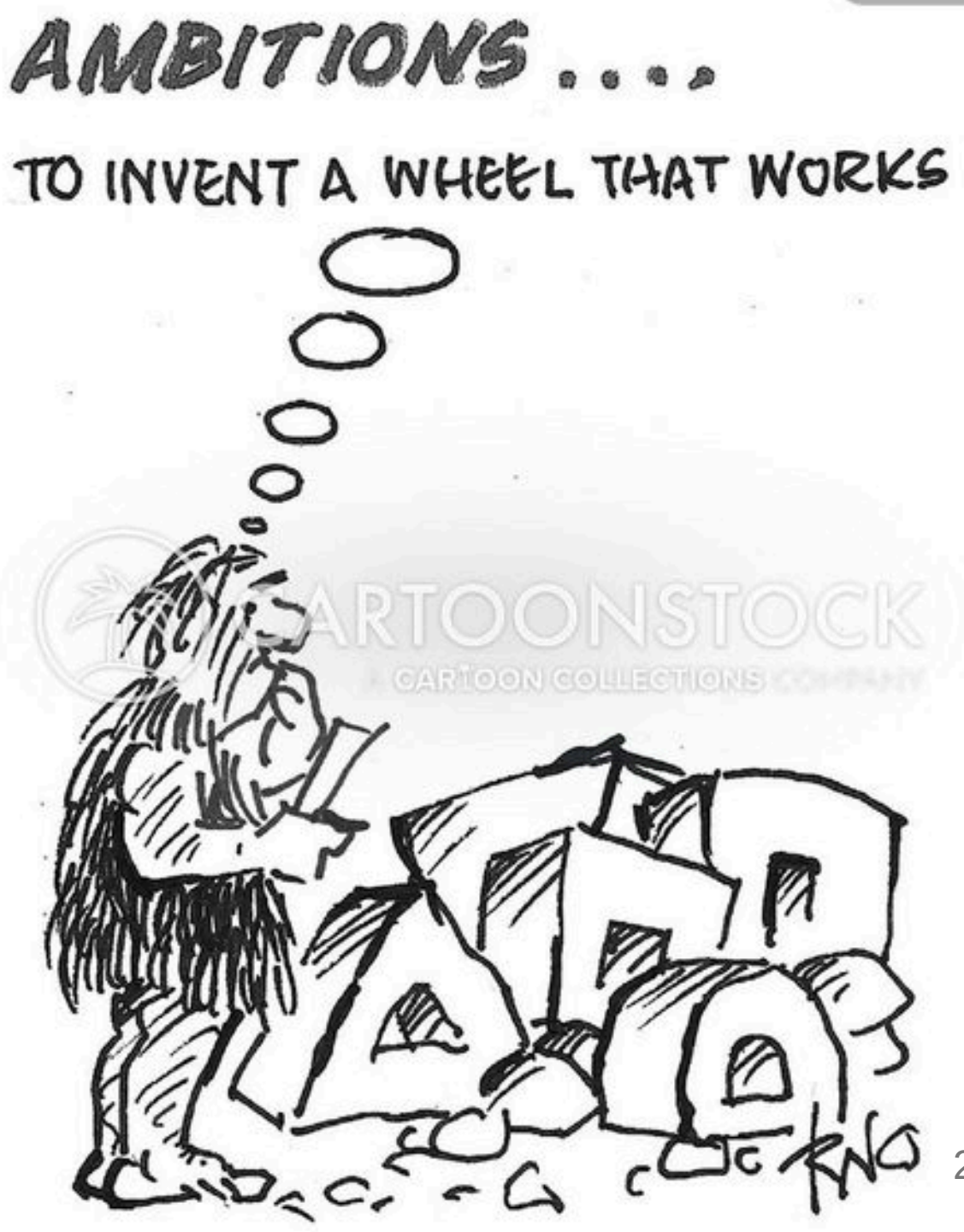
ROS2 from dev to deploy

on nvidia jetson

Agenda

- Dev
- Build and test
- Deploy
- Source control (??)
- Version control



Today

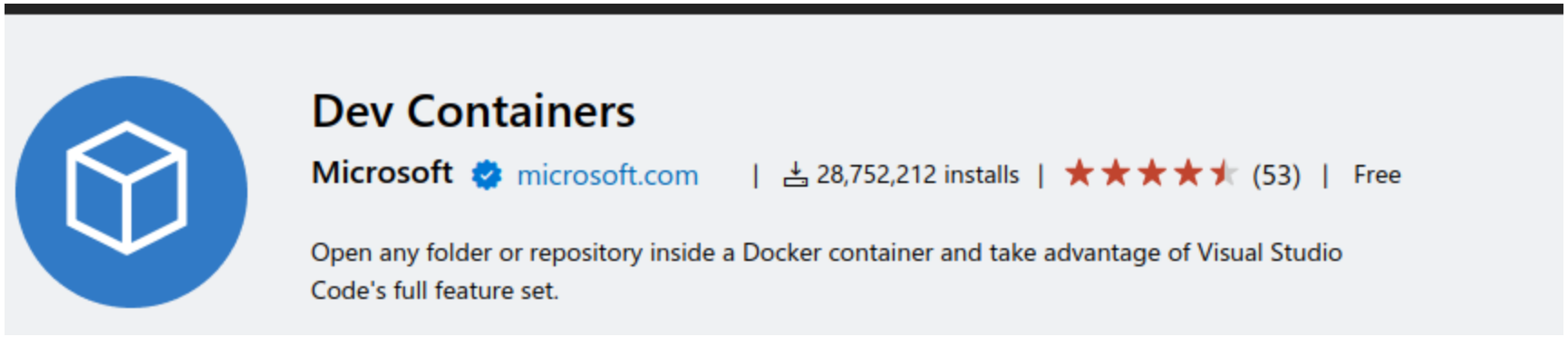
- Dev on linux machine as python project (no ROS)
- Deploy: copy python files to remote system
  - Deploy as ZIP
- Deploy: Burn pre cocked jetson image

Docker as a way of life

- Dev: using vscode devcontainer
- Build: using docker to build for different architecture
- Test: using docker as test environment (allow clean system)
- Deploy: Deploy the application as cocked docker image

Dev

- Using VSCode devcontainer
  - support remote development (run on jetson)
- Docker hierarchy
  - OS with Chosen ROS version + simulator + common dev tools
  - Project runtime dependencies (runtime/test)
  - Project dev dependencies (dev)
  - Project cycle (forget package and python pip)



Build

- Cross Compiler
- Using docker as cross compiler environment
  - using **dev** docker that build for the jetson arm architecture

Test

- Using docker as consistent and repetitive environment for testing
  - Use it to test package install tests

Deploy - Find your way

- deb packages
- docker image
- jetson image

Deploy - debian package

- Standard
- The linux/debian way
- every package are installable has version and metadata
- easy to deploy from remote

Deploy - jetson image

- pre install jetson image with all project dependencies and code
- Code install as debian package
- easy to copy
-

Deploy - with docker

- Build application docker with all dependencies
- Easy deploy

Deploy - with docker - when

- legacy
- test's
- mixing system
- when is no other way

Deploy - with docker - why not

- Hardware issue
- Hard to deploy from remote

Version

- Every thing has a version
  - package
  - OS image
  - docker image
- Every project / application has version page

Control after release

- Dev days: yes, we know ourself
- From release and on:
  - Source control
  - Ticket and issue
  - Code review and test

All fit together

- Build Debian packages
- Install Packages on the docker image
- Backup jetson image with docker include

Final thought

- ✅ Docker for dev using devcontainer
- ✅ Docker for build
- ✅ Docker for test
- ✅ Docker for production