

ROS实验报告

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实验内容

选择实现内容C:

- 实现两个小乌龟，其一随机运动，另一只跟随此小乌龟的运动方式。

实验步骤

1. ROS工作空间建立

```
zhaozhengjie@ubuntu: ~/catkin_ws
File Edit View Search Terminal Help
zhaozhengjie@ubuntu:~$ mkdir -p ~/catkin_ws/src
zhaozhengjie@ubuntu:~$ cd ~/catkin_ws/src
zhaozhengjie@ubuntu:~/catkin_ws/src$ catkin_init_workspace
Creating symlink "/home/zhaozhengjie/catkin_ws/src/CMakeLists.txt" pointing to "
/opt/ros/melodic/share/catkin/cmake/toplevel.cmake"
zhaozhengjie@ubuntu:~/catkin_ws/src$ ls
CMakeLists.txt
zhaozhengjie@ubuntu:~/catkin_ws/src$ cd ~/catkin_ws/
zhaozhengjie@ubuntu:~/catkin_ws$ catkin_make
Base path: /home/zhaozhengjie/catkin_ws
Source space: /home/zhaozhengjie/catkin_ws/src
Build space: /home/zhaozhengjie/catkin_ws/build
Devel space: /home/zhaozhengjie/catkin_ws/devel
Install space: /home/zhaozhengjie/catkin_ws/install
####
### Running command: "cmake /home/zhaozhengjie/catkin_ws/src -DCATKIN_DEVEL_PRE
FIX=/home/zhaozhengjie/catkin_ws/devel -DCMAKE_INSTALL_PREFIX=/home/zhaozhengjie
/catkin_ws/install -G Unix Makefiles" in "/home/zhaozhengjie/catkin_ws/build"
####
-- The C compiler identification is GNU 7.5.0
-- The CXX compiler identification is GNU 7.5.0
-- Check for working C compiler: /usr/bin/cc
-- Check for working C compiler: /usr/bin/cc -- works
-- Detecting C compiler ABI info
zhaozhengjie@ubuntu: ~/catkin_ws
File Edit View Search Terminal Help
-- Looking for pthread.h - found
-- Looking for pthread_create
-- Looking for pthread_create - not found
-- Looking for pthread_create in pthreads
-- Looking for pthread_create in pthreads - not found
-- Looking for pthread_create in pthread
-- Looking for pthread_create in pthread - found
-- Found Threads: TRUE
-- Using Python nosetests: /usr/bin/nosetests-2.7
-- catkin 0.7.29
-- BUILD_SHARED_LIBS is on
-- BUILD_SHARED_LIBS is on
-- Configuring done
-- Generating done
-- Build files have been written to: /home/zhaozhengjie/catkin_ws/build
####
### Running command: "make -j6 -l6" in "/home/zhaozhengjie/catkin_ws/build"
####
zhaozhengjie@ubuntu:~/catkin_ws$ ls
build  devel  src
zhaozhengjie@ubuntu:~/catkin_ws$ source devel/setup.bash
zhaozhengjie@ubuntu:~/catkin_ws$ echo $ROS_PACKAGE_PATH
/home/zhaozhengjie/catkin_ws/src:/opt/ros/melodic/share
zhaozhengjie@ubuntu:~/catkin_ws$
```

2. 编写程序

```
zhaozhengjie@ubuntu: ~/catkin_ws/src
File Edit View Search Terminal Help
zhaozhengjie@ubuntu:~/catkin_ws$ cd src
zhaozhengjie@ubuntu:~/catkin_ws/src$ catkin_create_pkg my_turtle_package std_msgs roscpp
Created file my_turtle_package/package.xml
Created file my_turtle_package/CMakeLists.txt
Created folder my_turtle_package/include/my_turtle_package
Created folder my_turtle_package/src
Successfully created files in /home/zhaozhengjie/catkin_ws/src/my_turtle_package
. Please adjust the values in package.xml.
zhaozhengjie@ubuntu:~/catkin_ws/src$ ls
CMakeLists.txt  my_turtle_package
```

实现两个程序 random_movement.cpp 和 follow_movement.cpp

- o `random_movement.cpp` 负责实现乌龟turtle1的随机移动
- o `follow_movement.cpp` 负责实现乌龟turtle2的跟随移动

3. 运行

