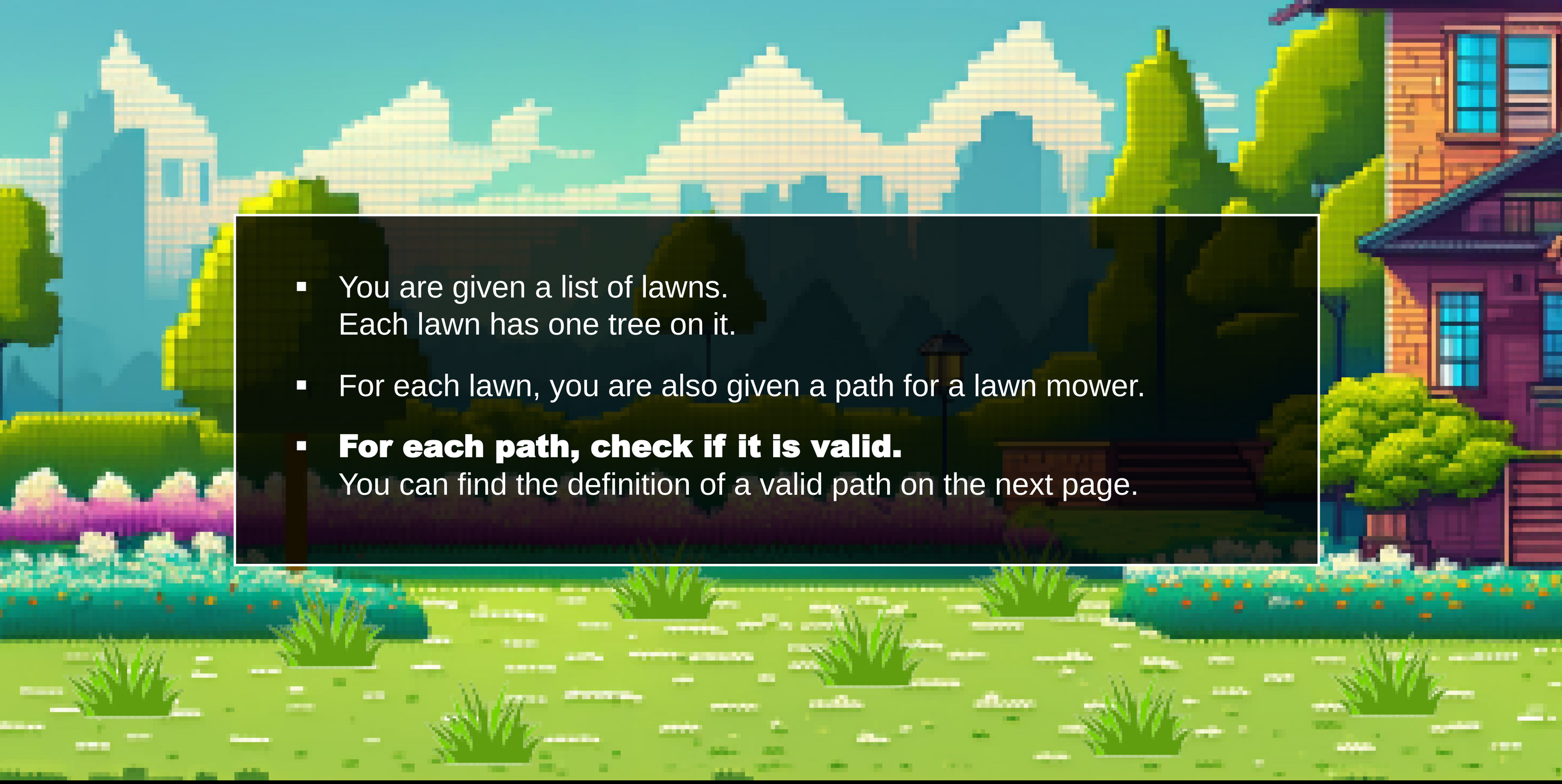
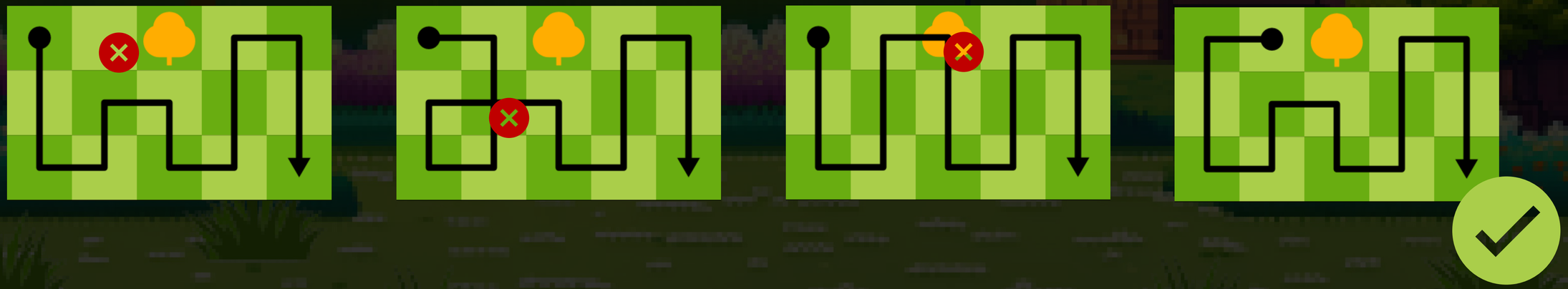

LEVEL 3



- You are given a list of lawns.
  Each lawn has one tree on it.
- For each lawn, you are also given a path for a lawn mower.
- **For each path, check if it is valid.**
  You can find the definition of a valid path on the next page.

A path is valid if:

- It visits each free cell of the given lawn
- It **does not** visit any cell twice
- It **does not** visit the cell with the tree on it
- It **does not** leave the lawn



Input

Name	Description	Example
N	Number of lawns	4 5 3 ..X.. .... SSDWDSDWWDSS 5 3 ..X.. .... DSSAWDDSDWWDSS 5 3 ..X.. .... SSDWWDSSDWWDSS 5 3 ..X.. .... ASSDWDSDWWDSS
Repeated N times		
Lawn size	**The width followed by the height of the lawn, separated by a space**	
Lawn	**A paragraph of characters** **‘.’ represents a free cell** **‘X’ represents the tree**	
Path	A string of characters	

Output

Name	Description	Example
Validity (repeated N times)	**‘VALID’ if the conditions of the previous page are met** **Otherwise ‘INVALID’**	INVALID INVALID INVALID VALID

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Lawn Mower