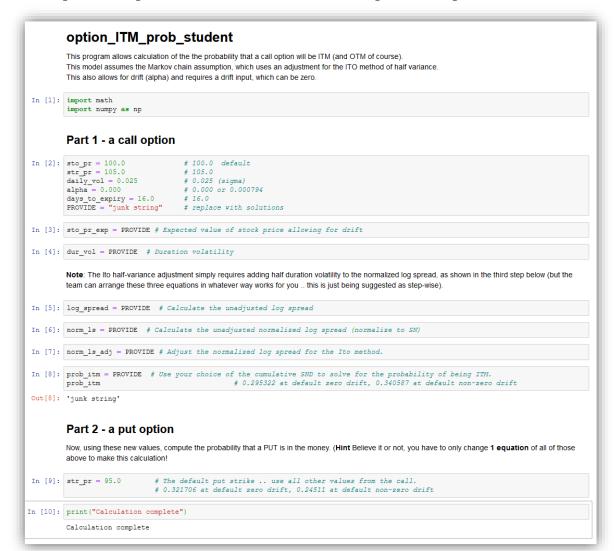
## Mudd (Palm Island Traders 📆) finance

## ITM option probability calculator – collective/team Homework In-class, February 10, 2020

1. Find this Jupyter Notebook (linked from the same page as this):

https://www.palmislandtraders.com/econ136/option\_itm\_prob\_student.html



- 2. Give your team access to the lecture entitled "Stock Price Probability Estimator" and review the Markov Chain formulas at the end of the lecture. You will essentially be coding those.
- 3. Go the Part 1 of the Jupyter Notebook on the left and solve it for the probability that the call option in default will expire in the money (ITM) if held to expiry, assuming zero drift. Use your choice of the cumulative standard normal density function (Prof Evans uses his own, which uses the error function).
- 4. Now solve the same using the suggested default drift (0.000794)
- 5. Go to Part 2 and try to figure out how to calculate the probability that a PUT (using a strike price of \$95, all other values that same as Part 1) for a zero drift assumption and the same default drift assumption.

Modify this model to your heart's content, BUT keep a clean copy of exactly this model for exam purposes.