salad, chicken, celery, soda, pizza, cookie, popcorn
o230 -egg, salad, chicken, celery, soda, pizza, oreo, chips
o231 -egg, salad, chicken, celery, soda, pizza, oreo, popcorn
o232 -egg, salad, chicken, celery, water, fries, cookie, chips
o233 -egg, salad, chicken, celery, water, fries, cookie, popcorn
o234 -egg, salad, chicken, celery, water, fries, oreo, chips
o235 -egg, salad, chicken, celery, water, fries, oreo, popcorn
o236 -egg, salad, chicken, celery, water, pizza, cookie, chips
o237 -egg, salad, chicken, celery, water, pizza, cookie, popcorn
o238 -egg, salad, chicken, celery, water, pizza, oreo, chips
o239 -egg, salad, chicken, celery, water, pizza, oreo, popcorn
o240 -egg, salad, chicken, raisin, soda, fries, cookie, chips
o241 -egg, salad, chicken, raisin, soda, fries, cookie, popcorn
o242 -egg, salad, chicken, raisin, soda, fries, oreo, chips
o243 -egg, salad, chicken, raisin, soda, fries, oreo, popcorn
o244 -egg, salad, chicken, raisin, soda, pizza, cookie, chips
o245 -egg, salad, chicken, raisin, soda, pizza, cookie, popcorn
o246 -egg, salad, chicken, raisin, soda, pizza, oreo, chips
o247 -egg, salad, chicken, raisin, soda, pizza, oreo, popcorn
o248 -egg, salad, chicken, raisin, water, fries, cookie, chips
o249 -egg, salad, chicken, raisin, water, fries, cookie, popcorn
o250 -egg, salad, chicken, raisin, water, fries, oreo, chips
o251 -egg, salad, chicken, raisin, water, fries, oreo, popcorn
o252 -egg, salad, chicken, raisin, water, pizza, cookie, chips

o253 -egg, salad, chicken, raisin, water, pizza, cookie, popcorn
o254 -egg, salad, chicken, raisin, water, pizza, oreo, chips
o255 -egg, salad, chicken, raisin, water, pizza, oreo, popcorn

2. Feasibility - Penalty and Qualitative

```
Your Choice: 2
Yes, there are 124 feasible objects
```

3. Table: Penalty

Choose the reasoning task to perform:

1. Encoding
2. Feasibility Checking
3. Show the Table
4. Exemplification
5. Omni-optimization
6. Back to previous menu

Your Choice: 3

+-----+-----+-----+-----+-----+				
encoding	egg AND burger	chicken OR chips	bacon AND turkey	Total penalty
+-----+-----+-----+-----+-----+				
o1	4	10	0	14
o2	4	0	0	4
o3	4	10	0	14
o4	4	0	0	4
o5	4	10	0	14
o6	4	0	0	4
o7	4	10	0	14
o8	4	0	0	4
o9	4	10	0	14
o10	4	0	0	4
o11	4	10	0	14
o12	4	0	0	4
o13	4	10	0	14
o14	4	0	0	4
o15	4	10	0	14
o16	4	0	0	4
o17	4	10	0	14
o18	4	0	0	4
o19	4	10	0	14

	o20		4		0		0		4	
	o21		4		10		0		14	
	o22		4		0		0		4	
	o23		4		10		0		14	
	o24		4		0		0		4	
	o25		4		10		0		14	
	o26		4		0		0		4	
	o27		4		10		0		14	
	o28		4		0		0		4	
	o29		4		10		0		14	
	o30		4		0		0		4	
	o31		4		10		0		14	
	o33		4		0		15		19	
	o34		4		0		15		19	
	o35		4		0		15		19	
	o36		4		0		15		19	
	o37		4		0		15		19	
	o38		4		0		15		19	
	o39		4		0		15		19	
	o40		4		0		15		19	
	o41		4		0		15		19	
	o42		4		0		15		19	
	o43		4		0		15		19	
	o44		4		0		15		19	
	o45		4		0		15		19	
	o46		4		0		15		19	
	o47		4		0		15		19	
	o48		4		0		15		19	
	o49		4		0		15		19	
	o50		4		0		15		19	
	o51		4		0		15		19	
	o52		4		0		15		19	

	o53		4		0		15		19	
	o54		4		0		15		19	
	o55		4		0		15		19	
	o56		4		0		15		19	
	o57		4		0		15		19	
	o58		4		0		15		19	
	o59		4		0		15		19	
	o60		4		0		15		19	
	o61		4		0		15		19	
	o62		4		0		15		19	
	o63		4		0		15		19	
	o129		0		10		15		25	
	o130		0		0		15		15	
	o131		0		10		15		25	
	o132		0		0		15		15	
	o133		0		10		15		25	
	o134		0		0		15		15	
	o135		0		10		15		25	
	o136		0		0		15		15	
	o137		0		10		15		25	
	o138		0		0		15		15	
	o139		0		10		15		25	
	o140		0		0		15		15	
	o141		0		10		15		25	
	o142		0		0		15		15	
	o143		0		10		15		25	
	o144		0		0		15		15	
	o145		0		10		15		25	
	o146		0		0		15		15	
	o147		0		10		15		25	
	o148		0		0		15		15	
	o149		0		10		15		25	
	o150		0		0		15		15	

o151	0	10	15	25
o152	0	0	15	15
o153	0	10	15	25
o154	0	0	15	15
o155	0	10	15	25
o156	0	0	15	15
o157	0	10	15	25
o158	0	0	15	15
o159	0	10	15	25
o161	0	0	15	15
o162	0	0	15	15
o163	0	0	15	15
o164	0	0	15	15
o165	0	0	15	15
o166	0	0	15	15
o167	0	0	15	15
o168	0	0	15	15
o169	0	0	15	15
o170	0	0	15	15
o171	0	0	15	15
o172	0	0	15	15
o173	0	0	15	15
o174	0	0	15	15
o175	0	0	15	15
o176	0	0	15	15
o177	0	0	15	15
o178	0	0	15	15
o179	0	0	15	15
o180	0	0	15	15
o181	0	0	15	15
o182	0	0	15	15

	o183		0		0		15		15	
	o184		0		0		15		15	
	o185		0		0		15		15	
	o186		0		0		15		15	
	o187		0		0		15		15	
	o188		0		0		15		15	
	o189		0		0		15		15	
	o190		0		0		15		15	
	o191		0		0		15		15	
+-----+-----+-----+-----+-----+										

4. Exemplification: Penalty

```
Choose the reasoning task to perform:
1. Encoding
2. Feasibility Checking
3. Show the Table
4. Exemplification
5. Omni-optimization
6. Back to previous menu
Your Choice: 4
Two randomly selected feasible objects are o47 and o30, and o30 is strictly preferred over o47
```

5. Omni-optimization: Penalty

```
Choose the reasoning task to perform:
1. Encoding
2. Feasibility Checking
3. Show the Table
4. Exemplification
5. Omni-optimization
6. Back to previous menu
Your Choice: 5
All optimal objects: o2, o4, o6, o8, o10, o12, o14, o16, o18, o20, o22, o24, o26, o28, o30
```

3: Table: Qualitative Logic

Choose the reasoning task to perform:
1. Encoding
2. Feasibility Checking
3. Show the Table
4. Exemplification
5. Omni-optimization
6. Back to previous menu
Your Choice: 3

encoding	egg BT chicken IF	bacon BT salad IF	chips BT turkey BT salad IF	bacon
o1	0	1	2	
o2	0	1	1	
o3	0	1	2	
o4	0	1	1	
o5	0	1	2	
o6	0	1	1	
o7	0	1	2	
o8	0	1	1	
o9	0	1	2	
o10	0	1	1	
o11	0	1	2	
o12	0	1	1	
o13	0	1	2	
o14	0	1	1	
o15	0	1	2	
o16	0	1	1	
o17	0	1	2	
o18	0	1	1	

	o19		0		1		2	
	o20		0		1		1	
	o21		0		1		2	
	o22		0		1		1	
	o23		0		1		2	
	o24		0		1		1	
	o25		0		1		2	
	o26		0		1		1	
	o27		0		1		2	
	o28		0		1		1	
	o29		0		1		2	
	o30		0		1		1	
	o31		0		1		2	
	o33		2		1		inf	
	o34		2		1		1	
	o35		2		1		inf	
	o36		2		1		1	
	o37		2		1		inf	
	o38		2		1		1	
	o39		2		1		inf	
	o40		2		1		1	
	o41		2		1		inf	
	o42		2		1		1	
	o43		2		1		inf	
	o44		2		1		1	
	o45		2		1		inf	
	o46		2		1		1	
	o47		2		1		inf	
	o48		2		1		1	
	o49		2		1		inf	
	o50		2		1		1	
	o51		2		1		inf	
	o52		2		1		1	

	o53		2		1		inf	
	o54		2		1		1	
	o55		2		1		inf	
	o56		2		1		1	
	o57		2		1		inf	
	o58		2		1		1	
	o59		2		1		inf	
	o60		2		1		1	
	o61		2		1		inf	
	o62		2		1		1	
	o63		2		1		inf	
	o129		1		0		inf	
	o130		1		0		inf	
	o131		1		0		inf	
	o132		1		0		inf	
	o133		1		0		inf	
	o134		1		0		inf	
	o135		1		0		inf	
	o136		1		0		inf	
	o137		1		0		inf	
	o138		1		0		inf	
	o139		1		0		inf	
	o140		1		0		inf	
	o141		1		0		inf	
	o142		1		0		inf	
	o143		1		0		inf	
	o144		1		0		inf	
	o145		1		0		inf	
	o146		1		0		inf	
	o147		1		0		inf	
	o148		1		0		inf	
	o149		1		0		inf	
	o150		1		0		inf	

4. Exemplification: Qualitative Logic

Choose the reasoning task to perform:

1. Encoding
2. Feasibility Checking
3. Show the Table
4. Exemplification
5. Omni-optimization
6. Back to previous menu

Your Choice: 4

Two randomly selected feasible objects are o184 and o5, and o184 and o5 are incomparable

5. Omni-optimization: Qualitative Logic

Choose the reasoning task to perform:

1. Encoding
2. Feasibility Checking
3. Show the Table
4. Exemplification
5. Omni-optimization
6. Back to previous menu

Your Choice: 5

All optimal objects: o129, o130, o131, o132, o133, o134, o135, o136, o137, o138, o139, o140, o141, o142, o143, o144, o145, o146, o147, o148, o149, o150, o151, o152, o153, o154, o155, o156, o157, o158, o159, o161, o162, o163, o164, o165, o166, o167, o168, o169, o170, o171, o172, o173, o174, o175, o176, o177, o178, o179, o180, o181, o182, o183, o184, o185, o186, o187, o188, o189, o190, o191