

# **SwiftTrade — an AI-based trading platform**

# Motivation

- Build a backtesting platform
  - Something like Python's *Backtesting*
- But in Swift

# Rationale

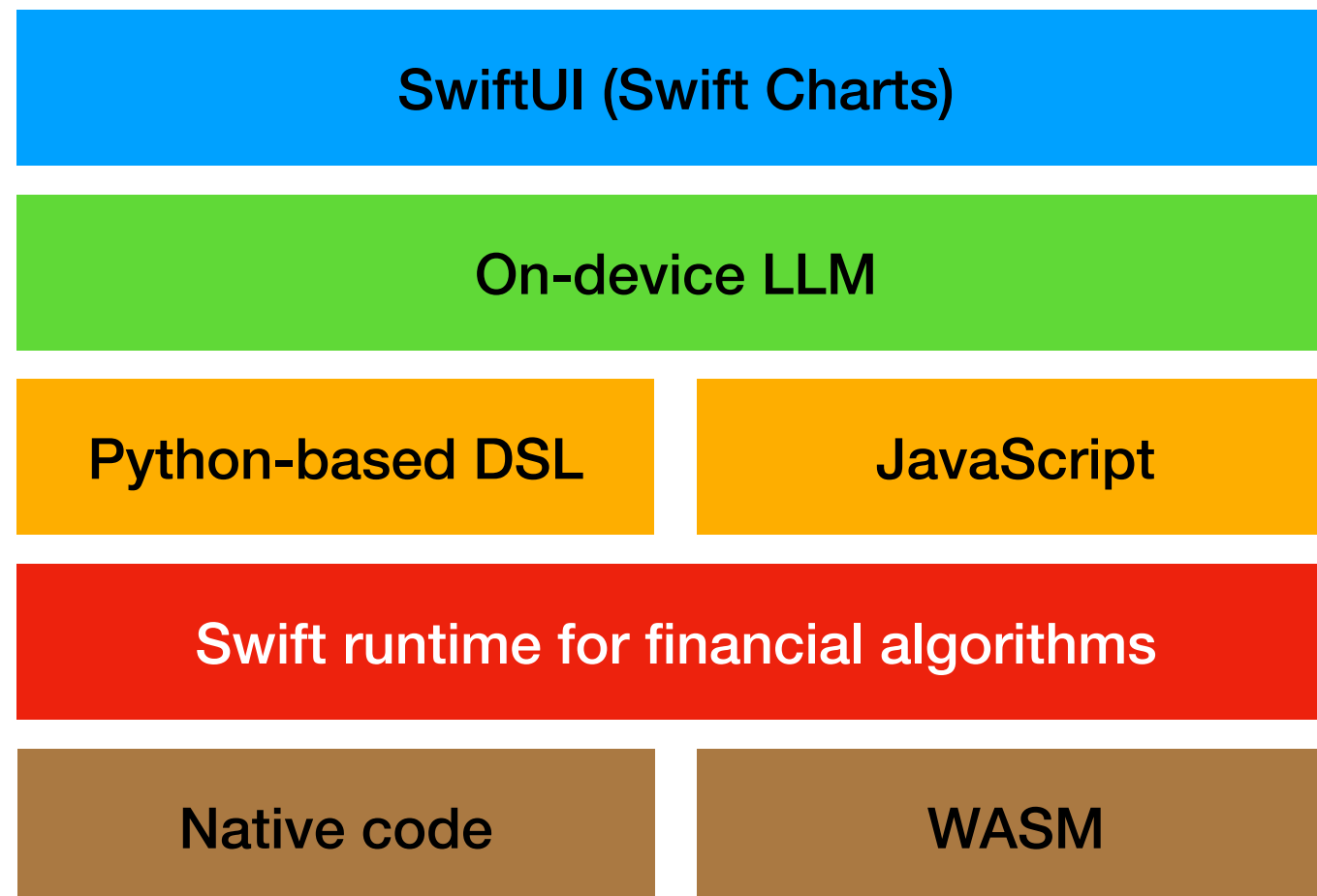
## Why Swift?

- Very fast (comparable to Rust, Mojo)
- Open source
- Runs also on Linux, Windows & Android
- Compilable into fast WASM
- Has built-in fast maths library (SIMD, GPU)
- Has built-in UI framework with (candlestick) charts
- Has built-in actors
- Has built-in support for LLMs & “MCP” tools

# Architecture

- User interface
  - SwiftUI & Swift Charts
- Strategy building
  - On-device LLM
- Financial data, algorithms & indicators via “MCP” tools
- SwiftData for persistent data
- Python-like DSL run via Mojo

# Modules



# Runtime

## For algorithms & indicators

- Two languages
  - Python-like (based on Mojo)
  - JavaScript (via JavaScriptCore)
- Two modes of execution
  - Compiled (into native code)
  - Interpreted

# Technical details

- Swift Concurrency
  - For asynchronous real-time data fetching
- Swift Combine
  - For observability in trading algorithms
- SwiftWasm
  - For running in WASM environments

# Project output

- UI for financial data & algorithms
- “Numpy” & financial library for Swift
- “Numpy” & financial library for Mojo
- Precompiled modules for Linux, Windows & WASM