

20_17일차_진행사항_SEED_김윤호_오전 : 네이버 카페

웹 클립

웹 접근성이 좋은 모바일 웹에서 사용하겠습니까?

NAVER

카페홈 이웃 가입카페 ▾ 새글 내소식 채팅 Zero ▾

연희직업전문학교_robotics

https://cafe.naver.com/yhrobotics

카페정보 나의활동

수정 삭제

다음글 목록



메니저 **배진호**
since 2021.07.12.
카페소개

앞새1단계

6주 뒤 **카페등급**이 한단계
내려갈 수 있어요. 더 자주 만나요!

자세히 보기

우리카페맵 주 0회

주제 컴퓨터/통신 > 소프트웨어

카페 글쓰기

카페 채팅

즐거찾는 게시판

전체글보기 4,902

수료생_커뮤니티

라이다3기

라이다4기 N

자유게시판

최근 댓글 · 답글

- 20_17일차_진행사항_mee...
- 20_17일차_진행사항_SEE...
- 20_17일차_진행사항_SEE...
- 20_17일차_진행사항_SEE...
- 20_17일차_진행사항_해보...

이전 | 다음

카페탈퇴하기



궁금한게 있을 땐
카페 스마트봇

라이다4기

20_17일차_진행사항_SEED_김윤호_오전



일반멤버

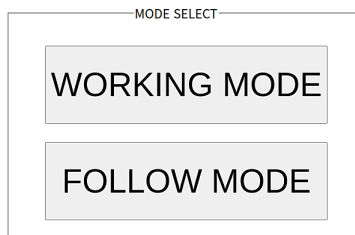
2022.08.17. 11:30 조회 4

댓글 0 URL 복사

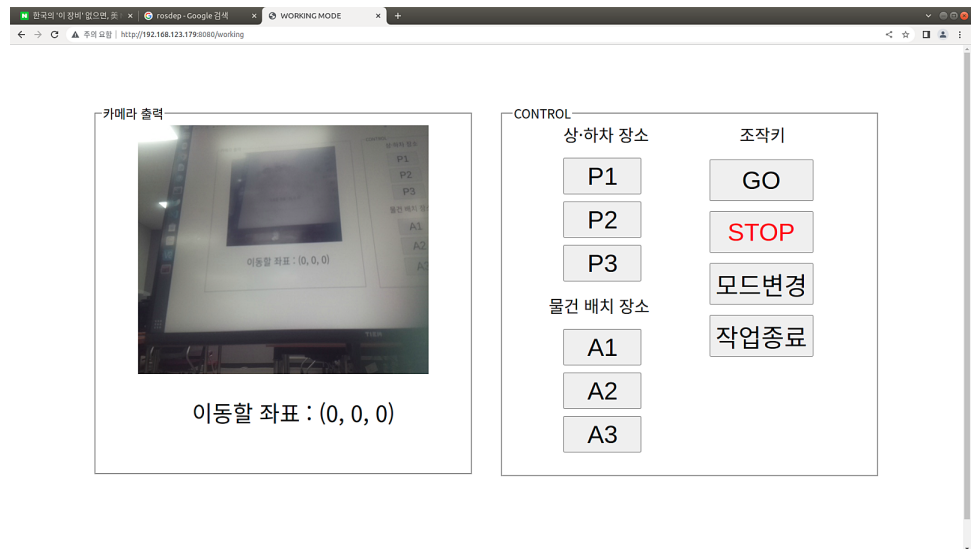
1. 라즈베리파이에서 move_base_msgs 패키지 설치 후 서버 실행



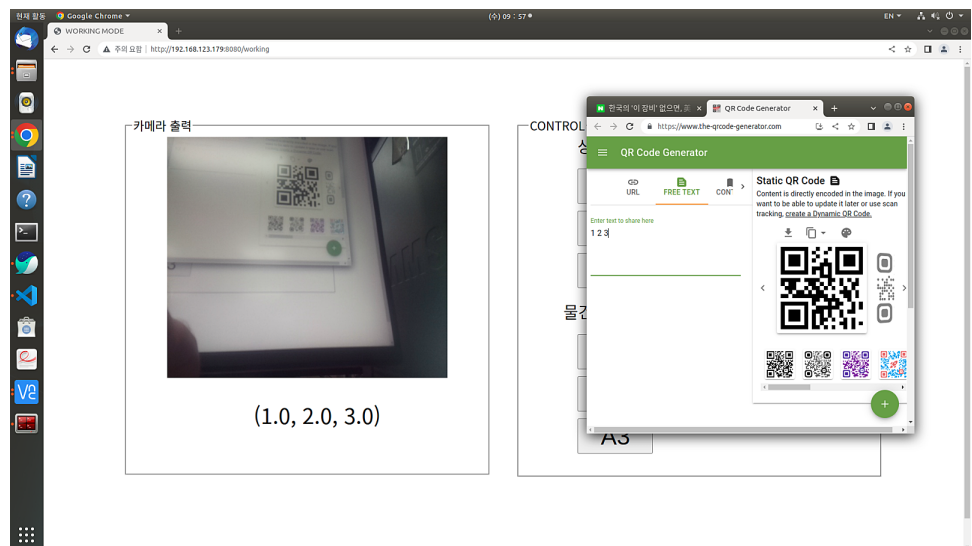
- 조작을 위한 페이지 화면



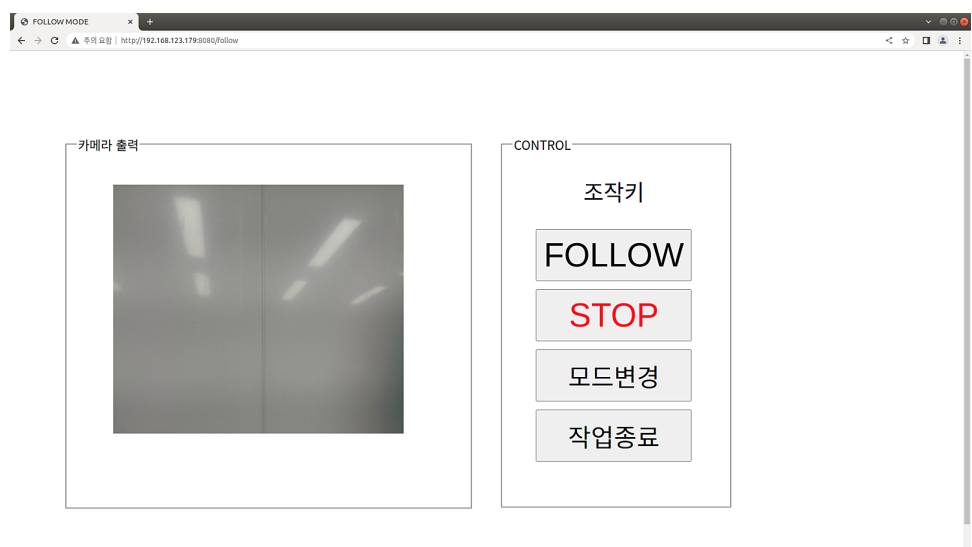
- 모드 선택 화면



- WORKING MODE 화면



- QR 코드 인식(라즈베리파이 전용 카메라 = 파이카메라 사용)



FOLLOW MODE 화면

2. 라즈베리파이에 turtlebot3 및 필요한 패키지 설치

```
pi@raspberrypi:~/ros_catkin_ws $ rosinstall_generator roserial-python hls-lfcd-lds-driver turtlebot3-msgs dynamixel-sdk turtlebot3 --deps --exclude RPP
Using ROS_DISTRO: melodic
The following unreleased packages/stacks will be ignored: dynamixel-sdk, hls-lfcd-lds-driver, roserial-python, turtlebot3-msgs
- git:
  local-name: geometry2/tf2_sensor_msgs
  uri: https://github.com/ros-gbp/geometry2-release.git
  version: release/melodic/tf2_sensor_msgs/0.6.5-0
- git:
  local-name: hls_lfcd_lds_driver
  uri: https://github.com/ROBOTIS-GIT-release/hls-lfcd-lds-driver-release.git
  version: release/melodic/hls_lfcd_lds_driver/1.1.2-1
- git:
  local-name: navigation/amcl
  uri: https://github.com/ros-gbp/navigation-release.git
  version: release/melodic/amcl/1.16.7-1
- git:
  local-name: navigation/base_local_planner
  uri: https://github.com/ros-gbp/navigation-release.git
  version: release/melodic/base_local_planner/1.16.7-1
- git:
  local-name: navigation/clear_costmap_recovery
  uri: https://github.com/ros-gbp/navigation-release.git
  version: release/melodic/clear_costmap_recovery/1.16.7-1
- git:
  local-name: navigation/costmap_2d
  uri: https://github.com/ros-gbp/navigation-release.git
  version: release/melodic/costmap_2d/1.16.7-1
- git:
  local-name: navigation/map_server
  uri: https://github.com/ros-gbp/navigation-release.git
  version: release/melodic/map_server/1.16.7-1
- git:
  local-name: navigation/move_base
  uri: https://github.com/ros-gbp/navigation-release.git
  version: release/melodic/move_base/1.16.7-1
- git:
  local-name: navigation/nav_core
  uri: https://github.com/ros-gbp/navigation-release.git
  version: release/melodic/nav_core/1.16.7-1
- git:
  local-name: navigation/navfn
  uri: https://github.com/ros-gbp/navigation-release.git
  version: release/melodic/navfn/1.16.7-1
- git:
  local-name: navigation/rotate_recovery
  uri: https://github.com/ros-gbp/navigation-release.git
  version: release/melodic/rotate_recovery/1.16.7-1
- git:
  local-name: navigation/voxel_grid
  uri: https://github.com/ros-gbp/navigation-release.git
  version: release/melodic/voxel_grid/1.16.7-1
- git:
  local-name: roserial/roserial_msgs
  uri: https://github.com/ros-gbp/roserial-release.git
  version: release/melodic/roserial_msgs/0.8.0-0
- git:
  local-name: roserial/roserial_python
  uri: https://github.com/ros-gbp/roserial-release.git
  version: release/melodic/roserial_python/0.8.0-0
```

```
- git:
  local-name: turtlebot3/turtlebot3
  uri: https://github.com/ROBOTIS-GIT-release/turtlebot3-release.git
  version: release/melodic/turtlebot3/1.2.5-1
- git:
  local-name: turtlebot3/turtlebot3_bringup
  uri: https://github.com/ROBOTIS-GIT-release/turtlebot3-release.git
  version: release/melodic/turtlebot3_bringup/1.2.5-1
- git:
  local-name: turtlebot3/turtlebot3_description
  uri: https://github.com/ROBOTIS-GIT-release/turtlebot3-release.git
  version: release/melodic/turtlebot3_description/1.2.5-1
- git:
  local-name: turtlebot3/turtlebot3_example
  uri: https://github.com/ROBOTIS-GIT-release/turtlebot3-release.git
  version: release/melodic/turtlebot3_example/1.2.5-1
- git:
  local-name: turtlebot3/turtlebot3_navigation
  uri: https://github.com/ROBOTIS-GIT-release/turtlebot3-release.git
  version: release/melodic/turtlebot3_navigation/1.2.5-1
- git:
  local-name: turtlebot3/turtlebot3_slam
  uri: https://github.com/ROBOTIS-GIT-release/turtlebot3-release.git
  version: release/melodic/turtlebot3_slam/1.2.5-1
- git:
  local-name: turtlebot3/turtlebot3_teleop
  uri: https://github.com/ROBOTIS-GIT-release/turtlebot3-release.git
  version: release/melodic/turtlebot3_teleop/1.2.5-1
- git:
  local-name: turtlebot3_msgs
  uri: https://github.com/ROBOTIS-GIT-release/turtlebot3_msgs-release.git
  version: release/melodic/turtlebot3_msgs/1.0.1-1
```

- 정상적으로 나온 메시지가 아니라 git 주소를 알려주는 걸로 보아 저 주소에서 다운로드 받고 다시 진행하라는 것 같아서
필요한 패키지들만 선별해서 설치

```
pi@raspberrypi:~/ros_catkin_ws/src $ git clone https://github.com/ros-planning/navigation.git
'navigation'에 복제합니다...
```

```

remote: Enumerating objects: 18703, done.
remote: Counting objects: 100% (169/169), done.
remote: Compressing objects: 100% (100/100), done.
remote: Total 18703 (delta 93), reused 117 (delta 67), pack-reused 18534
오브젝트를 받는 중: 100% (18703/18703), 5.97 MiB | 5.25 MiB/s, 완료.
필타를 알아내는 중: 100% (13038/13038), 완료.
pi@raspberrypi:~/ros_catkin_ws/src $ git clone https://github.com/ROBOTIS-GIT/DynamixelSDK.git
'DynamixelSDK'에 복제합니다...
remote: Enumerating objects: 13727, done.
remote: Counting objects: 100% (1101/1101), done.
remote: Compressing objects: 100% (485/485), done.
remote: Total 13727 (delta 541), reused 1047 (delta 525), pack-reused 12626
오브젝트를 받는 중: 100% (13727/13727), 28.50 MiB | 8.19 MiB/s, 완료.
필타를 알아내는 중: 100% (7789/7789), 완료.
pi@raspberrypi:~/ros_catkin_ws/src $ git clone https://github.com/ROBOTIS-GIT/turtlebot3_msgs.git
'turtlebot3_msgs'에 복제합니다...
remote: Enumerating objects: 409, done.
remote: Counting objects: 100% (167/167), done.
remote: Compressing objects: 100% (54/54), done.
remote: Total 409 (delta 69), reused 151 (delta 59), pack-reused 242
오브젝트를 받는 중: 100% (409/409), 90.31 KiB | 1.70 MiB/s, 완료.
필타를 알아내는 중: 100% (170/170), 완료.
pi@raspberrypi:~/ros_catkin_ws/src $ git clone https://github.com/ROBOTIS-GIT/turtlebot3.git
'turtlebot3'에 복제합니다...
remote: Enumerating objects: 6344, done.
remote: Counting objects: 100% (184/184), done.
remote: Compressing objects: 100% (72/72), done.
remote: Total 6344 (delta 94), reused 177 (delta 93), pack-reused 6160
오브젝트를 받는 중: 100% (6344/6344), 119.92 MiB | 5.35 MiB/s, 완료.
필타를 알아내는 중: 100% (3936/3936), 완료.
파일을 가져옵니다: 100% (127/127), 완료.

```

- git으로 패키지 다운로드

```

pi@raspberrypi:~/ros_catkin_ws $ roscatkin_generator navigation DynamixelSDK turtlebot3_msgs turtlebot3 --roscatkin_ws melodic
c --deps --wet-only --tar > melodic-navigation_turtlebot3_DynamixelSDK.rosinstall
The following unreleased packages/stacks will be ignored: DynamixelSDK
pi@raspberrypi:~/ros_catkin_ws $ ls
build          devel          melodic-move_base_msgs.rosinstall          melodic-turtlesim.rosinstall
build_isolated devel_isolated melodic-navigation_turtlebot3_DynamixelSDK.rosinstall src
pi@raspberrypi:~/ros_catkin_ws $ wstool merge -t src melodic-navigation_turtlebot3_DynamixelSDK.rosinstall
Performing actions:
  Add new elements:
    geometry2/tf2_sensor_msgs, hls_lfcd_lds_driver, navigation/amcl, navigation/base_local_planner, navigation/carrot_planner,
navigation/clear_costmap_recovery, navigation/costmap_2d, navigation/dwa_local_planner, navigation/fake_localization,
navigation/global_planner, navigation/map_server, navigation/move_base, navigation/move_slow_and_clear, navigation/nav_core,
navigation/navfn, navigation/navigation, navigation/rotate_recovery, navigation/voxel_grid, roscatkin/roscatkin_python,
turtlebot3/turtlebot3, turtlebot3/turtlebot3_bringup, turtlebot3/turtlebot3_description, turtlebot3/turtlebot3_slam, turtlebot3/turtlebot3_teleop,
turtlebot3_msgs
Config changed, maybe you need run wstool update to update SCM entries.
Overwriting /home/pi/ros_catkin_ws/src/.rosinstall
Update complete.

```

```

pi@raspberrypi:~/ros_catkin_ws $ wstool update -t src

```

```

[actionlib] Updating /home/pi/ros_catkin_ws/src/actionlib
[actionlib] Done.
[angles] Updating /home/pi/ros_catkin_ws/src/angles
[angles] Done.
[bond_core/bond] Updating /home/pi/ros_catkin_ws/src/bond_core/bond
[bond_core/bond] Done.
[bond_core/bond_core] Updating /home/pi/ros_catkin_ws/src/bond_core/bond_core
[bond_core/bond_core] Done.
[bond_core/bondcpp] Updating /home/pi/ros_catkin_ws/src/bond_core/bondcpp
[bond_core/bondcpp] Done.
[bond_core/bondpy] Updating /home/pi/ros_catkin_ws/src/bond_core/bondpy
[bond_core/bondpy] Done.
[bond_core/smclib] Updating /home/pi/ros_catkin_ws/src/bond_core/smclib
[bond_core/smclib] Done.
[catkin] Updating /home/pi/ros_catkin_ws/src/catkin
[catkin] Done.

```

- 설치할 패키지 사전 준비 작업

```

pi@raspberrypi:~/ros_catkin_ws $ rosdep install --from-paths src --ignore-src --roscatkin_ws melodic -y -r --os=debian:buster
executing command [sudo -H apt-get install -y libstdc++12-dev]
패키지 목록을 읽는 중입니다... 완료
의존성 트리를 만드는 중입니다
상태 정보를 읽는 중입니다... 완료
The following additional packages will be installed:
  libcaca-dev libstdc++12-dev libslang2-dev libwebp-dev
다음 새 패키지를 설치할 것입니다:
  libcaca-dev libstdc++12-dev libslang2-dev libwebp-dev
6개 업그레이드, 5개 새로 설치, 0개 제거 및 7개 업그레이드 안 함.
2,352 바이트 아카이브를 받아야 합니다.
이 작업 후 8,148 바이트의 디스크 공간을 더 사용하게 됩니다.
방기:1 http://ftp.kaist.ac.kr/raspbian/raspbian buster/main armhf libslang2-dev armhf 2.3.2-2 [437 kB]
방기:2 http://ftp.kaist.ac.kr/raspbian/raspbian buster/main armhf libcaca-dev armhf 0.99.beta19-2.1 [885 kB]
방기:3 http://ftp.kaist.ac.kr/raspbian/raspbian buster/main armhf libstdc++12-dev armhf 1.2.15-4dfsg2-6-deb10u1 [692 kB]
방기:4 http://ftp.kaist.ac.kr/raspbian/raspbian buster/main armhf libwebp-dev armhf 0.6.1-2+deb10u1 [304 kB]
방기:5 http://ftp.kaist.ac.kr/raspbian/raspbian buster/main armhf libstdc++12-dev armhf 1.2.12-10+deb10u1 [35.5 kB]
내려받기 2,352 바이트, 소요시간 3초 (783 바이트/초)
Selecting previously unselected package libslang2-dev:armhf.
(데이터베이스 읽는 중 ... 현재 211721개의 파일과 디렉터리가 설치되어 있습니다.)

```

- 패키지 설치하지 전에 필요한 의존성 패키지 설치

```

pi@raspberrypi:~/ros_catkin_ws $ sudo ./src/catkin/bin/catkin_make_isolated --install -DCMAKE_BUILD_TYPE=Release --install-space /opt/ros/melodic
Base path: /home/pi/ros_catkin_ws
Source space: /home/pi/ros_catkin_ws/src
Build space: /home/pi/ros_catkin_ws/build_isolated
Devel space: /home/pi/ros_catkin_ws/devel_isolated
Install space: /opt/ros/melodic

```

- build

```
pi@raspberrypi:~$ rospack list
actionlib /home/pi/ros_catkin_ws/src/actionlib
actionlib_msgs /home/pi/ros_catkin_ws/src/common_msgs/actionlib_msgs
actionlib_tutorials /home/pi/ros_catkin_ws/src/common_tutorials/actionlib_tutorials
amcl /home/pi/ros_catkin_ws/src/navigation/amcl
angles /home/pi/ros_catkin_ws/src/angles
base_local_planner /home/pi/ros_catkin_ws/src/navigation/base_local_planner
```

```
turtle_actionlib /home/pi/ros_catkin_ws/src/common_tutorials/turtle_actionlib
turtle_tf /home/pi/ros_catkin_ws/src/geometry_tutorials/turtle_tf
turtle_tf2 /home/pi/ros_catkin_ws/src/geometry_tutorials/turtle_tf2
turtlebot3_bringup /home/pi/ros_catkin_ws/src/turtlebot3/turtlebot3_bringup
turtlebot3_description /home/pi/ros_catkin_ws/src/turtlebot3/turtlebot3_description
turtlebot3_example /home/pi/ros_catkin_ws/src/turtlebot3/turtlebot3_example
turtlebot3_msgs /home/pi/ros_catkin_ws/src/turtlebot3_msgs
turtlebot3_navigation /home/pi/ros_catkin_ws/src/turtlebot3/turtlebot3_navigation
turtlebot3_slam /home/pi/ros_catkin_ws/src/turtlebot3/turtlebot3_slam
turtlebot3_teleop /home/pi/ros_catkin_ws/src/turtlebot3/turtlebot3_teleop
```

```
dynamixel_sdk /home/pi/ros_catkin_ws/src/dynamixel_sdk/ros/dynamixel_sdk
dynamixel_sdk_examples /home/pi/ros_catkin_ws/src/dynamixel_sdk/ros/dynamixel_sdk_examples
```

```
nav_core /home/pi/ros_catkin_ws/src/navigation/nav_core
nav_msgs /home/pi/ros_catkin_ws/src/common_msgs/nav_msgs
navfn /home/pi/ros_catkin_ws/src/navigation/navfn
```

- 깔려고 했던 패키지들이 인식되는지 확인

3. mini RCCAR - ROS 원격 구동 테스트 진행중

- rccar에 대한 파일이 필요하다고 생각됨

어떤 파일이 필요할까??

- 최소한으로 로봇의 바퀴를 움직일 수 있는 ros rccar 파일?

roslaunch로 구동시킬 ros_rccar.launch파일이란것이 필요한 것 같음

- launch 파일 구상 및 작성 중


- launch 파일에서 node pkg로 로봇을 조작할 수 있는 control.py 같은것을 불러오도록하고 control.py 파일을 작성해야할듯

- control.py 구성요소

라즈베리파이 pin 사용하니 import RPi.GPIO as GPIO, import pigpio 들어가고

각 센서들 pwm, imu, encoder 값도 받아서 처리해야함

- 우선적으로 로봇을 키보드로 조작할 수 있게 코딩 구상중

 김윤호님의 게시글 더보기

좋아요 0 댓글 0

블로그/카페 공유수 0 공유

댓글

김윤호

등록



'라이다4기' 게시판 글

[이 게시판 새글 구독하기](#)

[프로젝트] 20_17일자_진행사항	배진호	09:30
[프로젝트] 19_16일자_진행사항	배진호	2022.08.16.
[프로젝트] 19_<PT>_중간점검_3	배진호	2022.08.16.
[프로젝트] <seminar> docker_기본	배진호	2022.08.12.
[프로젝트] 18_15일자_진행사항	배진호	2022.08.12.
		전체보기