

3rd Seminar on Data Science and Analytics

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Actuaries in the Gaming Industry - Experience Sharing

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Agenda



- Background – What’s the game about?
- How/Why I got involved?
- What does “actuarial” entail?
- Problem statements & actuarial solutions
- Are you game? Here are the tips!
- Conclusion
- Questions and answers!

6/4 9/1 25/1
5/2 12/1 50/1
5/1 16/1 100/1

Background – What's the game about?



Background

- ZED - <https://www.zed.run/>
- Digital horse racing game
 - Buy digital racehorses
 - Breed (and sell/own) digital racehorses
 - Race digital racehorse
- Powered by Blockchain & Smart Contracts





How/Why I got involved?

WHY ME ?

GOD

Why me?



- Awareness in Australia
 - Founders already knew they need an actuary
- Technical Skills
 - Actuarial & modelling
 - Blockchain
- Communication
 - Paraphrased the problem statement
 - Proposed high-level solution in an easy-to-understand language

50%

25%

25%

what are other
words for
actuary?



statistician, clerk, accountant,
bookkeeper, auditor, calculator,
reckoner, analyst, comptroller,
bean counter



 Thesaurus.plus

What does “actuarial” entail?

Actuary! Who / What?



WHAT IS AN
ACTUARY?

Source: [Institute and Faculty of Actuaries website](http://www.actuariesindia.org)

Actuary! Who / What?

Predict Future

Apply
Judgement

Manage
Risks

Use
Data

Simplify
Complex Things

Use
Statistics

Measure
Risks

Crunch Numbers



Problem statements & actuarial solutions

A quick recap

Race

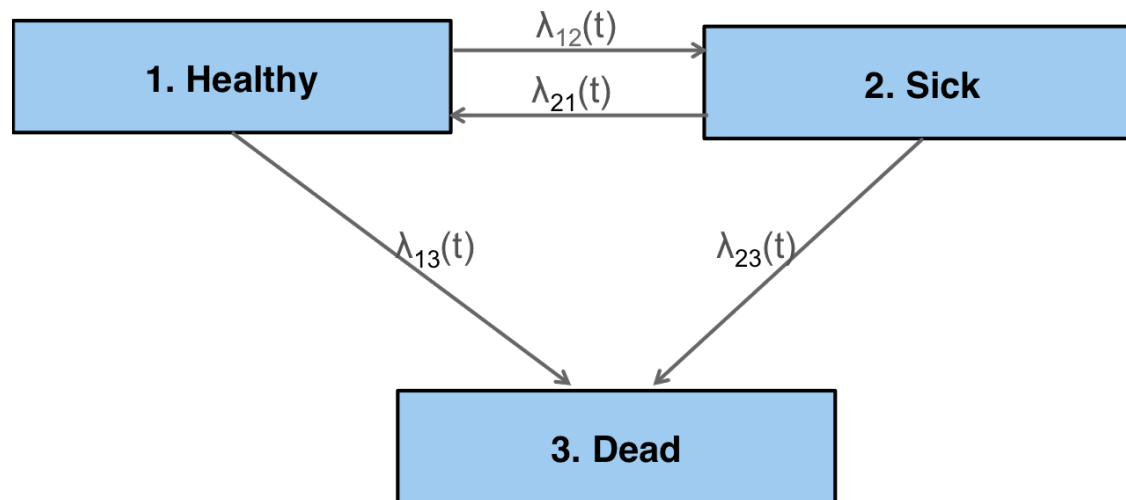


Breed



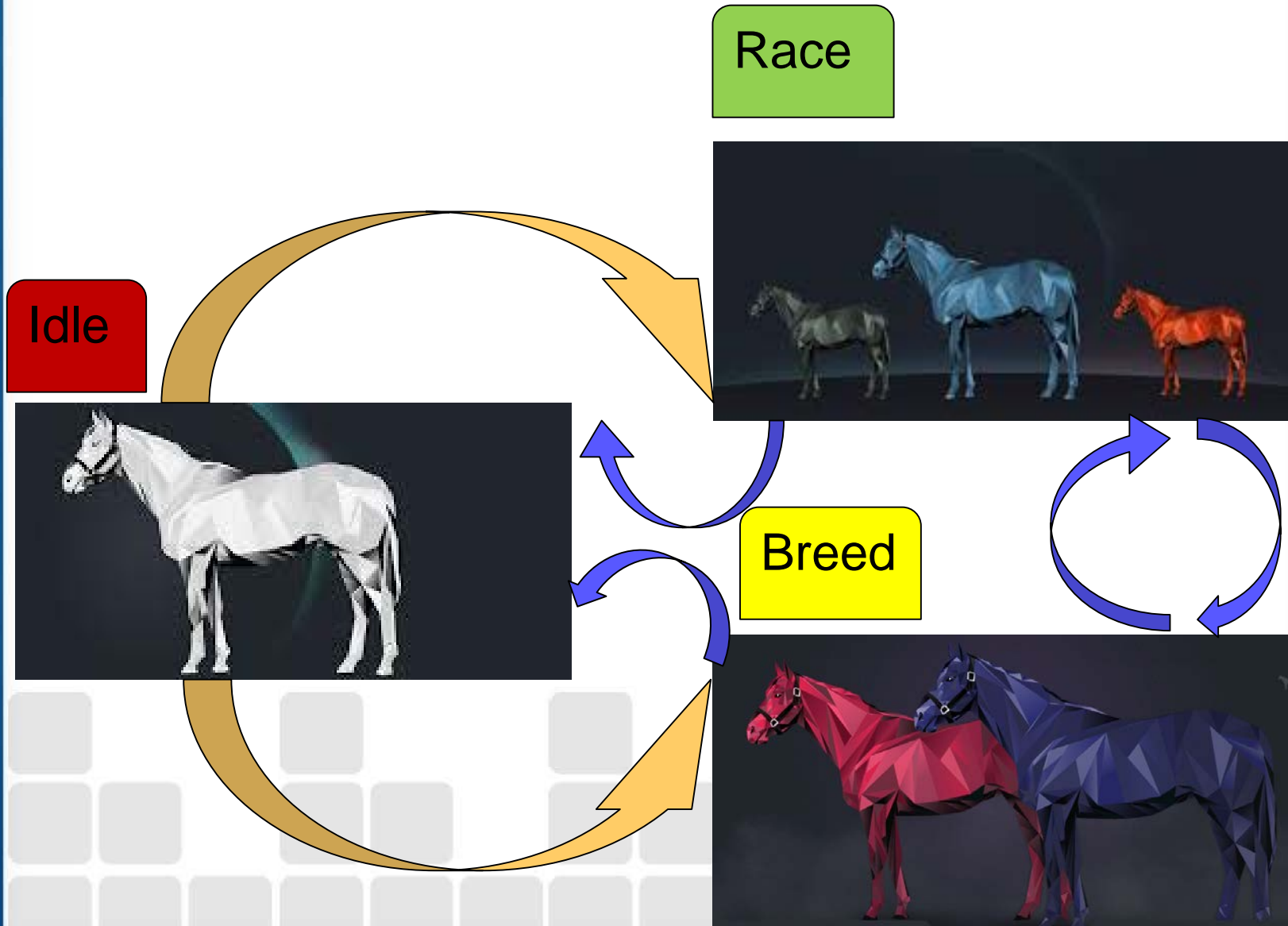
PS1: # horses in future?

- **Similarity: Health-Sick-Dead Model**



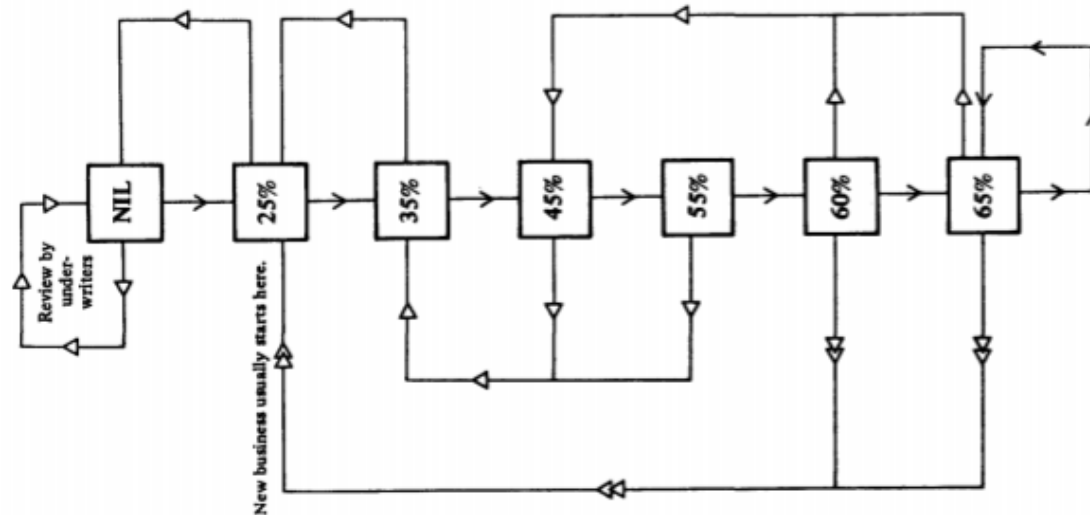
- **Difference: the # horse always increases**

PS1: # horses in future?



PS2: Racing Simulation?

- **Similarity: No Claims Discount**



- **Difference: The distance always increases**

PS2: Racing Simulation?



- Strike a balance between
 - Ensuring “best” wins most of times
 - Ensuring “best” doesn’t win every time
- One-sided random walk with minor element of randomness
- Monte Carlo Simulation
 - Demonstrate best wins most of the times but not always

PS3: Betting engine?

- **Similarity: Pricing Term Insurance**



- **Difference: The bettor *wants* to win!**

PS3: Betting engine?



Key Parameter	Term Model	Betting Engine
Claims Probability	Mortality Table	Betting Odds
Risk Mitigation	Product Design, Exclusions	Bet Types
Capital Requirement	Solvency Calculations	Monte Carlo Simulations



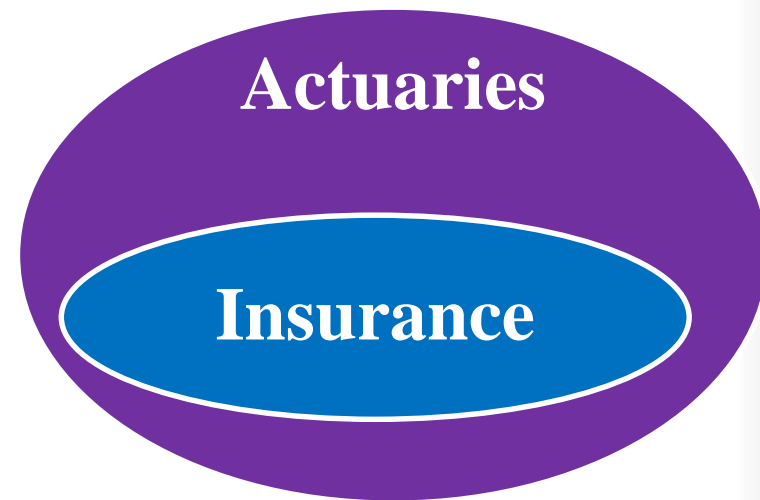
Are you game? Here are
the tips!

TIPS

Tips for Game Changers



- Actuarial Skills
 - Problem Solving Mindset
 - Modeling
 - Statistics
 - Communication
- Willingness to Learn
- Appetite for Risk
- Understanding of Business
- Professionalism & Ethics



Conclusion



Key Takeaways!



- Actuaries are problem solvers who specialize in predicting future & managing risks
- Actuarial skills are also applicable outside insurance in wider areas (including gaming)
- Skill to manage risk needs to be combined with appetite for taking risks
- Communication skills and professionalism are the key differentiator

Questions and not-so-actuarial answers!

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