Types of regression (See p19-20 for linear and logistic regression)

- Basic regression
  - linear regression: Predicts a continous value using a stright line fit ($y = mx + b$)
  - logistic regression: classification model (not truly regression) - predicts probability of categories (eg 0 / 1)
- Regulized regression (for better generalization)
  - Ridge regression (L2): adds penalty on large weights → keeps all features but shrinks coefficients
  - lasso regression (L1): adds penalty that can push some weights to zero → preforms feature selection (see p.107)
  - Elastic Net: combination of L1/L2 → balance between Ridge and lasso
- Multiple / Multivariate Variants:
  - Multiple linear regretion: Predics one target using multiple features
  - Multivariate linear regretion: Predics multiple target variable simultaneously
- Others:
  - Polynomial regression: adds higer degree terms (x^3, x^2 etc) to model non linear patterns
  - Stepwise regression: Automatically selects important predictors step by step
  - Quantile regression: predicts specific quantiles (like median) instead of mean

AI Agents vs Agentic AI

AI Agents are a general term for any AI system that precives an enviornment makes decisions and acts to achive goals, can be reactive, deliberate or hybird

Examples: Chat Gpt plugins in browsers, Self driving car, vison models, Mixture of experts Large resoning models, HRM, Action models etc

Agentic AI refers to AI systems that exibit atonomy and goal-directed bphaviour, almost like a independent agent, it can plan, make decisions and act over time without constant human instructions, often used in reserch to describe AI that is more proactive or self directed than a simple AI Agent Ex: a manager AI - Goal: plan meeting, reply to emails etc independent AI - goal driven, cross system interaction no human instruction like if gmail has words "x" or "y" then delete 114 email and etc.