

Distance From Mt. Doom (As Nazgul Fly)

Grey Havens	60
The Shire	65
Bree	51
Rivendell	45
Moria	42
Gladden Fields	41
The Lonely Mountain	47
Mirkwood	42
Lorien	40
Dol Guldur	39
Fangorn Forest	35
Helm's Deep	28
Rauros	20
Dead Marshes	16
Minas Tirith	9
Belfalas	25
Mount Doom	0

A* Search

Frontier

~~Shire~~ = 65
GH - 73
~~Bree~~ = 58
~~HD~~ = ~~64~~ 58
Rivendell - 68
FF - 67
~~Rewros~~ = 55
~~MT~~ = 52
Beltolas - 73
~~MD~~ = ~~74~~ 63
~~DM~~ = 54
Lorien - 81
DG - 83

Visited

Shire
Bree
HD
MT
Rewros
Dead Marshes
Mount Doom ✨



Start: Start

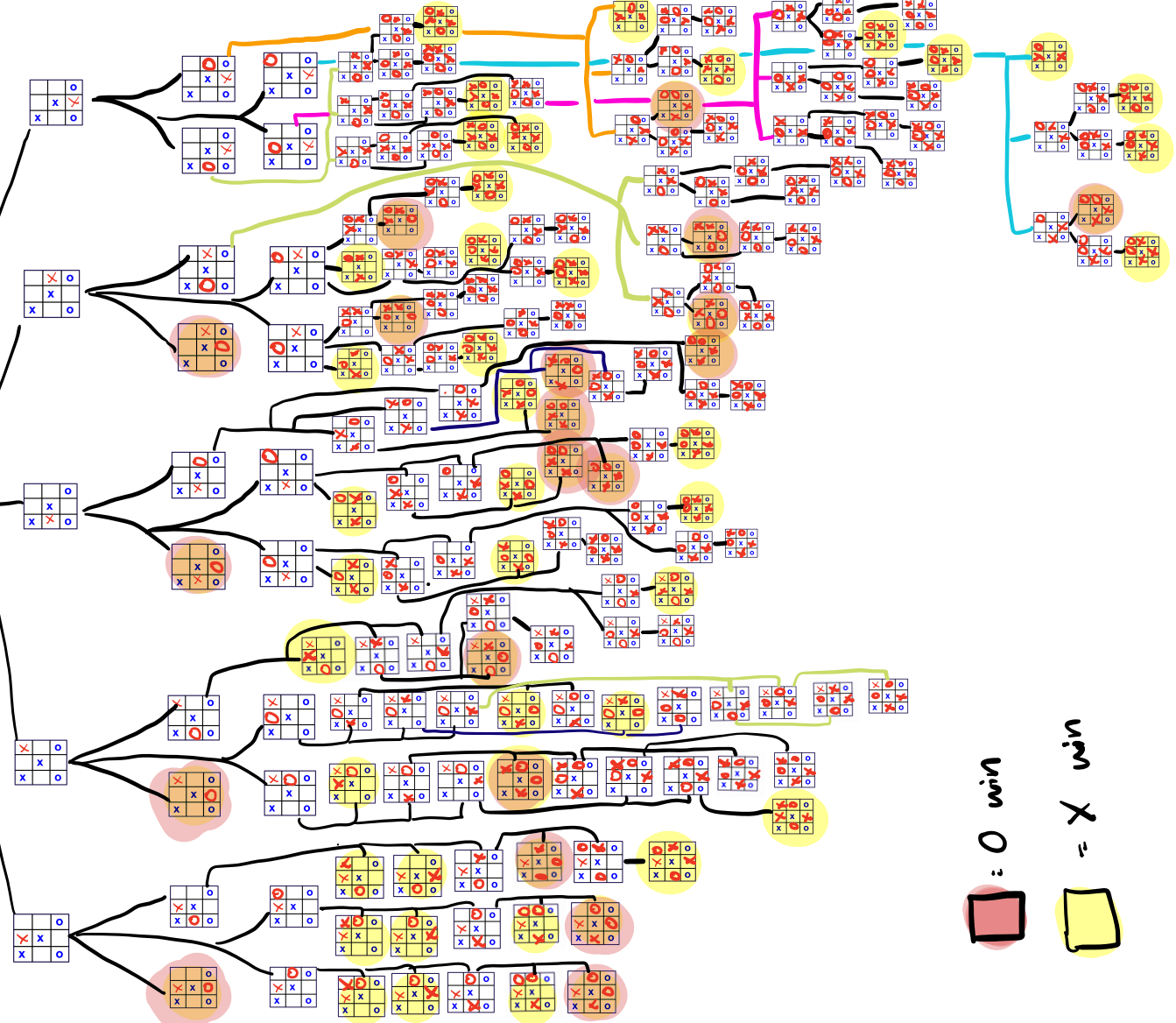
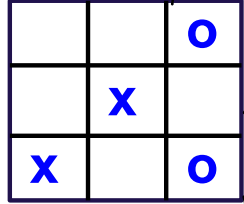
Goal: King Candy

Uniform Card Seeds

<u>Frontier</u>	<u>Visited</u>
Start	Start
Peanut Acres - 4	PA
Licorice Forest - 8	GN
Gramma Nut - 7	LF
Lollipop Woods - 8	LW
Gloppy - 9	Gloppy
Gumdrop Pass - 15	KC ★
Peppermint Forest - 17	
King Candy - 11	
Lolly - 20	

Draw the MiniMax tree showing all possible outcomes

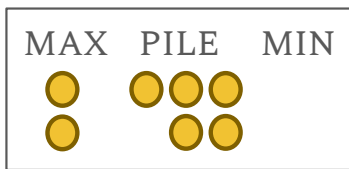
Assume X starts



 = O win

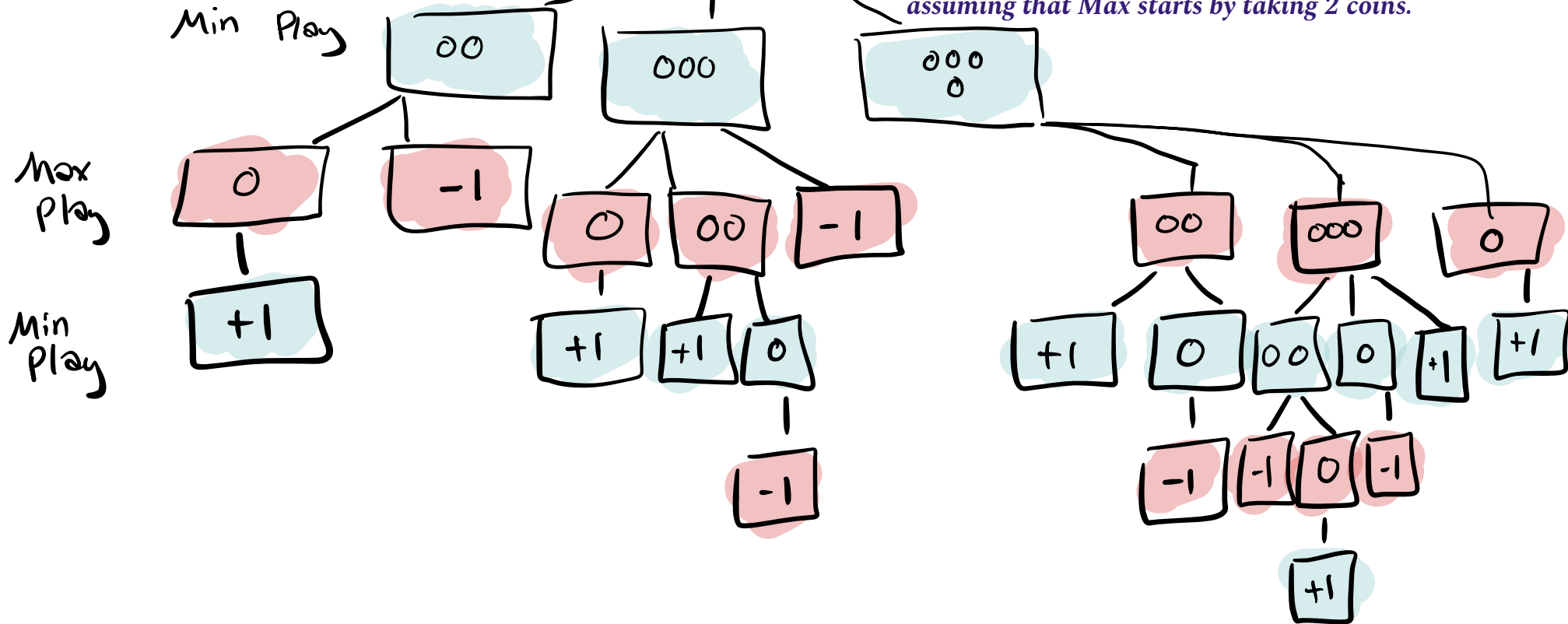
 = X win

Board after Max's first turn (Min's turn to play)

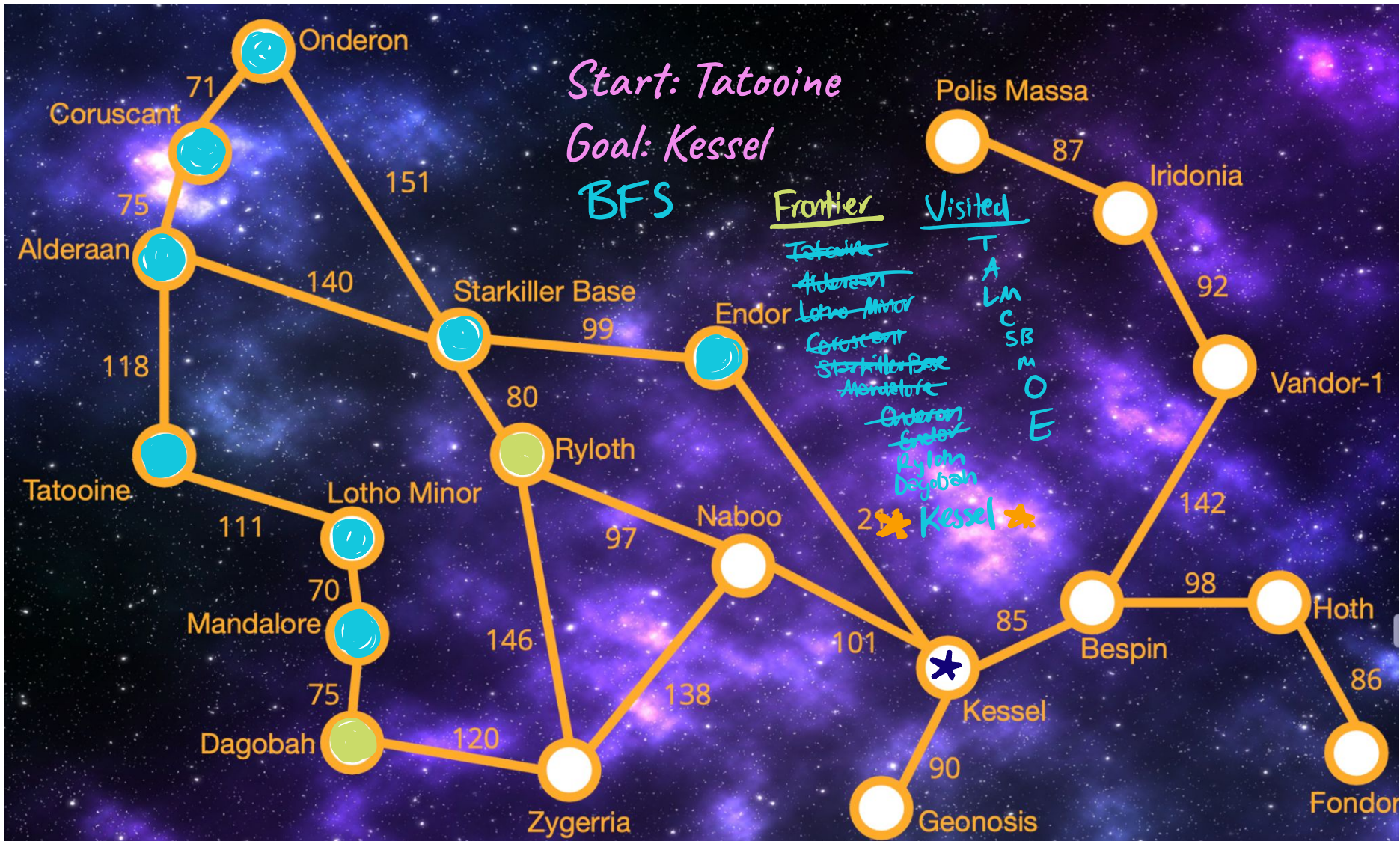


Nim is a game where on each turn, a player removes one, two, or three coins from a center pile. Whoever takes the last coin loses.

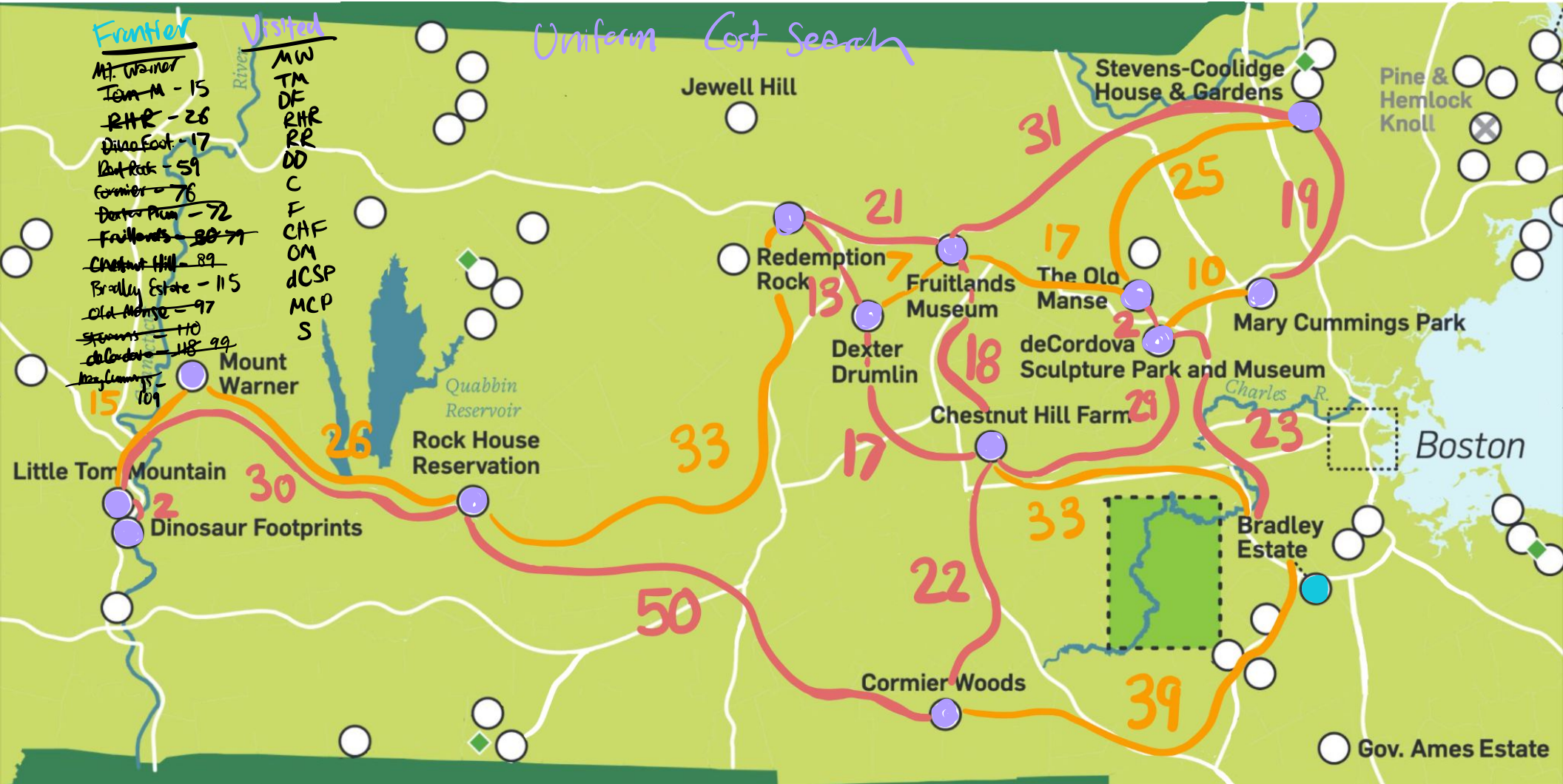
Model the rest of this game of Nim with MiniMax, assuming that Max starts by taking 2 coins.











Start: Mount Warner

Goal: Stevens-Coolidge House & Gardens

Image adapted from the Massachusetts Trustees of Reservations