Assignment

In Java, code a simulation of the classic children's game "*Chutes And Ladders."* There is no "right" answer to this assignment, we will be evaluating the design choices and coding style.

Instructions

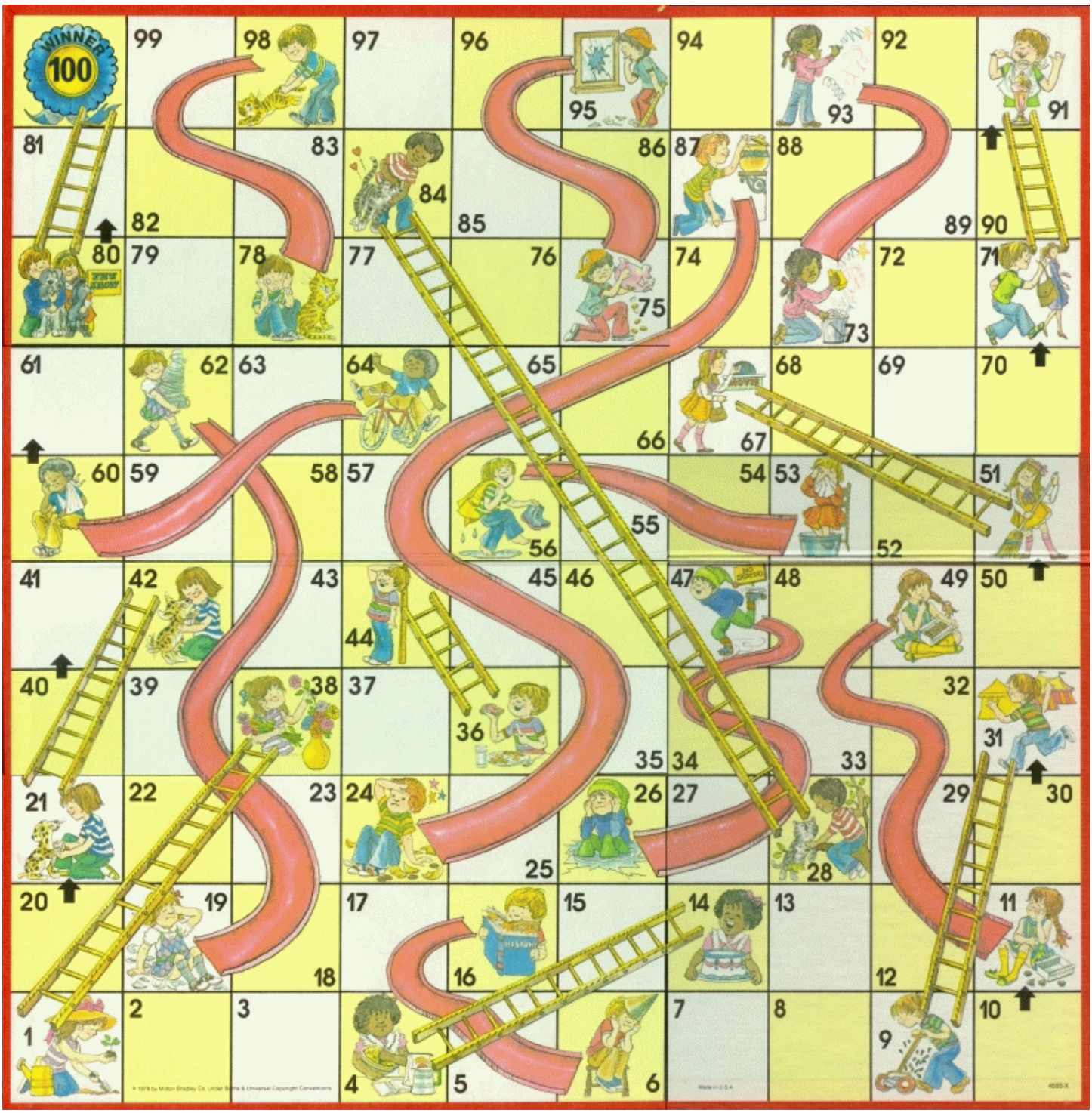
1. Use this document as a business spec
2. Design and develop the business objects only (do not create a GUI)
3. To demonstrate that the software works, write a "main" method that simulates 2 to 4 four players and generates output similar to the sample below
4. Deliver the final code in .java files and any other resources required to run the program
5. Please indicate in comments or in a separate document any assumptions you make about the requirements, as well as any "ToDo" items that you would do if this was a "real" project but that are not in the requirements given.

Sample Output

The sample output displays the player's name, the spaces from and to which the player moves, when the player goes up a ladder or down a chute and a winner of the game.

```
java com.candidate.chutesladders.ChutesAndLadders

1: Eric: 0 --> 7
2: Paul: 0 --> 1 --LADDER--> 38
3: Eric: 7 --> 13
4: Paul: 38 --> 45
5: Eric: 13 --> 15
6: Paul: 45 --> 50
7: Eric: 15 --> 17
8: Paul: 50 --> 57
9: Eric: 17 --> 22
10: Paul: 57 --> 64 --CHUTE--> 60
11: Eric: 22 --> 27
12: Paul: 60 --> 63
13: Eric: 27 --> 33
14: Paul: 63 --> 67
15: Eric: 33 --> 37
16: Paul: 67 --> 68
17: Eric: 37 --> 39
18: Paul: 68 --> 70
19: Eric: 39 --> 43
20: Paul: 70 --> 72
21: Eric: 43 --> 46
22: Paul: 72 --> 73
23: Eric: 46 --> 51 --LADDER--> 67
24: Paul: 73 --> 78
25: Eric: 67 --> 68
26: Paul: 78 --> 80
27: Eric: 68 --> 72
28: Paul: 80 --> 85
29: Eric: 72 --> 73
30: Paul: 85 --> 92
31: Eric: 73 --> 79
32: Paul: 92 --> 95 --CHUTE--> 75
33: Eric: 79 --> 82
34: Paul: 75 --> 79
35: Eric: 82 --> 85
36: Paul: 79 --> 83
37: Eric: 85 --> 86
38: Paul: 83 --> 88 --LADDER--> 100
The winner is Paul!
```


WINNER
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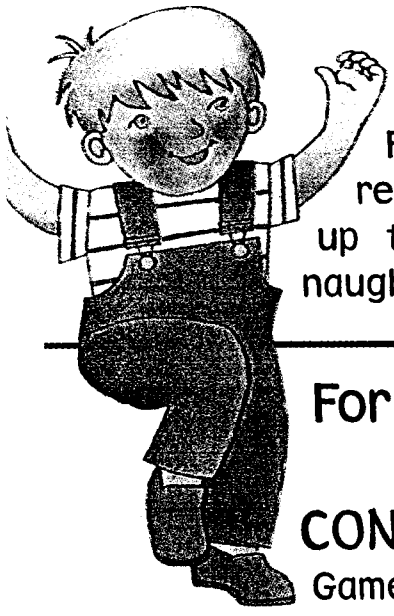
Chutes and Ladders® INSTRUCTIONS

⚠ WARNING:
CHOKING HAZARD-Small parts.
Not for children under 3 years.



This delightful game is simple and easy to play, even for children who can't read. Fun pictures help kids understand the rewards of doing good deeds as they climb up the ladders—and the consequences of naughty ones as they slide down the chutes.

For 2 to 4 Players - Ages 4 to 7

CONTENTS:

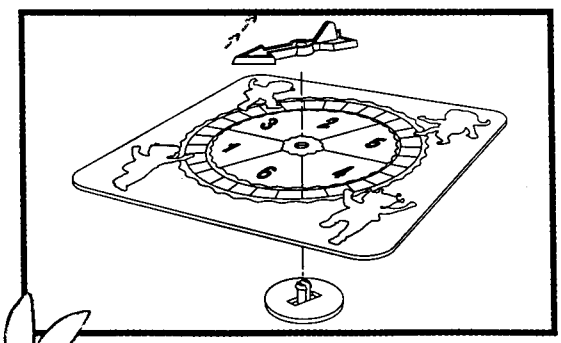
Gameboard, Spinner with plastic arrow,
4 pawns with plastic stands

OBJECT

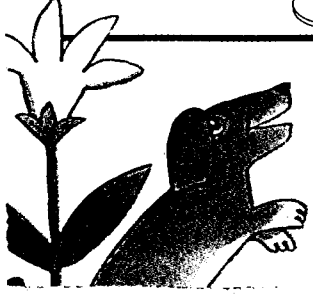
Be the first player to reach square #100.

THE FIRST TIME YOU PLAY

1. Punch out the 4 pawns from the cardboard sheet. Put each pawn into a plastic stand.



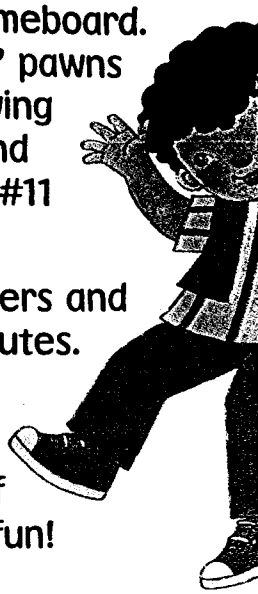
2. Punch out the spinner board from the sheet. Discard the waste. Remove the spinner arrow and base from the runner and toss out any waste. Then put together the spinner as shown.



SETUP

1. Position the gameboard so all the players can easily move their pawns from square to square.

2. ALL ABOUT THE SQUARES: Take a peek at the gameboard. The squares are numbered from 1 to 100. Players' pawns will move back and forth across the board, following the numbers upward—starting at square #1 and moving right toward square #10, then up to square #11 and left toward square #20, etc.



Of course, you can also move up by climbing ladders and unfortunately go down, too, by sliding down chutes. More about that later.

3. Everyone chooses a pawn to play. Any extra pawns are out of play. Chosen pawns are placed off the board near square #1. Now get ready for the fun!

HOW TO PLAY

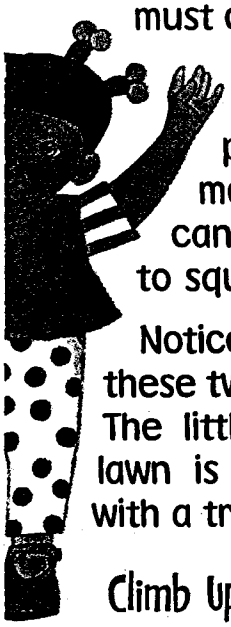
1. Everyone spins the spinner. The player with the highest number goes first. Play proceeds to the left.

2. WHAT TO DO ON YOUR TURN: On your turn, spin the spinner and move your pawn, square by square, the number shown on the spinner. For example, on your first turn, if you spin a 5, move to square #5 on the board. Once you move your pawn, your turn is over.

3. Two or more pawns may be on the same space at the same time.

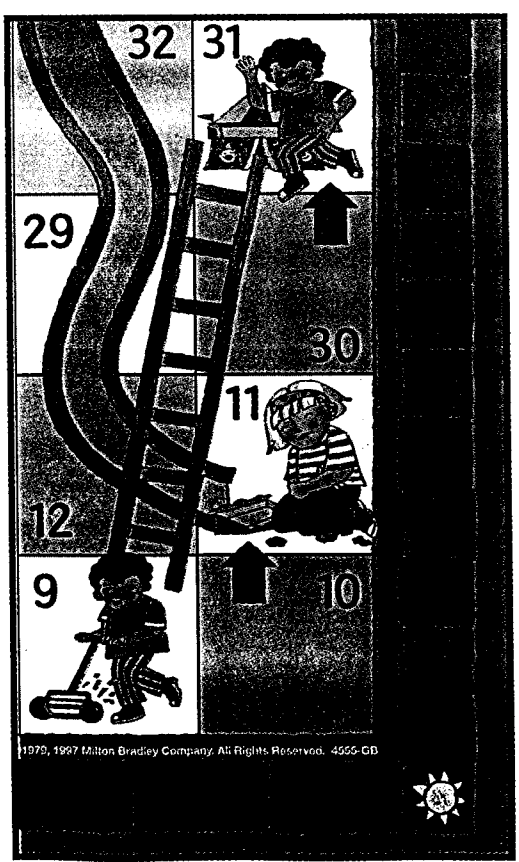
4. GOING UP A LADDER OR DOWN A CHUTE.

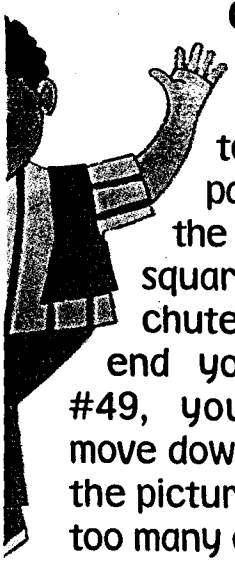
LADDERS: Any time a pawn ends its move on a picture square at the bottom of a ladder, that pawn must climb up to the picture square at the top of the ladder. For example, if you end your move on square #9, you can immediately move up to square #31.



Notice that the pictures on these two squares are related. The little boy who mows the lawn is rewarded for his job with a trip to the circus.

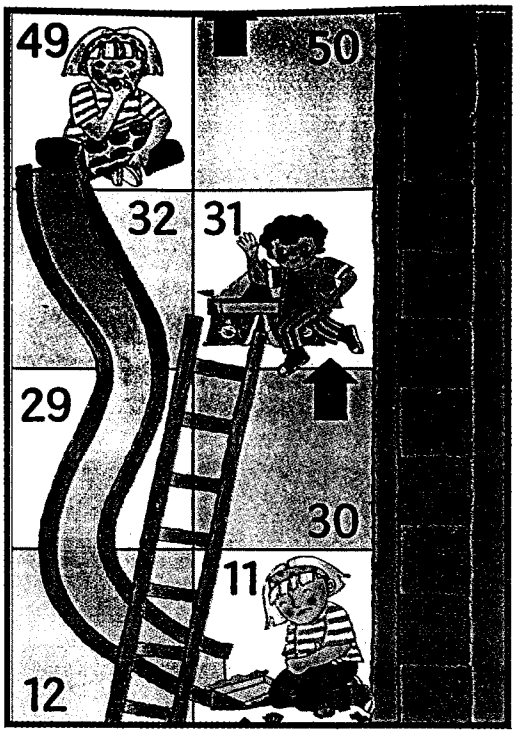
Climb Up With A Good Deed!





CHUTES: Any time a pawn ends its move on a picture square at the top of a chute, that pawn must slide down the chute to the picture square at the bottom of the chute. For example, if you end your move on square #49, you must immediately move down to square #11. Again, the pictures are related. Eating too many candies can give you a tummyache!

Naughty Deeds Slide You Back!



5. If your pawn ends its turn on any of the following spaces, your turn is over:

- a square with no picture
- a square with no picture and just an arrow
- a square that a ladder or chute just passes through
- a picture square at the top of a ladder
- a picture square at the bottom of a chute

WINNING THE GAME

The first player to reach the Blue Ribbon square #100 wins the game. You can get there 2 ways:

(1.) Land there by exact count. If your spin would take you past square #100, don't move. Try again on your next turn.

(2.) Climb there by ending your move on ladder square #80.

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P.O. Box 1247, East Longmeadow, MA 01028 4555-B