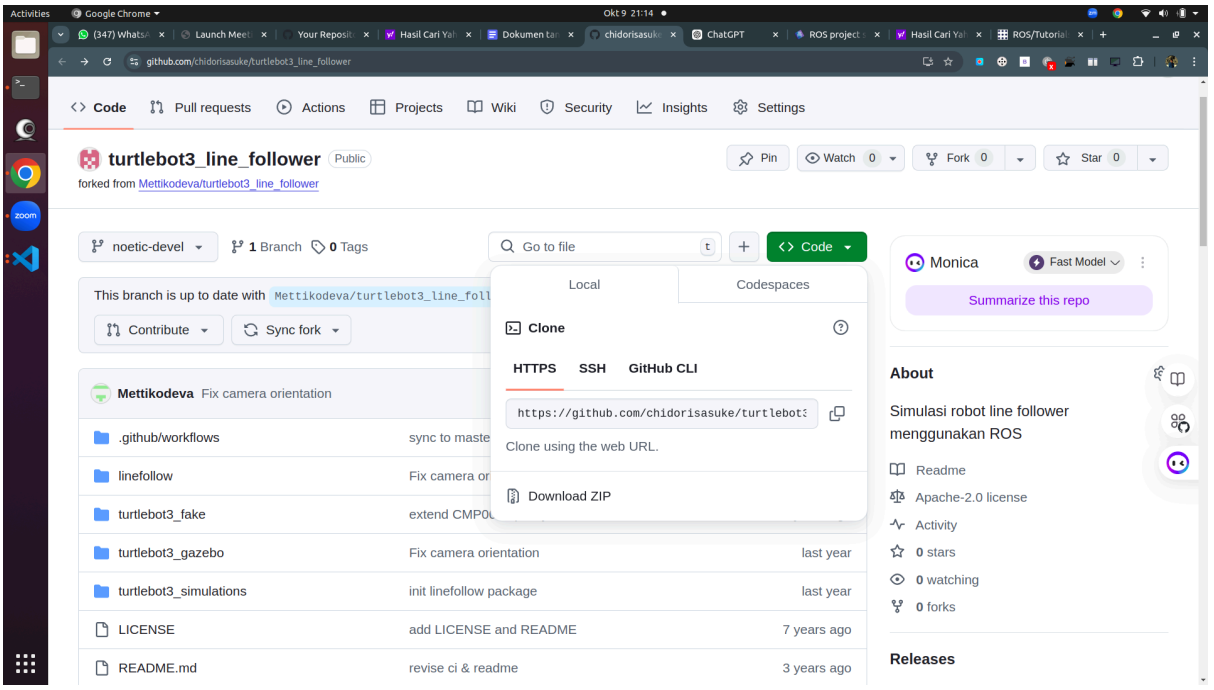
TUTORIAL SIMULASI LINE FOLLOWER PAKAI ROS

Note:

- # adalah comment

1. Kalian buka rosject masing-masing di akun theconstruct
2. Buka terminal yang ada di rosject
3. Kalian bisa pakai workspace yang uda dibikin atau bikin workspace baru
   - **mkdir -p namaworkspace/src**
   - **cd namaworkspace**
   - **catkin_make** #berada di dalam folder namaworkspace/ dan di luar folder src/
   - **source devel/setup.bash** #berada di dalam folder namaworkspace/ dan di luar folder src/
   - **cd src/**
4. Pastikan kalian juga memiliki akun github
5. Lakukan git clone pada repository



6. copas https://…….
   - **git clone https://github.com/chidorisasuke/turtlebot3_line_follower.git**
   - **cd ..**
   - **catkin_make**
7. Jika error

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   CMake Error at /opt/ros/noetic/share/catkin/cmake/catkinConfig.cmake:83 (find_package): Could not find a package configuration file provided by "turtlebot3_msgs" with any of the following names: turtlebot3_msgsConfig.cmake turtlebot3_msgs-config.cmake Add the installation prefix of "turtlebot3_msgs" to CMAKE_PREFIX_PATH or set "turtlebot3_msgs_DIR" to a directory containing one of the above files. If "turtlebot3_msgs" provides a separate development package or

*SDK, be sure it has been installed. Call Stack (most recent call first): line_follower/src/turtlebot3_line_follower/turtlebot3_fake/CMakeLists.txt:11 (find_package) -- Configuring incomplete, errors occurred! See also "/home/user/simulation_ws/build/CMakeFiles/CMakeOutput.log". See also "/home/user/simulation_ws/build/CMakeFiles/CMakeError.log". make: *** [Makefile:320: cmake_check_build_system] Error 1 Invoking "make cmake_check_build_system" failed*

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lakukan ini di direktori yang sama tidaklah masalah

a. **sudo apt-get install ros-noetic-turtlebot3-msgs**
b. **source /opt/ros/noetic/setup.bash**
c. **devel setup/setup.bash**
d. **catkin_make**

8. Jika error

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RLException: Invalid <arg> tag: environment variable 'TURTLEBOT3_MODEL' is not set. Arg xml is <arg name="model" default="$(env TURTLEBOT3_MODEL)" doc="model type [burger, waffle, waffle_pi]"/> The traceback for the exception was written to the log file

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lakukan ini di direktori yang sama tidaklah masalah

a. **gedit ~/.bashrc**
   # Tambahkan kode di bawah ini di sembarang baris dalam file .bashrc
b. **export TURTLEBOT3_MODEL=burger**
   # Jika tidak bisa membuka bashrc berarti memang terkendala di GUI sistem
   # Coba cara ini untuk bisa menambahkan ke dalam bashrc secara langsung
c. **echo "export TURTLEBOT3_MODEL=burger" >> ~/.bashrc**
d. **source ~/.bashrc**

9. Coba catkin_make dan source devel/setup.bash
10. Berhasil?
11. Coba **roslaunch linefollow turtlebot3_API.launch**
12. Error?

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Resource not found: The following package was not found in <arg name="map_file" default="$(find turtlebot3_navigation)/maps/map.yaml"/>: turtlebot3_navigation ROS path [0]=/opt/ros/noetic/share/ros ROS path [1]=/home/user/catkin_ws/src ROS path [2]=/home/user/simulation_ws/src ROS path [3]=/home/simulations/public_sim_ws/src ROS path [4]=/opt/ros/noetic/share
The traceback for the exception was written to the log file

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a. **sudo apt-get install ros-noetic-turtlebot3-navigation**
b. **source /opt/ros/noetic/setup.bash**

    c. **source ~/simulation_ws/devel/setup.bash**
    d. **catkin_make**
    e. **source devel/setup.bash**
13. Coba **roslaunch linefollow turtlebot3_API.launch**
14. Buka terminal baru
15. **cd namaworkspace/**
16. **source devel/setup.bash**
17. **rosrun linefollow contohAPI.py**
18. Robot jalan mengikuti garis lurus dan berhasil menampilkan simulasi

TASK FOR PRACTICE:

1. Based on step (14), Kenapa harus source devel/setup.bash di terminal baru? Apakah setiap terminal baru harus di source dulu? Apakah ada cara praktis agar tidak selalu source setiap membuka terminal baru? Bagaimana caranya?
2. Mengapa robotnya hanya berjalan lurus?
3. Turtlebot3 punya versi simulasi lain selain line follower, silahkan bisa dicari tau untuk membuat familiar dengan environment ROS dan GAZEBO