IAQS | INSTITUTE OF ACTUARIAL & QUANTITATIVE STUDIES

Welcomes you to

ACTUARIAL SCIENCE SUMMER PROGRAM

MAY BATCH, 2025

Let us begin with a QUESTION

🧠 WHAT'S THE RISKIEST THING YOU'VE EVER DONE?

💥 WHAT'S THE SECOND RISKIEST THING?

🎯 AND WHAT ARE THE SMALL, RISKY THINGS YOU DO EVERY SINGLE DAY — WITHOUT EVEN REALIZING IT?

WHO IS AN ACTUARY?

An ACTUARY predicts future...

v/s

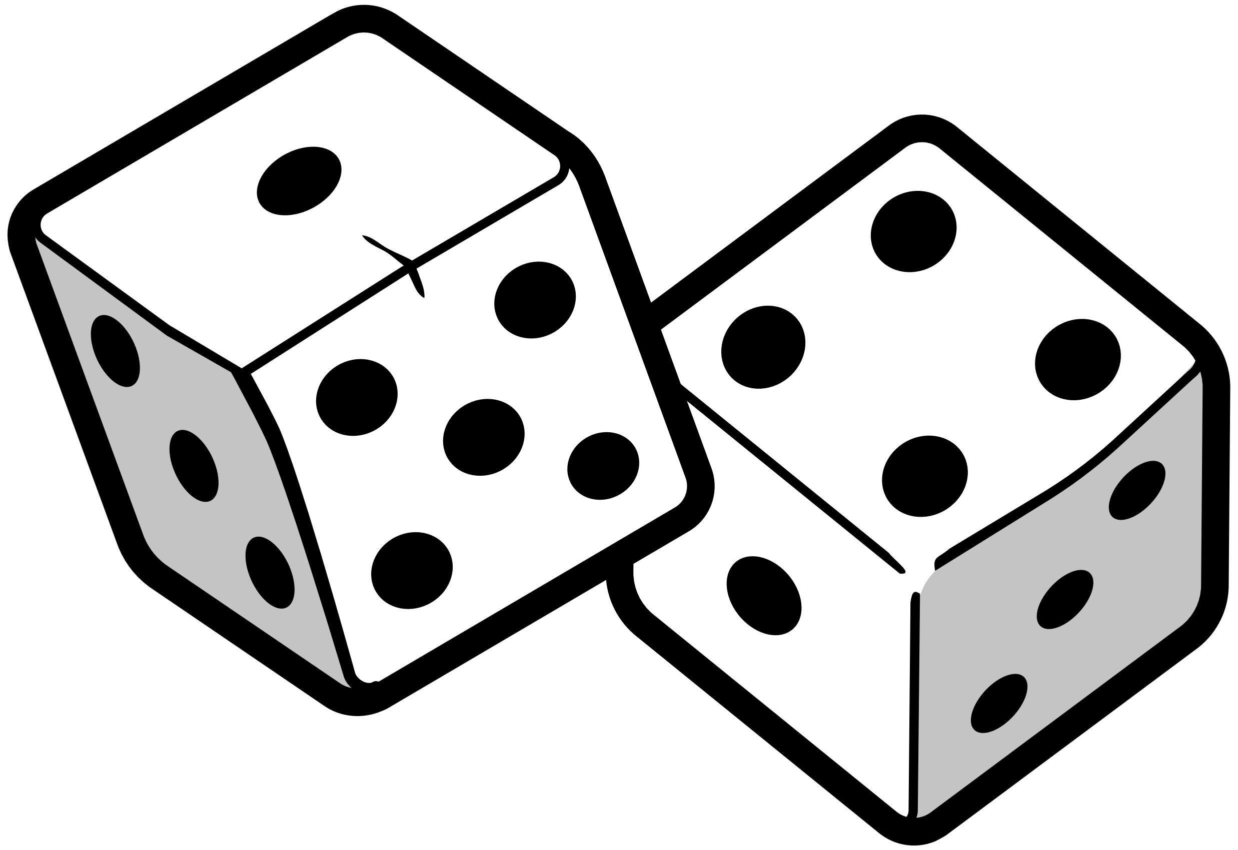
AN ACTUARY PREDICTS FUTURE, IDENTIFIES, CALCULATES AND MANAGES RISKS.

IF WE LOOK AT THE MONEY HEIST IN A POSITIVE LIGHT, THEN FOR ALL INTENTIONS AND PURPOSES, THE PROFESSOR WAS AN ACTUARY.

Lets Play a Game

"ROLL UNTIL YOU DIE"

– LIFE EXPECTANCY SIMULATION



Mean

Mean is a measure of central tendency. Mean is the average of a given set of numbers. It generally gives the expected reward/ profit.

$$\overline{X} = \frac{\sum X}{N}$$

Variance

Variance is a measure of dispersion, meaning it is a measure of how far a set of numbers is spread out from their average value. It is a risk measure. Larger the variance, larger will be the risk.

$$\sigma^2 = \frac{\Sigma(xi - \bar{x})^2}{N}$$

MEAN-VARIANCE ANALYSIS IS THE PROCESS OF WEIGHING RISK AGAINST EXPECTED RETURN.

BUDGET QUESTION

If you lost a large sum of money and are left with very little, would you invest in a chit fund like Raju and his team?

Risk Averse

Risk-averse individuals prefer to avoid risks, opting for safer, more certain choices even if they offer smaller rewards.

Short – term concerns

Fear of failure

Culture of routine and control

Apprehension

Complacent

Risk Seeker

Risk-seeking individuals are more comfortable with uncertainty and are willing to accept potential losses for the chance of greater rewards.

Long – term concerns

Vision of opportunity

Culture of creativity and innovation

Confidence

Seek learning and growth

Pooling Risk

In insurance and risk management, "risk pooling" is all about bringing together risks from various sources to form a larger, more predictable pool. This makes managing risk more efficient and helps keep insurance costs affordable.

REAL LIFE EXAMPLE

- A family with healthy members contributes to an insurance pool, and when someone in that family gets sick, their medical expenses are covered by the premiums paid by all the pool's participants.
- A group of drivers with varying levels of risk (e.g., some may have clean driving records, others may have accidents) contributes to the same insurance pool. Those who don't need to file a claim essentially "help" cover the costs of others who do.

Key Takeaways

- An actuary is a specialist with advanced mathematical expertise who focuses on evaluating and managing risk and uncertainty.
- Mean is the average of a given set of numbers. It gives the expected reward/ profit.
- Variance is a measure of dispersion, meaning it is a measure of how far a set of numbers is spread out from their average value.
- Term insurance is a form of life insurance that offers financial protection for a specific duration. It is the simplest and most cost-effective type of life insurance.
- In statistics, probability quantifies the likelihood of an event occurring, ranging from 0 (impossible) to 1 (certain), & is a fundamental concept used to analyze and interpret data.
- In insurance & risk management, "risk pooling" is all about bringing together risks from various sources to form a larger, more predictable pool. This makes managing risk more efficient & helps keep insurance costs affordable.