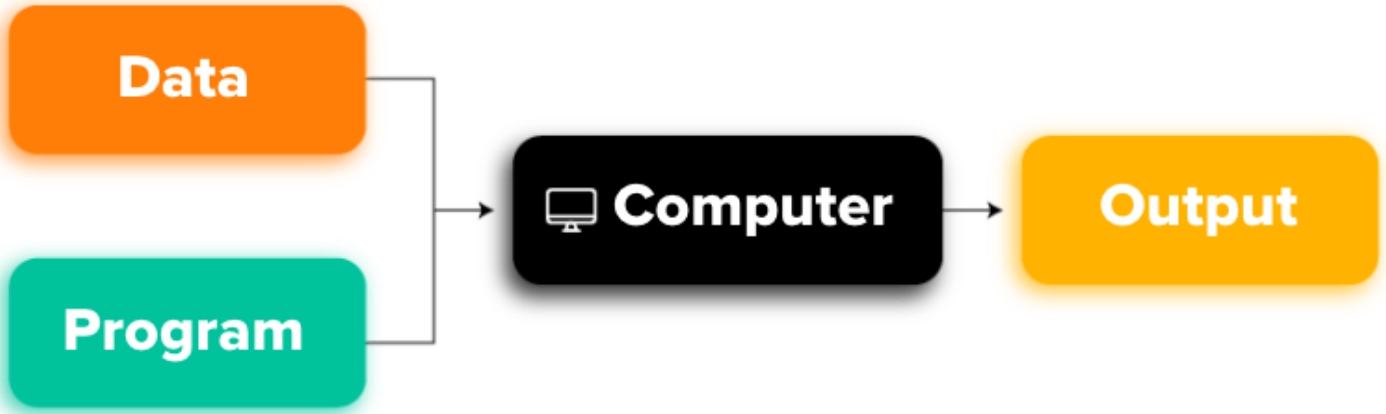
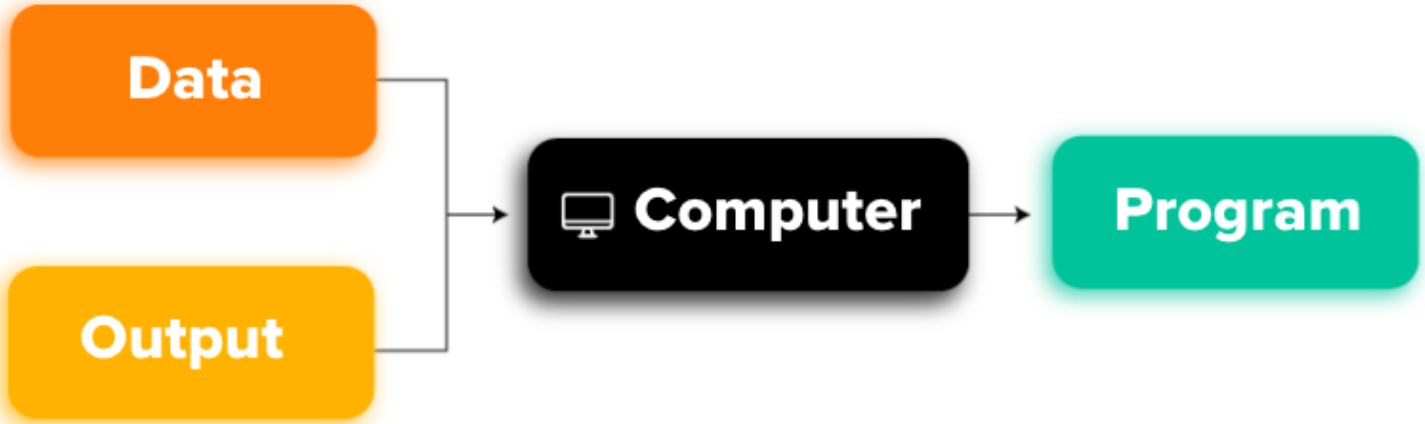
Machine Learning (ML) & Large Language Models (LLMs)

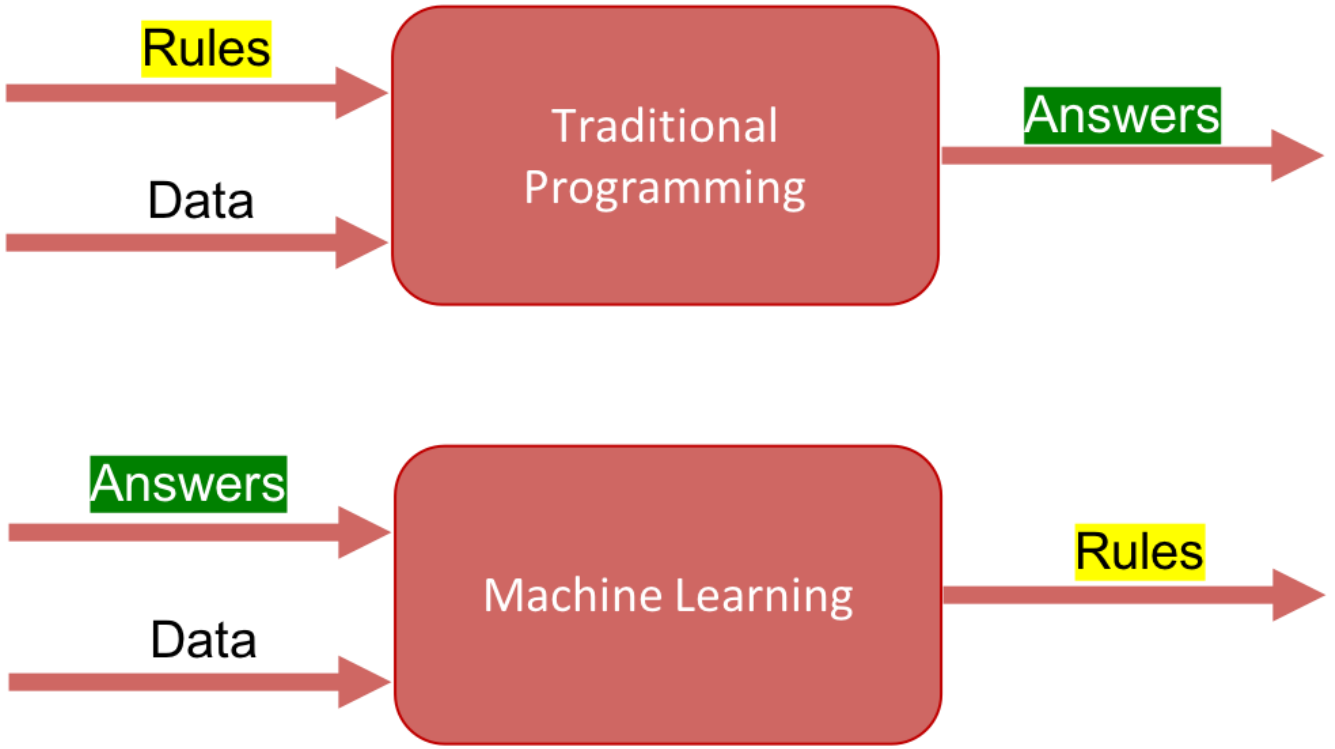
Usman Nazir

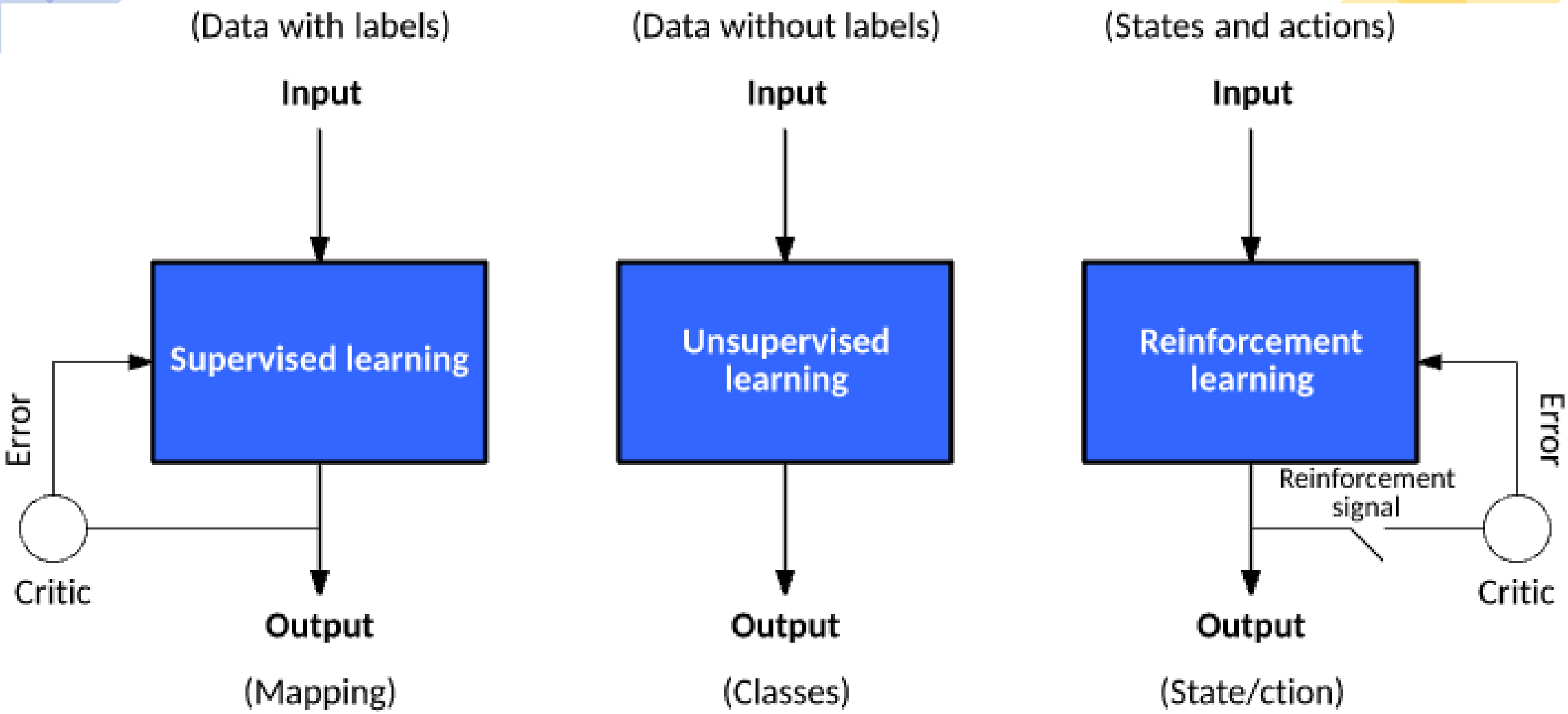
Traditional Programming



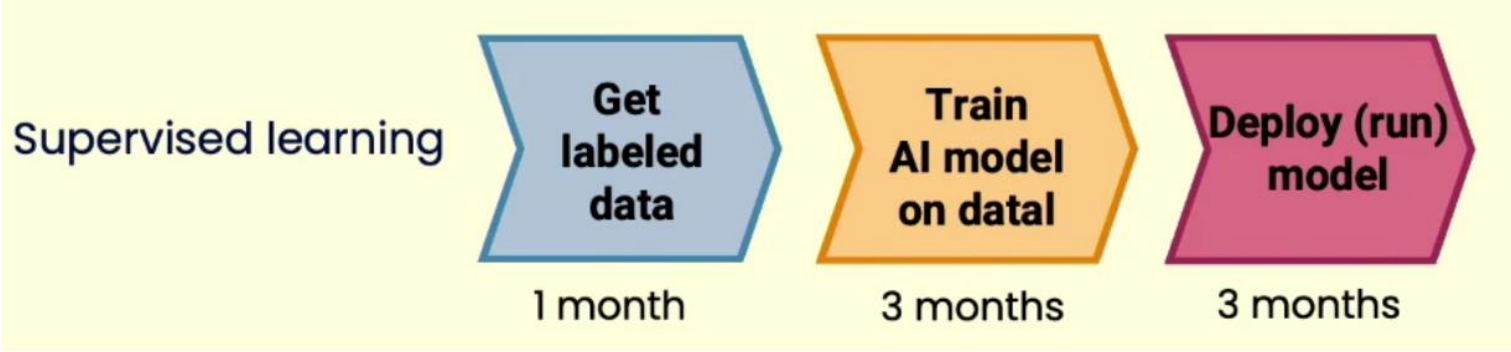
Machine Learning




Rules
Data
Traditional Programming
Answers
Answers
Data
Machine Learning
Rules


(Data with labels)
Input
Supervised learning
Error
Critic
Output
(Mapping)
(Data without labels)
Input
Unsupervised learning
Output
(Classes)
(States and actions)
Input
Reinforcement learning
Error
Reinforcement signal
Critic
Output
(State/ction)

Machine Learning (Supervised Learning)



Large Language Models (LLMs)

Large Language Models

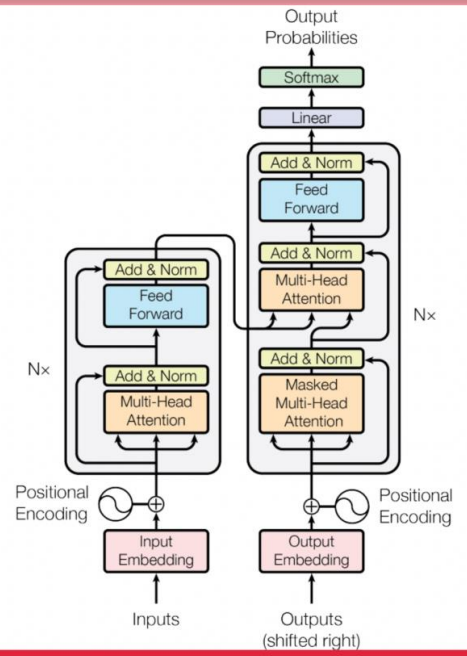
Large language models are deep neural networks that are trained on vast amounts of text data to generate natural language text. They can perform various NLP tasks such as text classification, translation, question answering, and text generation. Examples include GPT-3 by OpenAI, BERT by Google, and RoBERTa by Facebook. These models have hundreds of millions to billions of parameters, making them capable of understanding and generating human-like text.

OpenAI

AI Generative Models; APIs; free and paid AI tools

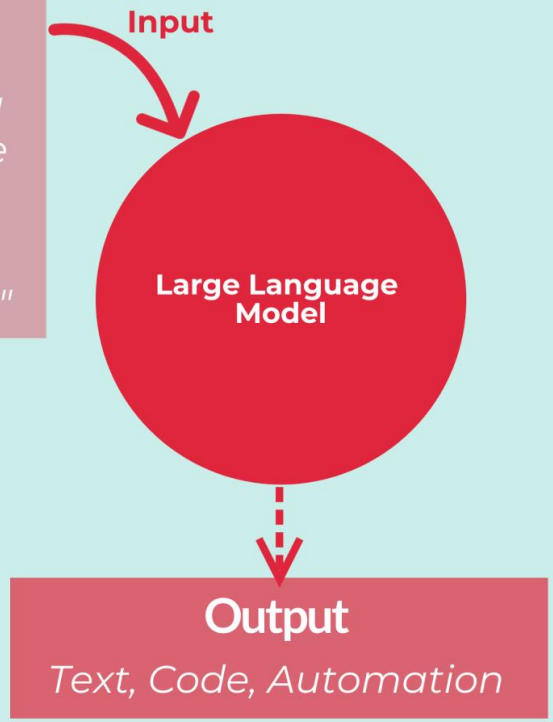
OpenAI LLMs

Generative models like GPT-3 & DALL-E

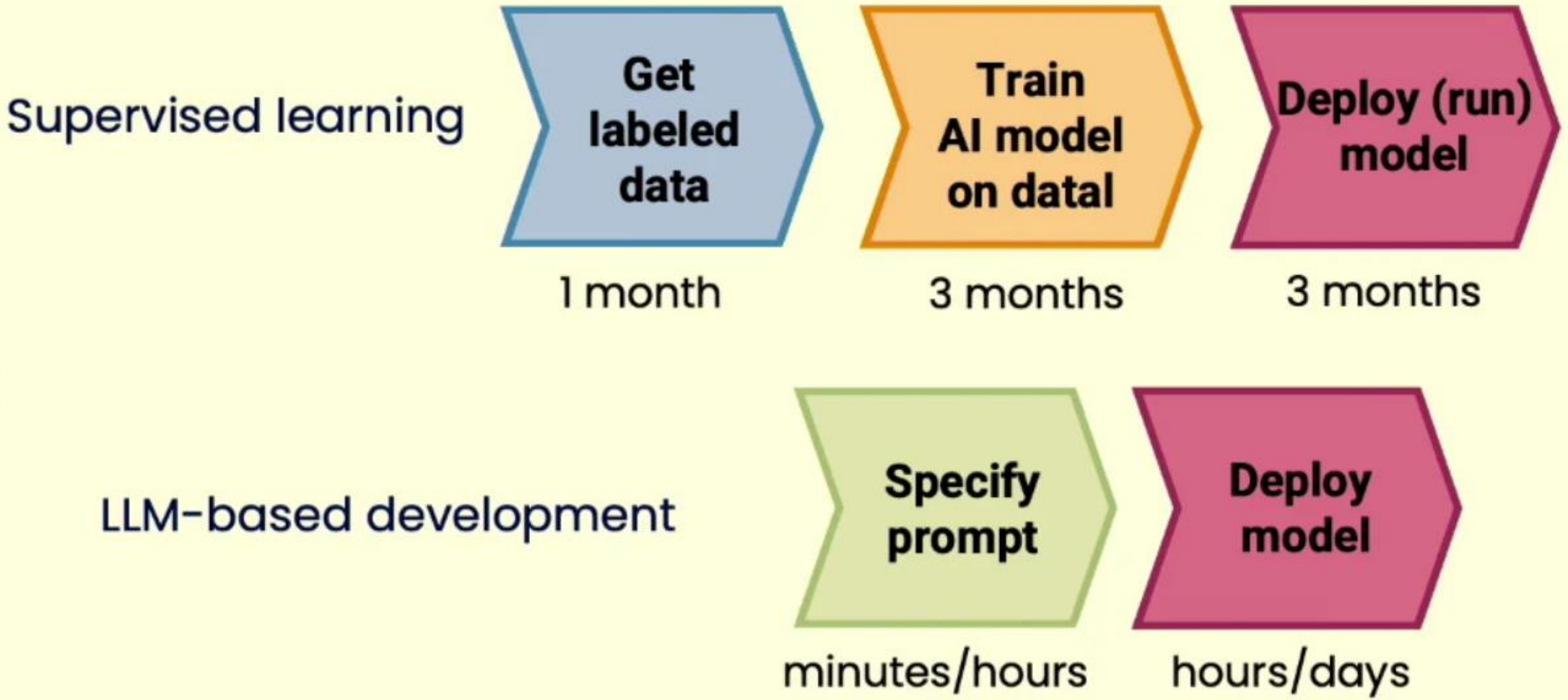


Prompting

e.g.
"summarize a text of X"
"generate a poem in the style of X"
"give me a list of keywords based on semantic similarity for X"



Very fast prototyping



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