The Best & Most Complete Dart Course - Visualize, Learn and Practice all Dart Language Concepts! (youtube.com)

Dart picks the dart file located inside the bin folder to run

- To input arguments in command line, must specify the project being run

Debugging

- Can debug in editor (VSCode) or using dart dev tools command in terminal (follow link to advanced dev tools)

Components of a Dart Project

Dark Packages

- Each "dart project" can be thought of as a dart package
- Dart packages are building blocks, packages can depend on another while having others depend on it
- Pub.dev hosts large collection dart packages published by many developers, developers don't have to implement already existing features from scratch
    - Application package: not going to be posted to Pub.dev (can only depend on publicly available packages)
    - Library package: to be posted publicly to Pub.dev (dependence can go both ways)
- Pub command allows for package management
- Pubspec.yaml--> Necessary file for every package, specify name of package, sdk constraints, and dependencies (external packages needing to run)
- Pubspec.lock--> files automatically created when dart creates new package or save pubspec.yaml file (downloads all packages depended upon)

Libraries

- Packages able to contain one or more libraries
- Only part of package that is publicly accessible to everyone

Dart Linting (how static analyzer scans code)

- Static analyzer follows lint rules during static analyzing, process is called linting
- Analysis_options.yaml--> file static analyzer uses to retrieve linting rules
- Can use different packages of lint rules

Dart Tests

- Code written to check that features and implementations work correctly (every feature/implementation should have tests)
- Test command tests all tests

CMD Apps

VSCode Run Configurations

Git Source Control Files

JIT + AOT Compilers

Main phases a package goes through in development

- Development Phase
    - Developer needs fast compilation + recompilation (hot reload), code optimization techniques, intuitive debugging tools…
- Production Phase (deployment)
    - Focus on user experience- fast startup time, reliability, good ui
    - Testing in real world scenario- removing development features, optimization

Dart VM (how Dart runs programs?)

Developer focused components (hot reload, debugging)

- JIT and AOT compilation pipelines
- Virtual machine that provides execution environment to run code
- Code within VM runs within its own isolate, has own memory heap, own thread of control (mutator thread), and helper threads
- Dart VM can execute code from source using JIT/ AOT compilers, or from snapshots
    - Dart source code is translated by CFE dart package