MPS 文件数学模型提取

完整版

MPS Extractor

2025 年 7 月 8 日

目录

1 模型概览

文件名: `ran8x32.mps`
模型名: RAN8X32
变量总数: 512
约束总数: 296
优化方向: Minimize

2 目标函数

目标函数摘要:

$$\min \quad Z = \sum_i c_i Y_i + \sum_j d_j X_j \tag{1}$$

Y 变量: 256 个，系数范围 [67, 263]
X 变量: 256 个，系数范围 [1, 10]
完整目标函数:

$$\begin{aligned}
\min \quad Z = {} & 235Y_{254} + 243Y_0 + 194Y_1 && (2)\\
& + 194Y_2 + 243Y_3 + 116Y_4 && (3)\\
& + 141Y_5 + 182Y_6 + 122Y_7 && (4)\\
& + 248Y_8 + 77Y_9 + 198Y_{10} && (5)\\
& + 180Y_{11} + 252Y_{12} + 155Y_{13} && (6)\\
& + 115Y_{14} + 247Y_{15} + 119Y_{16} && (7)\\
& + 219Y_{17} + 122Y_{18} + 98Y_{19} && (8)\\
& + 231Y_{20} + 192Y_{21} + 185Y_{22} && (9)\\
& + 110Y_{23} + 194Y_{24} + 67Y_{25} && (10)\\
& + 67Y_{26} + 249Y_{27} + 121Y_{28} && (11)\\
& + 116Y_{29} + 168Y_{30} + 188Y_{31} && (12)\\
& + 147Y_{32} + 245Y_{33} + 135Y_{34} && (13)\\
& + 154Y_{35} + 215Y_{36} + 98Y_{37} && (14)\\
& + 154Y_{38} + 225Y_{39} + 223Y_{40} && (15)\\
& + 190Y_{41} + 122Y_{42} + 117Y_{43} && (16)\\
& + 160Y_{44} + 82Y_{45} + 225Y_{46} && (17)\\
& + 162Y_{47} + 99Y_{48} + 245Y_{49} && (18)\\
& + 196Y_{50} + 164Y_{51} + 169Y_{52} && (19)\\
& + 173Y_{53} + 114Y_{54} + 209Y_{55} && (20)\\
& + 247Y_{56} + 121Y_{57} + 208Y_{58} && (21)\\
& + 93Y_{59} + 151Y_{60} + 238Y_{61} && (22)\\
& + 178Y_{62} + 168Y_{63} + 112Y_{64} && (23)\\
& + 96Y_{65} + 77Y_{66} + 86Y_{67} && (24)\\
& + 69Y_{68} + 247Y_{69} + 210Y_{70} && (25)
\end{aligned}$$

$$+ 76Y_{71} + 253Y_{72} + 172Y_{73} \tag{26}$$

$$+ 221Y_{74} + 84Y_{75} + 200Y_{76} \tag{27}$$

$$+ 191Y_{77} + 157Y_{78} + 237Y_{79} \tag{28}$$

$$+ 157Y_{80} + 71Y_{81} + 76Y_{82} \tag{29}$$

$$+ 70Y_{83} + 153Y_{84} + 192Y_{85} \tag{30}$$

$$+ 84Y_{86} + 168Y_{87} + 103Y_{88} \tag{31}$$

$$+ 67Y_{89} + 140Y_{90} + 246Y_{91} \tag{32}$$

$$+ 192Y_{92} + 144Y_{93} + 217Y_{94} \tag{33}$$

$$+ 206Y_{95} + 249Y_{96} + 202Y_{97} \tag{34}$$

$$+ 130Y_{98} + 149Y_{99} + 241Y_{100} \tag{35}$$

$$+ 77Y_{101} + 213Y_{102} + 154Y_{103} \tag{36}$$

$$+ 217Y_{104} + 117Y_{105} + 125Y_{106} \tag{37}$$

$$+ 259Y_{107} + 150Y_{108} + 248Y_{109} \tag{38}$$

$$+ 87Y_{110} + 167Y_{111} + 225Y_{112} \tag{39}$$

$$+ 140Y_{113} + 235Y_{114} + 133Y_{115} \tag{40}$$

$$+ 75Y_{116} + 178Y_{117} + 192Y_{118} \tag{41}$$

$$+ 215Y_{119} + 132Y_{120} + 204Y_{121} \tag{42}$$

$$+ 212Y_{122} + 207Y_{123} + 155Y_{124} \tag{43}$$

$$+ 236Y_{125} + 195Y_{126} + 125Y_{127} \tag{44}$$

$$+ 198Y_{128} + 126Y_{129} + 174Y_{130} \tag{45}$$

$$+ 147Y_{131} + 158Y_{132} + 127Y_{133} \tag{46}$$

$$+ 118Y_{134} + 248Y_{135} + 207Y_{136} \tag{47}$$

$$+ 128Y_{137} + 128Y_{138} + 243Y_{139} \tag{48}$$

$$+ 147Y_{140} + 163Y_{141} + 247Y_{142} \tag{49}$$

$$+ 109Y_{143} + 188Y_{144} + 106Y_{145} \tag{50}$$

$$+ 254Y_{146} + 117Y_{147} + 242Y_{148} \tag{51}$$

$$+ 254Y_{149} + 245Y_{150} + 241Y_{151} \tag{52}$$

$$+ 215Y_{152} + 135Y_{153} + 255Y_{154} \tag{53}$$

$$+ 227Y_{155} + 93Y_{156} + 231Y_{157} \tag{54}$$

$$+ 121Y_{158} + 122Y_{159} + 222Y_{160} \tag{55}$$

$$+ 127Y_{161} + 123Y_{162} + 197Y_{163} \tag{56}$$

$$+ 150Y_{164} + 232Y_{165} + 77Y_{166} \tag{57}$$

$$+ 244Y_{167} + 248Y_{168} + 184Y_{169} \tag{58}$$

$$+ 255Y_{170} + 199Y_{171} + 256Y_{172} \tag{59}$$

$$+ 140Y_{173} + 117Y_{174} + 138Y_{175} \tag{60}$$

$$+ 139Y_{176} + 173Y_{177} + 196Y_{178} \tag{61}$$

$$+ 151Y_{179} + 103Y_{180} + 103Y_{181} \tag{62}$$

$$+ 129Y_{182} + 247Y_{183} + 214Y_{184} \tag{63}$$

$$+ 238Y_{185} + 75Y_{186} + 244Y_{187} \tag{64}$$

$$+ 121Y_{188} + 121Y_{189} + 246Y_{190} \tag{65}$$

$$+ 232Y_{191} + 154Y_{192} + 144Y_{193} \tag{66}$$

$$+ 225Y_{194} + 220Y_{195} + 187Y_{196} \tag{67}$$

$$+ 187Y_{197} + 105Y_{198} + 230Y_{199} \tag{68}$$

$$+ 110Y_{200} + 100Y_{201} + 116Y_{202} \tag{69}$$

$$+ 141Y_{203} + 237Y_{204} + 261Y_{205} \tag{70}$$

$$+ 198Y_{206} + 71Y_{207} + 244Y_{208} \tag{71}$$

$$+ 210Y_{209} + 128Y_{210} + 258Y_{211} \tag{72}$$

$$+ 239Y_{212} + 185Y_{213} + 137Y_{214} \tag{73}$$

$$+ 148Y_{215} + 263Y_{216} + 148Y_{217} \tag{74}$$

$$+ 91Y_{218} + 261Y_{219} + 106Y_{220} \tag{75}$$

$$+ 140Y_{221} + 72Y_{222} + 184Y_{223} \tag{76}$$

$$+ 251Y_{224} + 250Y_{225} + 169Y_{226} \tag{77}$$

$$+ 218Y_{227} + 132Y_{228} + 233Y_{229} \tag{78}$$

$$+ 254Y_{230} + 183Y_{231} + 81Y_{232} \tag{79}$$

$$+ 206Y_{233} + 157Y_{234} + 146Y_{235} \tag{80}$$

$$+ 243Y_{236} + 85Y_{237} + 216Y_{238} \tag{81}$$

$$+ 81Y_{239} + 169Y_{240} + 215Y_{241} \tag{82}$$

$$+ 88Y_{242} + 134Y_{243} + 85Y_{244} \tag{83}$$

$$+ 195Y_{245} + 137Y_{246} + 168Y_{247} \tag{84}$$

$$+ 103Y_{248} + 207Y_{249} + 208Y_{250} \tag{85}$$

$$+ 67Y_{251} + 90Y_{252} + 181Y_{253} \tag{86}$$

$$+ 186Y_{255} + 7X_0 + 10X_1 \tag{87}$$

$$+ 10X_2 + 7X_3 + 4X_4 \tag{88}$$

$$+ 3X_5 + 10X_6 + 10X_7 \tag{89}$$

$$+ 3X_8 + 10X_9 + 2X_{10} \tag{90}$$

$$+ 7X_{11} + 1X_{12} + 3X_{13} \tag{91}$$

$$+ 4X_{14} + 5X_{15} + 2X_{16} \tag{92}$$

$$+ 7X_{17} + 9X_{18} + 6X_{19} \tag{93}$$

$$+ 6X_{20} + 6X_{21} + 3X_{22} \tag{94}$$

$$+ 7X_{23} + 8X_{24} + 3X_{25} \tag{95}$$

$$+ 3X_{26} + 2X_{27} + 8X_{28} \tag{96}$$

$$+ 4X_{29} + 8X_{30} + 3X_{31} \tag{97}$$

$$+ 10X_{32} + 6X_{33} + 10X_{34} \tag{98}$$

$$+ 4X_{35} + 8X_{36} + 6X_{37} \tag{99}$$

$$+ 4X_{38} + 2X_{39} + 5X_{40} \tag{100}$$

$$+ 7X_{41} + 10X_{42} + 5X_{43} \tag{101}$$

$$+ 9X_{44} + 5X_{45} + 2X_{46} \tag{102}$$

$$+ 8X_{47} + 9X_{48} + 6X_{49} \tag{103}$$

$$+ 2X_{50} + 6X_{51} + 9X_{52} \tag{104}$$

$$+ 2X_{53} + 8X_{54} + 3X_{55} \tag{105}$$

$$+ 5X_{56} + 3X_{57} + 8X_{58} \tag{106}$$

$$+ 4X_{59} + 7X_{60} + 3X_{61} \tag{107}$$

$$+ 7X_{62} + 9X_{63} + 10X_{64} \tag{108}$$

$$+ 7X_{65} + 10X_{66} + 7X_{67} \tag{109}$$

$$+ 4X_{68} + 5X_{69} + 1X_{70} \tag{110}$$

$$+ 10X_{71} + 9X_{72} + 1X_{73} \tag{111}$$

$$+ 8X_{74} + 7X_{75} + 5X_{76} \tag{112}$$

$$+ 8X_{77} + 2X_{78} + 2X_{79} \tag{113}$$

$$+ 2X_{80} + 5X_{81} + 10X_{82} \tag{114}$$

$$+ 5X_{83} + 5X_{84} + 6X_{85} \tag{115}$$

$$+ 6X_{86} + 8X_{87} + 3X_{88} \tag{116}$$

$$+ 3X_{89} + 4X_{90} + 5X_{91} \tag{117}$$

$$+ 6X_{92} + 2X_{93} + 10X_{94} \tag{118}$$

$$+ 10X_{95} + 4X_{96} + 8X_{97} \tag{119}$$

$$+ 5X_{98} + 7X_{99} + 10X_{100} \tag{120}$$

$$+ 10X_{101} + 4X_{102} + 4X_{103} \tag{121}$$

$$+ 10X_{104} + 5X_{105} + 6X_{106} \tag{122}$$

$$+ 5X_{107} + 8X_{108} + 3X_{109} \tag{123}$$

$$+ 9X_{110} + 8X_{111} + 1X_{112} \tag{124}$$

$$+ 5X_{113} + 5X_{114} + 2X_{115} \tag{125}$$

$$+ 9X_{116} + 6X_{117} + 6X_{118} \tag{126}$$

$$+ 8X_{119} + 3X_{120} + 6X_{121} \tag{127}$$

$$+ 5X_{122} + 8X_{123} + 3X_{124} \tag{128}$$

$$+ 5X_{125} + 8X_{126} + 7X_{127} \tag{129}$$

$$+ 2X_{128} + 7X_{129} + 2X_{130} \tag{130}$$

$$+ 10X_{131} + 1X_{132} + 4X_{133} \tag{131}$$

$$+ 1X_{134} + 4X_{135} + 10X_{136} \tag{132}$$

$$+ 4X_{137} + 3X_{138} + 8X_{139} \tag{133}$$

$$+ 10X_{140} + 7X_{141} + 3X_{142} \tag{134}$$

$$+ 8X_{143} + 5X_{144} + 5X_{145} \tag{135}$$

$$+ 8X_{146} + 5X_{147} + 9X_{148} \tag{136}$$

$$+ 9X_{149} + 6X_{150} + 8X_{151} \tag{137}$$

$$+ 8X_{152} + 8X_{153} + 8X_{154} \tag{138}$$

$$+ 3X_{155} + 4X_{156} + 7X_{157} \tag{139}$$

$$+ 8X_{158} + 9X_{159} + 4X_{160} \tag{140}$$

$$+ 4X_{161} + 10X_{162} + 1X_{163} \tag{141}$$

$$+ 7X_{164} + 7X_{165} + 10X_{166} \tag{142}$$

$$+ 8X_{167} + 4X_{168} + 1X_{169} \tag{143}$$
$$+ 8X_{170} + 1X_{171} + 8X_{172} \tag{144}$$
$$+ 5X_{173} + 5X_{174} + 6X_{175} \tag{145}$$
$$+ 7X_{176} + 2X_{177} + 2X_{178} \tag{146}$$
$$+ 6X_{179} + 2X_{180} + 2X_{181} \tag{147}$$
$$+ 5X_{182} + 5X_{183} + 3X_{184} \tag{148}$$
$$+ 3X_{185} + 8X_{186} + 7X_{187} \tag{149}$$
$$+ 3X_{188} + 3X_{189} + 7X_{190} \tag{150}$$
$$+ 8X_{191} + 4X_{192} + 1X_{193} \tag{151}$$
$$+ 2X_{194} + 7X_{195} + 4X_{196} \tag{152}$$
$$+ 4X_{197} + 1X_{198} + 10X_{199} \tag{153}$$
$$+ 7X_{200} + 9X_{201} + 4X_{202} \tag{154}$$
$$+ 5X_{203} + 1X_{204} + 3X_{205} \tag{155}$$
$$+ 1X_{206} + 6X_{207} + 8X_{208} \tag{156}$$
$$+ 2X_{209} + 4X_{210} + 5X_{211} \tag{157}$$
$$+ 2X_{212} + 1X_{213} + 6X_{214} \tag{158}$$
$$+ 9X_{215} + 2X_{216} + 9X_{217} \tag{159}$$
$$+ 3X_{218} + 3X_{219} + 4X_{220} \tag{160}$$
$$+ 4X_{221} + 7X_{222} + 1X_{223} \tag{161}$$
$$+ 1X_{224} + 2X_{225} + 9X_{226} \tag{162}$$
$$+ 6X_{227} + 1X_{228} + 7X_{229} \tag{163}$$
$$+ 9X_{230} + 10X_{231} + 4X_{232} \tag{164}$$
$$+ 10X_{233} + 1X_{234} + 9X_{235} \tag{165}$$
$$+ 7X_{236} + 6X_{237} + 9X_{238} \tag{166}$$
$$+ 4X_{239} + 9X_{240} + 9X_{241} \tag{167}$$
$$+ 8X_{242} + 9X_{243} + 8X_{244} \tag{168}$$
$$+ 9X_{245} + 7X_{246} + 8X_{247} \tag{169}$$
$$+ 3X_{248} + 9X_{249} + 3X_{250} \tag{170}$$
$$+ 3X_{251} + 2X_{252} + 8X_{253} \tag{171}$$
$$+ 3X_{254} + 2X_{255}$$

3 约束条件

3.1 等式约束 (40 个)

$$X_{31} = +15 \quad \text{(C\_1)} \tag{172}$$
$$X_{61} + X_{62} + X_{63} = +52 \quad \text{(C\_2)} \tag{173}$$
$$X_{93} + X_{94} + X_{95} = +70 \quad \text{(C\_3)} \tag{174}$$
$$X_{122} + X_{123} + X_{124} + X_{125} + X_{126} + X_{127} = +40 \quad \text{(C\_4)} \tag{175}$$
$$X_{154} + X_{155} + X_{156} + X_{157} + X_{158} + X_{159} = +36 \quad \text{(C\_5)} \tag{176}$$

$$X_{186} + X_{187} + X_{188} + X_{189} + X_{190} + X_{191} = +36 \quad \text{(C\_6)} \tag{177}$$

$$X_{218} + X_{219} + X_{220} + X_{221} + X_{222} + X_{223} = +48 \quad \text{(C\_7)} \tag{178}$$

$$X_{250} + X_{251} + X_{252} + X_{253} + X_{254} + X_{255} = +93 \quad \text{(C\_8)} \tag{179}$$

$$X_0 + X_{32} + X_{64} + X_{96} + X_{128} + X_{160} \tag{180}$$

$$+ X_{192} + X_{224} = +2 \quad \text{(B0)} \tag{181}$$

$$X_1 + X_{33} + X_{65} + X_{97} + X_{129} + X_{161} \tag{182}$$

$$+ X_{193} + X_{225} = +11 \quad \text{(B1)} \tag{183}$$

$$X_2 + X_{34} + X_{66} + X_{98} + X_{130} + X_{162} \tag{184}$$

$$+ X_{194} + X_{226} = +44 \quad \text{(B2)} \tag{185}$$

$$X_3 + X_{35} + X_{67} + X_{99} + X_{131} + X_{163} \tag{186}$$

$$+ X_{195} + X_{227} = +3 \quad \text{(B3)} \tag{187}$$

$$X_4 + X_{36} + X_{68} + X_{100} + X_{132} + X_{164} \tag{188}$$

$$+ X_{196} + X_{228} = +18 \quad \text{(B4)} \tag{189}$$

$$X_5 + X_{37} + X_{69} + X_{101} + X_{133} + X_{165} \tag{190}$$

$$+ X_{197} + X_{229} = +7 \quad \text{(B5)} \tag{191}$$

$$X_6 + X_{38} + X_{70} + X_{102} + X_{134} + X_{166} \tag{192}$$

$$+ X_{198} + X_{230} = +2 \quad \text{(B6)} \tag{193}$$

$$X_7 + X_{39} + X_{71} + X_{103} + X_{135} + X_{167} \tag{194}$$

$$+ X_{199} + X_{231} = +18 \quad \text{(B7)} \tag{195}$$

$$X_8 + X_{40} + X_{72} + X_{104} + X_{136} + X_{168} \tag{196}$$

$$+ X_{200} + X_{232} = +14 \quad \text{(B8)} \tag{197}$$

$$X_9 + X_{41} + X_{73} + X_{105} + X_{137} + X_{169} \tag{198}$$

$$+ X_{201} + X_{233} = +9 \quad \text{(B9)} \tag{199}$$

$$X_{10} + X_{42} + X_{74} + X_{106} + X_{138} + X_{170} \tag{200}$$

$$+ X_{202} + X_{234} = +6 \quad \text{(B10)} \tag{201}$$

$$X_{11} + X_{43} + X_{75} + X_{107} + X_{139} + X_{171} \tag{202}$$

$$+ X_{203} + X_{235} = +43 \quad \text{(B11)} \tag{203}$$

$$X_{12} + X_{44} + X_{76} + X_{108} + X_{140} + X_{172} \tag{204}$$

$$+ X_{204} + X_{236} = +22 \quad \text{(B12)} \tag{205}$$

$$X_{13} + X_{45} + X_{77} + X_{109} + X_{141} + X_{173} \tag{206}$$

$$+ X_{205} + X_{237} = +9 \quad \text{(B13)} \tag{207}$$

$$X_{14} + X_{46} + X_{78} + X_{110} + X_{142} + X_{174} \tag{208}$$

$$+ X_{206} + X_{238} = +8 \quad \text{(B14)} \tag{209}$$

$$X_{15} + X_{47} + X_{79} + X_{111} + X_{143} + X_{175} \tag{210}$$

$$+ X_{207} + X_{239} = +7 \quad \text{(B15)} \tag{211}$$

$$X_{16} + X_{48} + X_{80} + X_{112} + X_{144} + X_{176} \tag{212}$$

$$+ X_{208} + X_{240} = +10 \quad \text{(B16)} \tag{213}$$

$$X_{17} + X_{49} + X_{81} + X_{113} + X_{145} + X_{177} \tag{214}$$

$$+ X_{209} + X_{241} = +1 \quad \text{(B17)} \tag{215}$$

$$X_{18} + X_{50} + X_{82} + X_{114} + X_{146} + X_{178} \tag{216}$$

$$+ X_{210} + X_{242} = +18 \quad \text{(B18)} \tag{217}$$

$$X_{19} + X_{51} + X_{83} + X_{115} + X_{147} + X_{179} \tag{218}$$

$$+ X_{211} + X_{243} = +4 \quad \text{(B19)} \quad (219)$$

$$X_{20} + X_{52} + X_{84} + X_{116} + X_{148} + X_{180} \quad (220)$$

$$+ X_{212} + X_{244} = +3 \quad \text{(B20)} \quad (221)$$

$$X_{21} + X_{53} + X_{85} + X_{117} + X_{149} + X_{181} \quad (222)$$

$$+ X_{213} + X_{245} = +5 \quad \text{(B21)} \quad (223)$$

$$X_{22} + X_{54} + X_{86} + X_{118} + X_{150} + X_{182} \quad (224)$$

$$+ X_{214} + X_{246} = +7 \quad \text{(B22)} \quad (225)$$

$$X_{23} + X_{55} + X_{87} + X_{119} + X_{151} + X_{183} \quad (226)$$

$$+ X_{215} + X_{247} = +31 \quad \text{(B23)} \quad (227)$$

$$X_{24} + X_{56} + X_{88} + X_{120} + X_{152} + X_{184} \quad (228)$$

$$+ X_{216} + X_{248} = +9 \quad \text{(B24)} \quad (229)$$

$$X_{25} + X_{57} + X_{89} + X_{121} + X_{153} + X_{185} \quad (230)$$

$$+ X_{217} + X_{249} = +2 \quad \text{(B25)} \quad (231)$$

$$X_{26} + X_{58} + X_{90} + X_{122} + X_{154} + X_{186} \quad (232)$$

$$+ X_{218} + X_{250} = +6 \quad \text{(B26)} \quad (233)$$

$$X_{27} + X_{59} + X_{91} + X_{123} + X_{155} + X_{187} \quad (234)$$

$$+ X_{219} + X_{251} = +6 \quad \text{(B27)} \quad (235)$$

$$X_{28} + X_{60} + X_{92} + X_{124} + X_{156} + X_{188} \quad (236)$$

$$+ X_{220} + X_{252} = +34 \quad \text{(B28)} \quad (237)$$

$$X_{29} + X_{61} + X_{93} + X_{125} + X_{157} + X_{189} \quad (238)$$

$$+ X_{221} + X_{253} = +9 \quad \text{(B29)} \quad (239)$$

$$X_{30} + X_{62} + X_{94} + X_{126} + X_{158} + X_{190} \quad (240)$$

$$+ X_{222} + X_{254} = +9 \quad \text{(B30)} \quad (241)$$

$$X_{31} + X_{63} + X_{95} + X_{127} + X_{159} + X_{191} \quad (242)$$

$$+ X_{223} + X_{255} = +13 \quad \text{(B31)} \quad (243)$$

(244)

3.2 不等式约束 (272 个)

$$X_0 - 2Y_0 \leq +0 \quad \text{(G0)} \quad (245)$$

$$X_1 - 11Y_1 \leq +0 \quad \text{(G1)} \quad (246)$$

$$X_2 - 15Y_2 \leq +0 \quad \text{(G2)} \quad (247)$$

$$X_3 - 3Y_3 \leq +0 \quad \text{(G3)} \quad (248)$$

$$X_4 - 15Y_4 \leq +0 \quad \text{(G4)} \quad (249)$$

$$X_5 - 7Y_5 \leq +0 \quad \text{(G5)} \quad (250)$$

$$X_6 - 2Y_6 \leq +0 \quad \text{(G6)} \quad (251)$$

$$X_7 - 15Y_7 \leq +0 \quad \text{(G7)} \quad (252)$$

$$X_8 - 14Y_8 \leq +0 \quad \text{(G8)} \quad (253)$$

$$X_9 - 9Y_9 \leq +0 \quad \text{(G9)} \quad (254)$$

$$X_{10} - 6Y_{10} \leq +0 \quad \text{(G10)} \quad (255)$$

$$X_{11} - 15Y_{11} \leq +0 \quad \text{(G11)} \quad (256)$$

$$X_{12} - 15Y_{12} \leq +0 \quad \text{(G12)} \quad (257)$$

$$X_{13} - 9Y_{13} \leq +0 \quad \text{(G13)} \quad (258)$$

$$X_{14} - 8Y_{14} \leq +0 \quad \text{(G14)} \quad (259)$$

$$X_{15} - 7Y_{15} \leq +0 \quad \text{(G15)} \quad (260)$$

$$X_{16} - 10Y_{16} \leq +0 \quad \text{(G16)} \quad (261)$$

$$X_{17} - Y_{17} \leq +0 \quad \text{(G17)} \quad (262)$$

$$X_{18} - 15Y_{18} \leq +0 \quad \text{(G18)} \quad (263)$$

$$X_{19} - 4Y_{19} \leq +0 \quad \text{(G19)} \quad (264)$$

$$X_{20} - 3Y_{20} \leq +0 \quad \text{(G20)} \quad (265)$$

$$X_{21} - 5Y_{21} \leq +0 \quad \text{(G21)} \quad (266)$$

$$X_{22} - 7Y_{22} \leq +0 \quad \text{(G22)} \quad (267)$$

$$X_{23} - 15Y_{23} \leq +0 \quad \text{(G23)} \quad (268)$$

$$X_{24} - 9Y_{24} \leq +0 \quad \text{(G24)} \quad (269)$$

$$X_{25} - 2Y_{25} \leq +0 \quad \text{(G25)} \quad (270)$$

$$X_{26} - 6Y_{26} \leq +0 \quad \text{(G26)} \quad (271)$$

$$X_{27} - 6Y_{27} \leq +0 \quad \text{(G27)} \quad (272)$$

$$X_{28} - 15Y_{28} \leq +0 \quad \text{(G28)} \quad (273)$$

$$X_{29} - 9Y_{29} \leq +0 \quad \text{(G29)} \quad (274)$$

$$X_{30} - 9Y_{30} \leq +0 \quad \text{(G30)} \quad (275)$$

$$X_{31} - 13Y_{31} \leq +0 \quad \text{(G31)} \quad (276)$$

$$X_{32} - 2Y_{32} \leq +0 \quad \text{(G32)} \quad (277)$$

$$X_{33} - 11Y_{33} \leq +0 \quad \text{(G33)} \quad (278)$$

$$X_{34} - 44Y_{34} \leq +0 \quad \text{(G34)} \quad (279)$$

$$X_{35} - 3Y_{35} \leq +0 \quad \text{(G35)} \quad (280)$$

$$X_{36} - 18Y_{36} \leq +0 \quad \text{(G36)} \quad (281)$$

$$X_{37} - 7Y_{37} \leq +0 \quad \text{(G37)} \quad (282)$$

$$X_{38} - 2Y_{38} \leq +0 \quad \text{(G38)} \quad (283)$$

$$X_{39} - 18Y_{39} \leq +0 \quad \text{(G39)} \quad (284)$$

$$X_{40} - 14Y_{40} \leq +0 \quad \text{(G40)} \quad (285)$$

$$X_{41} - 9Y_{41} \leq +0 \quad \text{(G41)} \quad (286)$$

$$X_{42} - 6Y_{42} \leq +0 \quad \text{(G42)} \quad (287)$$

$$X_{43} - 43Y_{43} \leq +0 \quad \text{(G43)} \quad (288)$$

$$X_{44} - 22Y_{44} \leq +0 \quad \text{(G44)} \quad (289)$$

$$X_{45} - 9Y_{45} \leq +0 \quad \text{(G45)} \quad (290)$$

$$X_{46} - 8Y_{46} \leq +0 \quad \text{(G46)} \quad (291)$$

$$X_{47} - 7Y_{47} \leq +0 \quad \text{(G47)} \quad (292)$$

$$X_{48} - 10Y_{48} \leq +0 \quad \text{(G48)} \quad (293)$$

$$X_{49} - Y_{49} \leq +0 \quad \text{(G49)} \quad (294)$$

$$X_{50} - 18Y_{50} \leq +0 \quad \text{(G50)} \quad (295)$$

$$X_{51} - 4Y_{51} \leq +0 \quad \text{(G51)} \quad (296)$$

$$X_{52} - 3Y_{52} \leq +0 \quad \text{(G52)} \quad (297)$$

$$X_{53} - 5Y_{53} \leq +0 \quad \text{(G53)} \quad (298)$$

$$X_{54} - 7Y_{54} \leq +0 \quad \text{(G54)} \quad (299)$$

$$X_{55} - 31Y_{55} \leq +0 \quad \text{(G55)} \quad (300)$$

$$X_{56} - 9Y_{56} \leq +0 \quad \text{(G56)} \quad (301)$$

$$X_{57} - 2Y_{57} \leq +0 \quad \text{(G57)} \quad (302)$$

$$X_{58} - 6Y_{58} \leq +0 \quad \text{(G58)} \quad (303)$$

$$X_{59} - 6Y_{59} \leq +0 \quad \text{(G59)} \quad (304)$$

$$X_{60} - 34Y_{60} \leq +0 \quad \text{(G60)} \quad (305)$$

$$X_{61} - 9Y_{61} \leq +0 \quad \text{(G61)} \quad (306)$$

$$X_{62} - 9Y_{62} \leq +0 \quad \text{(G62)} \quad (307)$$

$$X_{63} - 13Y_{63} \leq +0 \quad \text{(G63)} \quad (308)$$

$$X_{64} - 2Y_{64} \leq +0 \quad \text{(G64)} \quad (309)$$

$$X_{65} - 11Y_{65} \leq +0 \quad \text{(G65)} \quad (310)$$

$$X_{66} - 44Y_{66} \leq +0 \quad \text{(G66)} \quad (311)$$

$$X_{67} - 3Y_{67} \leq +0 \quad \text{(G67)} \quad (312)$$

$$X_{68} - 18Y_{68} \leq +0 \quad \text{(G68)} \quad (313)$$

$$X_{69} - 7Y_{69} \leq +0 \quad \text{(G69)} \quad (314)$$

$$X_{70} - 2Y_{70} \leq +0 \quad \text{(G70)} \quad (315)$$

$$X_{71} - 18Y_{71} \leq +0 \quad \text{(G71)} \quad (316)$$

$$X_{72} - 14Y_{72} \leq +0 \quad \text{(G72)} \quad (317)$$

$$X_{73} - 9Y_{73} \leq +0 \quad \text{(G73)} \quad (318)$$

$$X_{74} - 6Y_{74} \leq +0 \quad \text{(G74)} \quad (319)$$

$$X_{75} - 43Y_{75} \leq +0 \quad \text{(G75)} \quad (320)$$

$$X_{76} - 22Y_{76} \leq +0 \quad \text{(G76)} \quad (321)$$

$$X_{77} - 9Y_{77} \leq +0 \quad \text{(G77)} \quad (322)$$

$$X_{78} - 8Y_{78} \leq +0 \quad \text{(G78)} \quad (323)$$

$$X_{79} - 7Y_{79} \leq +0 \quad \text{(G79)} \quad (324)$$

$$X_{80} - 10Y_{80} \leq +0 \quad \text{(G80)} \quad (325)$$

$$X_{81} - Y_{81} \leq +0 \quad \text{(G81)} \quad (326)$$

$$X_{82} - 18Y_{82} \leq +0 \quad \text{(G82)} \quad (327)$$

$$X_{83} - 4Y_{83} \leq +0 \quad \text{(G83)} \quad (328)$$

$$X_{84} - 3Y_{84} \leq +0 \quad \text{(G84)} \quad (329)$$

$$X_{85} - 5Y_{85} \leq +0 \quad \text{(G85)} \quad (330)$$

$$X_{86} - 7Y_{86} \leq +0 \quad \text{(G86)} \quad (331)$$

$$X_{87} - 31Y_{87} \leq +0 \quad \text{(G87)} \quad (332)$$

$$X_{88} - 9Y_{88} \leq +0 \quad \text{(G88)} \quad (333)$$

$$X_{89} - 2Y_{89} \leq +0 \quad \text{(G89)} \quad (334)$$

$$X_{90} - 6Y_{90} \leq +0 \quad \text{(G90)} \quad (335)$$

$$X_{91} - 6Y_{91} \leq +0 \quad \text{(G91)} \quad (336)$$

$$X_{92} - 34Y_{92} \leq +0 \quad \text{(G92)} \quad (337)$$

$$X_{93} - 9Y_{93} \leq +0 \quad \text{(G93)} \quad (338)$$

$$X_{94} - 9Y_{94} \leq +0 \quad \text{(G94)} \quad (339)$$

$$X_{95} - 13Y_{95} \leq +0 \quad \text{(G95)} \quad (340)$$

$$X_{96} - 2Y_{96} \leq +0 \quad \text{(G96)} \quad (341)$$

$$X_{97} - 11Y_{97} \leq +0 \quad \text{(G97)} \quad (342)$$

$$X_{98} - 40Y_{98} \leq +0 \quad \text{(G98)} \quad (343)$$

$$X_{99} - 3Y_{99} \leq +0 \quad \text{(G99)} \quad (344)$$

$$X_{100} - 18Y_{100} \leq +0 \quad \text{(G100)} \quad (345)$$

$$X_{101} - 7Y_{101} \leq +0 \quad \text{(G101)} \quad (346)$$

$$X_{102} - 2Y_{102} \leq +0 \quad \text{(G102)} \quad (347)$$

$$X_{103} - 18Y_{103} \leq +0 \quad \text{(G103)} \quad (348)$$

$$X_{104} - 14Y_{104} \leq +0 \quad \text{(G104)} \quad (349)$$

$$X_{105} - 9Y_{105} \leq +0 \quad \text{(G105)} \quad (350)$$

$$X_{106} - 6Y_{106} \leq +0 \quad \text{(G106)} \quad (351)$$

$$X_{107} - 40Y_{107} \leq +0 \quad \text{(G107)} \quad (352)$$

$$X_{108} - 22Y_{108} \leq +0 \quad \text{(G108)} \quad (353)$$

$$X_{109} - 9Y_{109} \leq +0 \quad \text{(G109)} \quad (354)$$

$$X_{110} - 8Y_{110} \leq +0 \quad \text{(G110)} \quad (355)$$

$$X_{111} - 7Y_{111} \leq +0 \quad \text{(G111)} \quad (356)$$

$$X_{112} - 10Y_{112} \leq +0 \quad \text{(G112)} \quad (357)$$

$$X_{113} - Y_{113} \leq +0 \quad \text{(G113)} \quad (358)$$

$$X_{114} - 18Y_{114} \leq +0 \quad \text{(G114)} \quad (359)$$

$$X_{115} - 4Y_{115} \leq +0 \quad \text{(G115)} \quad (360)$$

$$X_{116} - 3Y_{116} \leq +0 \quad \text{(G116)} \quad (361)$$

$$X_{117} - 5Y_{117} \leq +0 \quad \text{(G117)} \quad (362)$$

$$X_{118} - 7Y_{118} \leq +0 \quad \text{(G118)} \quad (363)$$

$$X_{119} - 31Y_{119} \leq +0 \quad \text{(G119)} \quad (364)$$

$$X_{120} - 9Y_{120} \leq +0 \quad \text{(G120)} \quad (365)$$

$$X_{121} - 2Y_{121} \leq +0 \quad \text{(G121)} \quad (366)$$

$$X_{122} - 6Y_{122} \leq +0 \quad \text{(G122)} \quad (367)$$

$$X_{123} - 6Y_{123} \leq +0 \quad \text{(G123)} \quad (368)$$

$$X_{124} - 34Y_{124} \leq +0 \quad \text{(G124)} \quad (369)$$

$$X_{125} - 9Y_{125} \leq +0 \quad \text{(G125)} \quad (370)$$

$$X_{126} - 9Y_{126} \leq +0 \quad \text{(G126)} \quad (371)$$

$$X_{127} - 13Y_{127} \leq +0 \quad \text{(G127)} \quad (372)$$

$$X_{128} - 2Y_{128} \leq +0 \quad \text{(G128)} \quad (373)$$

$$X_{129} - 11Y_{129} \leq +0 \quad \text{(G129)} \quad (374)$$

$$X_{130} - 36Y_{130} \leq +0 \quad \text{(G130)} \quad (375)$$

$$X_{131} - 3Y_{131} \leq +0 \quad \text{(G131)} \quad (376)$$

$$X_{132} - 18Y_{132} \leq +0 \quad \text{(G132)} \quad (377)$$

$$X_{133} - 7Y_{133} \leq +0 \quad \text{(G133)} \quad (378)$$

$$X_{134} - 2Y_{134} \leq +0 \quad \text{(G134)} \quad (379)$$

$$X_{135} - 18Y_{135} \leq +0 \quad \text{(G135)} \quad (380)$$

$$X_{136} - 14Y_{136} \leq +0 \quad \text{(G136)} \quad (381)$$

$$X_{137} - 9Y_{137} \leq +0 \quad \text{(G137)} \quad (382)$$

$$X_{138} - 6Y_{138} \leq +0 \quad \text{(G138)} \quad (383)$$

$$X_{139} - 36Y_{139} \leq +0 \quad \text{(G139)} \quad (384)$$

$$X_{140} - 22Y_{140} \leq +0 \quad \text{(G140)} \quad (385)$$

$$X_{141} - 9Y_{141} \leq +0 \quad \text{(G141)} \quad (386)$$

$$X_{142} - 8Y_{142} \leq +0 \quad \text{(G142)} \quad (387)$$

$$X_{143} - 7Y_{143} \leq +0 \quad \text{(G143)} \quad (388)$$

$$X_{144} - 10Y_{144} \leq +0 \quad \text{(G144)} \quad (389)$$

$$X_{145} - Y_{145} \leq +0 \quad \text{(G145)} \quad (390)$$

$$X_{146} - 18Y_{146} \leq +0 \quad \text{(G146)} \quad (391)$$

$$X_{147} - 4Y_{147} \leq +0 \quad \text{(G147)} \quad (392)$$

$$X_{148} - 3Y_{148} \leq +0 \quad \text{(G148)} \quad (393)$$

$$X_{149} - 5Y_{149} \leq +0 \quad \text{(G149)} \quad (394)$$

$$X_{150} - 7Y_{150} \leq +0 \quad \text{(G150)} \quad (395)$$

$$X_{151} - 31Y_{151} \leq +0 \quad \text{(G151)} \quad (396)$$

$$X_{152} - 9Y_{152} \leq +0 \quad \text{(G152)} \quad (397)$$

$$X_{153} - 2Y_{153} \leq +0 \quad \text{(G153)} \quad (398)$$

$$X_{154} - 6Y_{154} \leq +0 \quad \text{(G154)} \quad (399)$$

$$X_{155} - 6Y_{155} \leq +0 \quad \text{(G155)} \quad (400)$$

$$X_{156} - 34Y_{156} \leq +0 \quad \text{(G156)} \quad (401)$$

$$X_{157} - 9Y_{157} \leq +0 \quad \text{(G157)} \quad (402)$$

$$X_{158} - 9Y_{158} \leq +0 \quad \text{(G158)} \quad (403)$$

$$X_{159} - 13Y_{159} \leq +0 \quad \text{(G159)} \quad (404)$$

$$X_{160} - 2Y_{160} \leq +0 \quad \text{(G160)} \quad (405)$$

$$X_{161} - 11Y_{161} \leq +0 \quad \text{(G161)} \quad (406)$$

$$X_{162} - 36Y_{162} \leq +0 \quad \text{(G162)} \quad (407)$$

$$X_{163} - 3Y_{163} \leq +0 \quad \text{(G163)} \quad (408)$$

$$X_{164} - 18Y_{164} \leq +0 \quad \text{(G164)} \quad (409)$$

$$X_{165} - 7Y_{165} \leq +0 \quad \text{(G165)} \quad (410)$$

$$X_{166} - 2Y_{166} \leq +0 \quad \text{(G166)} \quad (411)$$

$$X_{167} - 18Y_{167} \leq +0 \quad \text{(G167)} \quad (412)$$

$$X_{168} - 14Y_{168} \leq +0 \quad \text{(G168)} \quad (413)$$

$$X_{169} - 9Y_{169} \leq +0 \quad \text{(G169)} \quad (414)$$

$$X_{170} - 6Y_{170} \leq +0 \quad \text{(G170)} \quad (415)$$

$$X_{171} - 36Y_{171} \leq +0 \quad \text{(G171)} \quad (416)$$

$$X_{172} - 22Y_{172} \leq +0 \quad \text{(G172)} \quad (417)$$

$$X_{173} - 9Y_{173} \leq +0 \quad \text{(G173)} \quad (418)$$

$$X_{174} - 8Y_{174} \leq +0 \quad \text{(G174)} \quad (419)$$

$$X_{175} - 7Y_{175} \leq +0 \quad \text{(G175)} \quad (420)$$

$$X_{176} - 10Y_{176} \leq +0 \quad \text{(G176)} \quad (421)$$

$$X_{177} - Y_{177} \leq +0 \quad \text{(G177)} \quad (422)$$

$$X_{178} - 18Y_{178} \leq +0 \quad \text{(G178)} \quad (423)$$

$$X_{179} - 4Y_{179} \leq +0 \quad \text{(G179)} \quad (424)$$

$$X_{180} - 3Y_{180} \leq +0 \quad \text{(G180)} \quad (425)$$

$$X_{181} - 5Y_{181} \leq +0 \quad \text{(G181)} \quad (426)$$
$$X_{182} - 7Y_{182} \leq +0 \quad \text{(G182)} \quad (427)$$
$$X_{183} - 31Y_{183} \leq +0 \quad \text{(G183)} \quad (428)$$
$$X_{184} - 9Y_{184} \leq +0 \quad \text{(G184)} \quad (429)$$
$$X_{185} - 2Y_{185} \leq +0 \quad \text{(G185)} \quad (430)$$
$$X_{186} - 6Y_{186} \leq +0 \quad \text{(G186)} \quad (431)$$
$$X_{187} - 6Y_{187} \leq +0 \quad \text{(G187)} \quad (432)$$
$$X_{188} - 34Y_{188} \leq +0 \quad \text{(G188)} \quad (433)$$
$$X_{189} - 9Y_{189} \leq +0 \quad \text{(G189)} \quad (434)$$
$$X_{190} - 9Y_{190} \leq +0 \quad \text{(G190)} \quad (435)$$
$$X_{191} - 13Y_{191} \leq +0 \quad \text{(G191)} \quad (436)$$
$$X_{192} - 2Y_{192} \leq +0 \quad \text{(G192)} \quad (437)$$
$$X_{193} - 11Y_{193} \leq +0 \quad \text{(G193)} \quad (438)$$
$$X_{194} - 44Y_{194} \leq +0 \quad \text{(G194)} \quad (439)$$
$$X_{195} - 3Y_{195} \leq +0 \quad \text{(G195)} \quad (440)$$
$$X_{196} - 18Y_{196} \leq +0 \quad \text{(G196)} \quad (441)$$
$$X_{197} - 7Y_{197} \leq +0 \quad \text{(G197)} \quad (442)$$
$$X_{198} - 2Y_{198} \leq +0 \quad \text{(G198)} \quad (443)$$
$$X_{199} - 18Y_{199} \leq +0 \quad \text{(G199)} \quad (444)$$
$$X_{200} - 14Y_{200} \leq +0 \quad \text{(G200)} \quad (445)$$
$$X_{201} - 9Y_{201} \leq +0 \quad \text{(G201)} \quad (446)$$
$$X_{202} - 6Y_{202} \leq +0 \quad \text{(G202)} \quad (447)$$
$$X_{203} - 43Y_{203} \leq +0 \quad \text{(G203)} \quad (448)$$
$$X_{204} - 22Y_{204} \leq +0 \quad \text{(G204)} \quad (449)$$
$$X_{205} - 9Y_{205} \leq +0 \quad \text{(G205)} \quad (450)$$
$$X_{206} - 8Y_{206} \leq +0 \quad \text{(G206)} \quad (451)$$
$$X_{207} - 7Y_{207} \leq +0 \quad \text{(G207)} \quad (452)$$
$$X_{208} - 10Y_{208} \leq +0 \quad \text{(G208)} \quad (453)$$
$$X_{209} - Y_{209} \leq +0 \quad \text{(G209)} \quad (454)$$
$$X_{210} - 18Y_{210} \leq +0 \quad \text{(G210)} \quad (455)$$
$$X_{211} - 4Y_{211} \leq +0 \quad \text{(G211)} \quad (456)$$
$$X_{212} - 3Y_{212} \leq +0 \quad \text{(G212)} \quad (457)$$
$$X_{213} - 5Y_{213} \leq +0 \quad \text{(G213)} \quad (458)$$
$$X_{214} - 7Y_{214} \leq +0 \quad \text{(G214)} \quad (459)$$
$$X_{215} - 31Y_{215} \leq +0 \quad \text{(G215)} \quad (460)$$
$$X_{216} - 9Y_{216} \leq +0 \quad \text{(G216)} \quad (461)$$
$$X_{217} - 2Y_{217} \leq +0 \quad \text{(G217)} \quad (462)$$
$$X_{218} - 6Y_{218} \leq +0 \quad \text{(G218)} \quad (463)$$
$$X_{219} - 6Y_{219} \leq +0 \quad \text{(G219)} \quad (464)$$
$$X_{220} - 34Y_{220} \leq +0 \quad \text{(G220)} \quad (465)$$
$$X_{221} - 9Y_{221} \leq +0 \quad \text{(G221)} \quad (466)$$
$$X_{222} - 9Y_{222} \leq +0 \quad \text{(G222)} \quad (467)$$

$$X_{223} - 13Y_{223} \leq +0 \quad \text{(G223)} \tag{468}$$
$$X_{224} - 2Y_{224} \leq +0 \quad \text{(G224)} \tag{469}$$
$$X_{225} - 11Y_{225} \leq +0 \quad \text{(G225)} \tag{470}$$
$$X_{226} - 44Y_{226} \leq +0 \quad \text{(G226)} \tag{471}$$
$$X_{227} - 3Y_{227} \leq +0 \quad \text{(G227)} \tag{472}$$
$$X_{228} - 18Y_{228} \leq +0 \quad \text{(G228)} \tag{473}$$
$$X_{229} - 7Y_{229} \leq +0 \quad \text{(G229)} \tag{474}$$
$$X_{230} - 2Y_{230} \leq +0 \quad \text{(G230)} \tag{475}$$
$$X_{231} - 18Y_{231} \leq +0 \quad \text{(G231)} \tag{476}$$
$$X_{232} - 14Y_{232} \leq +0 \quad \text{(G232)} \tag{477}$$
$$X_{233} - 9Y_{233} \leq +0 \quad \text{(G233)} \tag{478}$$
$$X_{234} - 6Y_{234} \leq +0 \quad \text{(G234)} \tag{479}$$
$$X_{235} - 43Y_{235} \leq +0 \quad \text{(G235)} \tag{480}$$
$$X_{236} - 22Y_{236} \leq +0 \quad \text{(G236)} \tag{481}$$
$$X_{237} - 9Y_{237} \leq +0 \quad \text{(G237)} \tag{482}$$
$$X_{238} - 8Y_{238} \leq +0 \quad \text{(G238)} \tag{483}$$
$$X_{239} - 7Y_{239} \leq +0 \quad \text{(G239)} \tag{484}$$
$$X_{240} - 10Y_{240} \leq +0 \quad \text{(G240)} \tag{485}$$
$$X_{241} - Y_{241} \leq +0 \quad \text{(G241)} \tag{486}$$
$$X_{242} - 18Y_{242} \leq +0 \quad \text{(G242)} \tag{487}$$
$$X_{243} - 4Y_{243} \leq +0 \quad \text{(G243)} \tag{488}$$
$$X_{244} - 3Y_{244} \leq +0 \quad \text{(G244)} \tag{489}$$
$$X_{245} - 5Y_{245} \leq +0 \quad \text{(G245)} \tag{490}$$
$$X_{246} - 7Y_{246} \leq +0 \quad \text{(G246)} \tag{491}$$
$$X_{247} - 31Y_{247} \leq +0 \quad \text{(G247)} \tag{492}$$
$$X_{248} - 9Y_{248} \leq +0 \quad \text{(G248)} \tag{493}$$
$$X_{249} - 2Y_{249} \leq +0 \quad \text{(G249)} \tag{494}$$
$$X_{250} - 6Y_{250} \leq +0 \quad \text{(G250)} \tag{495}$$
$$X_{251} - 6Y_{251} \leq +0 \quad \text{(G251)} \tag{496}$$
$$X_{252} - 34Y_{252} \leq +0 \quad \text{(G252)} \tag{497}$$
$$X_{253} - 9Y_{253} \leq +0 \quad \text{(G253)} \tag{498}$$
$$X_{254} - 9Y_{254} \leq +0 \quad \text{(G254)} \tag{499}$$
$$X_{255} - 13Y_{255} \leq +0 \quad \text{(G255)} \tag{500}$$
(501)

4 变量定义

4.1 二元变量 (256 个)

$$Y_i \in \{0, 1\}, \quad i \in \{0, 1, 2, \ldots, 255\} \tag{502}$$

二元变量示例 (显示前 50 个，共 256 个):
Y_{254}, Y_0, Y_1, Y_2, Y_3, Y_4, Y_5, Y_6, Y_7, Y_8,

Y_{9}, Y_{10}, Y_{11}, Y_{12}, Y_{13}, Y_{14}, Y_{15}, Y_{16}, Y_{17}, Y_{18},
Y_{19}, Y_{20}, Y_{21}, Y_{22}, Y_{23}, Y_{24}, Y_{25}, Y_{26}, Y_{27}, Y_{28},
Y_{29}, Y_{30}, Y_{31}, Y_{32}, Y_{33}, Y_{34}, Y_{35}, Y_{36}, Y_{37}, Y_{38},
Y_{39}, Y_{40}, Y_{41}, Y_{42}, Y_{43}, Y_{44}, Y_{45}, Y_{46}, Y_{47}, Y_{48}
... 还有 206 个二元变量

4.2 连续变量 (256 个)

所有连续变量均为非负实数:

$$X_j \geq 0, \quad j \in \{0, 1, 2, \ldots, 255\} \tag{503}$$

连续变量说明: 模型包含 256 个连续决策变量，所有变量的取值范围均为非负实数域。