We've recently made an accessibility improvement to the community and therefore posts without any content are no longer allowed. Please use the spoiler feature or add a short message in the message body in order to submit your weekly challenge.

2022-05-26 Updates: Email: If you're not seeing emails be delivered from the Community, please check your spam and mark the Community emails as not junk. Thank you for your patience.

SIGN IN

Free Trial

Weekly Challenge

Solve the challenge, share your solution and summit the ranks of our Community!

Also available in | Français | Português | Español | ??

IDEAS WANTED

We're actively looking for ideas on how to improve Weekly Challenges and would love to hear what you think!

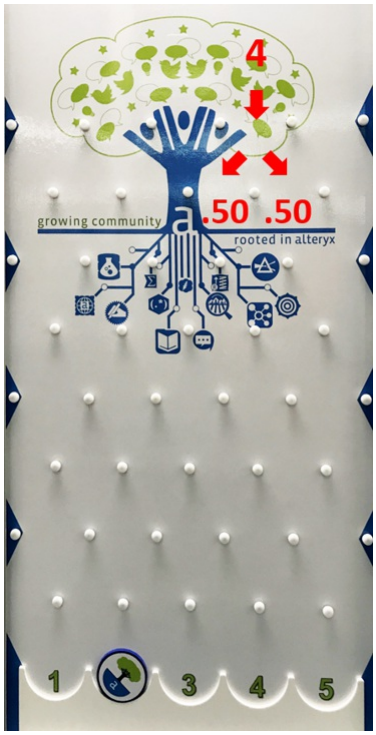
SUBMIT FEEDBACK

Weekly Challenge

Challenge #73: Plinko Probabilities

MattD
Alteryx Community Team

The solution to last week's challenge is HERE!



This year at Inspire, our attendees' ability to win games of chance will be tested – and not just because of the Las Vegas venue! The ability to obtain the hottest Alteryx swag will be decided by a round of Plinko at the Community hub. Can you use Alteryx to break down the probabilities of our board and ensure your odds are the best possible?

There are no start files to this week's challenge - any workflow or app that assigns relative probabilities to the final outcomes of the board above will suffice!

Hints below:

▷ Spoiler

challenge_73_solution.yxwz

Data Analysis | Difficult | Join | Parse | Preparation | Transform

Share | 3 LIKES | Reply

This site uses different types of cookies, including analytics and functional cookies (its own and from other sites). To change your cookie settings or find out more, click here. If you continue browsing our website, you accept these cookies.

Reject | I AGREE | LEARN MORE

I've taken a very rudimentary approach...

Spoiler

Plinko.yxmd

Share 3 LIKES Reply

alex
11 - Bolide

Needless to say I learned a lot more about Pascal's Triangles with this week's challenge. After some false starts I decided to use an iterative macro to get my results. I'm posting my solution now, but will clean it up a bit, add details and then repost it. My %'s are different than @patrick_digan so we'll need some additional responses to get some sort of consensus on the %'s. There is a 13.4% chance of puck starting in the 4th slot and ending up in the 2nd bucket as per the picture.

Spoiler

This was definitely a challenge worthy of being presented during Inspire17!

Plinko2.yxzp

Share 3 LIKES Reply

NicoleJohnson
15 - Aurora

Alright, @MattD - I will admit that I felt like it would be cheating to sit in on the Weekly Challenge session at Inspire this week. But then we started getting into Pascal's Triangles and API's and lions and tigers and bears... oh my. Not nice. Then @estherb47 and I spent the better part of the rest of Tuesday trying to figure out how to recreate Pascal's Triangle from scratch in Alteryx... So thanks for that :)

Anyway. Here's my solution! Bit of a different approach from @alex and @patrick_digan, I went with an app that prompts you for the number of Plinko slots & rows (so it's variable, you know, for bigger Plinko boards... because bigger boards = more cool prizes!). Then you select which slot you want to place your coin into, and it will spit out a report that tells you the probability of winning each prize.

Spoiler

Phew. 6 days in Vegas + Challenge 73 = skin AND brain are officially fried! Thanks for the great challenge!

PS. @JoeM - Look! I did an iterative macro!!... But I still want to pick your brain, because I'm afraid this may have just been an "I just accidentally clicked the right combo of things" situation... :)

Cheers, all!
NJ

Share 7 LIKES Reply

alex
11 - Bolide

I've cleaned up the original workflow and macro plus added descriptions of the formulas and processes I used to get my results. I also added options to change the number of slots and decision points (pegs). I couldn't have done it without modeling it and testing my thought process in Excel. I often have to first think about how I would create solutions in Excel to be able to create them in Alteryx.

Spoiler

Hope you find this solution helpful. Thanks.

Alex

PlinkoGameOdds.yxwz

Share 1 LIKE Reply

LordNeilLord
15 - Aurora

After driving myself crazy trying to build a macro to do this, I finally gave up and took an Old School approach...not my finest Alteryx workflow but I got there in the end...

Spoiler

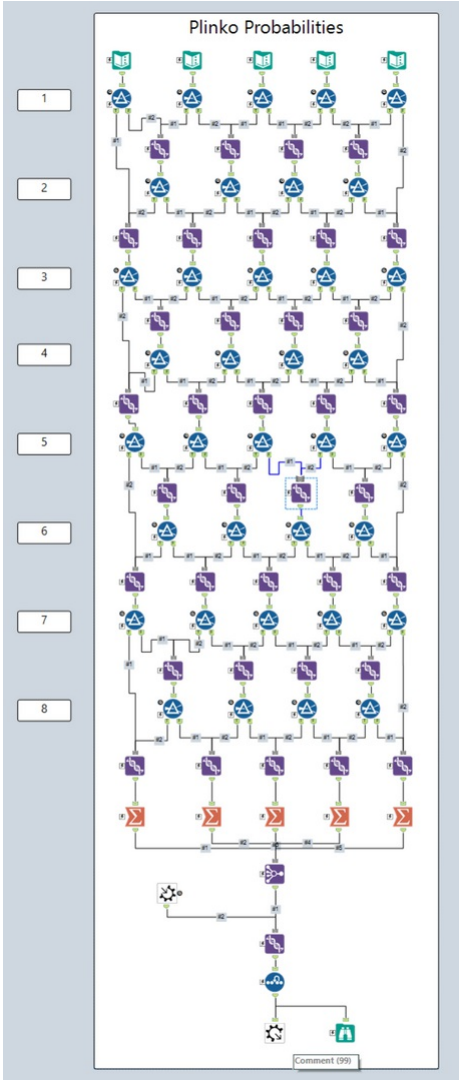
challenge_73_LNL.yxmd

Share 1 LIKE Reply

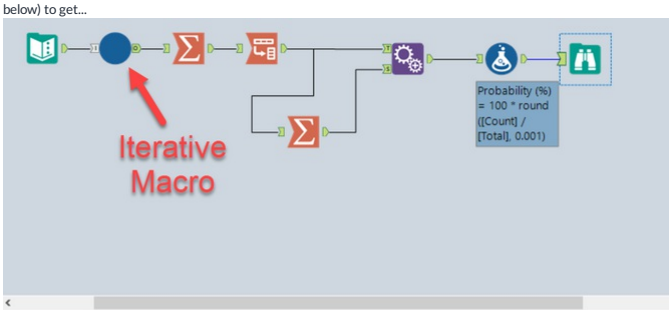
PhilipMannering
15 - Aurora

METHOD 1
Use the old combinatorial mathematics to workout the number of combinations for each slot and then divide by the total number of possible routes (2^8) for the probability. If there were no boundary the number of combinations would be 8C4 (=8!/4!/4!) for any slot directly under the placement, 8C3 for the slot left of the placement, 8C2 for the slot 2 places left of the placement, etc. Taking account of the boundary you need to add the combinations of the slot opposite the current slot if no boundary existed. So, for example, a counter placed in position 1 and landing in slot 1 the total probability would be (8C4 + 8C3)/2^8 and for position 1 and slot 2 the probability is (8C5 + 8C2)/2^8... Unfortunately I found it tricky to generalise for all cases. So I resorted to Method 2...

METHOD 2
Build your own Plinko Game in Alteryx and run it multiple times...



I simulate the 50/50 probability of the ball falling one way or the other using a filter tool with the expression rand() <0.5 and just union it all together in the right places. I set it as an iterative macro to run 1000 times and run in this workflow (see below) to get...



Results - Browse (9) - Input

4 of 4 Fields | Cell Viewer | 5 records displayed, 1399 bytes | Data

Record #	Position	Count	Total	Probability (%)
1	P1	337	1000	33.7
2	P2	319	1000	31.9
3	P3	211	1000	21.1
4	P4	95	1000	9.5
5	P5	38	1000	3.8

This method is numerical so results are approximate!

challenge_73_Plinko_Probabilities.yxmc

Share 13 LIKES Reply

MattD
Alteryx Community Team

In case anyone is taking the formulaic approach and needs help calculating factorials! https://gallery.alteryx.com/#!app/Wolfram-Alpha-Connector/59405f3ea18e9e02406720db

We're leaving this exercise open until next Monday, so keep the solutions coming! :)

Share 0 LIKES Reply

david_fetters
11 - Bolide

So i went with a low labor approach after thinking about ways to needlessly over complicate this. First challenge for me, so lets see how it plays out!

▷ Spoiler

Edit: hey i figured out spoilers!

david_fetters-Plinko.yxmd

david_fetters-Plinko2.yxmd

Share 1 LIKE Reply

NicoleJohnson
15 - Aurora

Turns out, I never posted my macro & workflow, and for some reason it won't let me edit my original post... soooo here you go.

PS. Super impressed with the varied solutions so far on this one. I'm guessing Vegas lost some money on these savvy odds-calculating wizards last week... ;)

challenge_73_NicoleJohnson.yxzp

Share 1 LIKE Reply

© 2022 Alteryx, Inc.