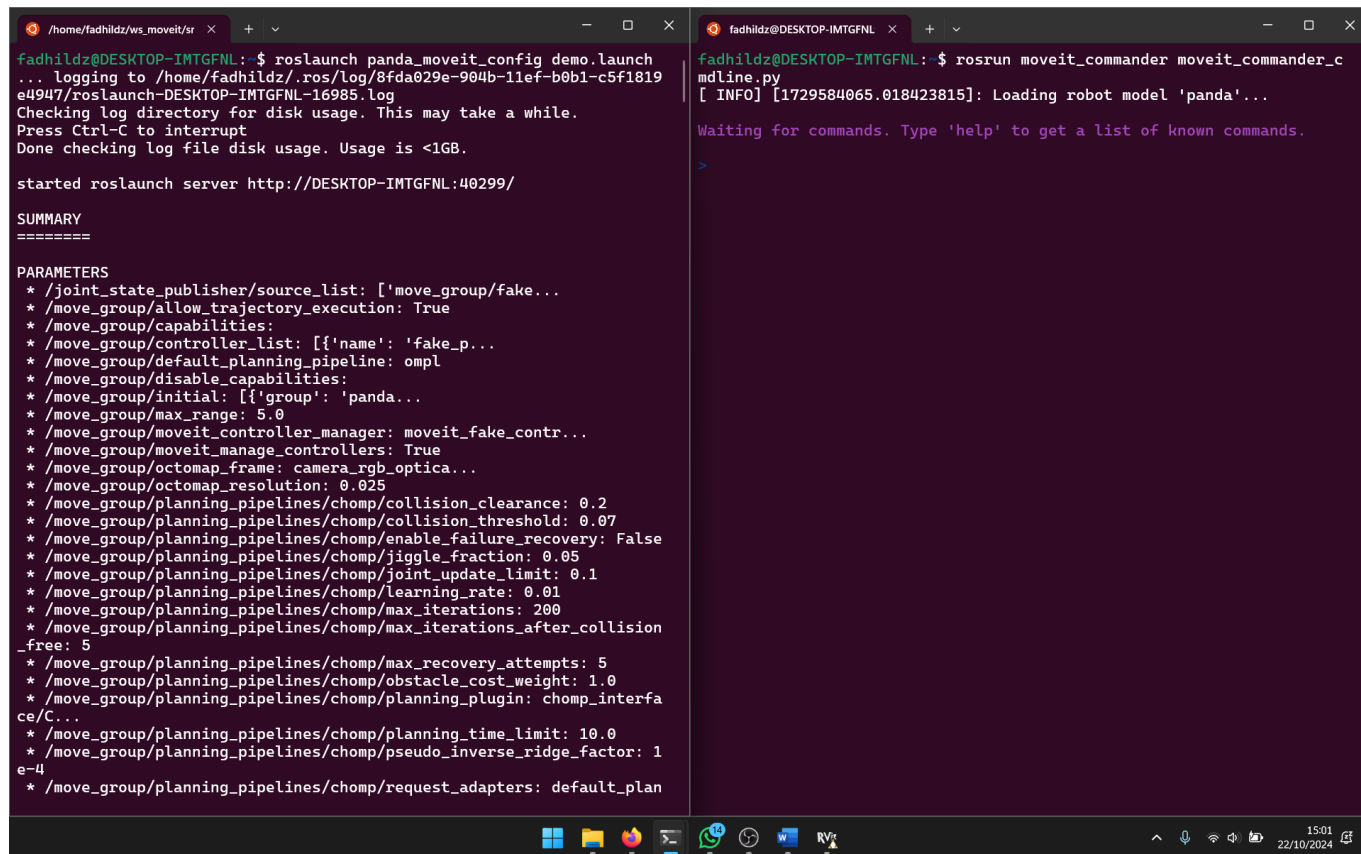


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Kelas : TK-45-G09

MoveIt Commander Scripting – MoveIt 1 Noetic

1. Jalankan **roslaunch panda_moveit_config demo.launch** untuk membuka RViz dan **roslaunch moveit_commander moveit_commander_cmdline.py** untuk membuka command line MoveIt Commander.



The image shows two terminal windows side-by-side. The left window is titled '/home/fadhildz/ws_moveit/sr' and shows the output of 'roslaunch panda_moveit_config demo.launch'. It includes a summary of parameters for the move_group, such as planning pipelines and collision avoidance settings. The right window is titled 'fadhildz@DESKTOP-IMTGFNL' and shows the output of 'roslaunch moveit_commander moveit_commander_cmdline.py', which displays a list of known commands and a prompt for user input.

```
fadhildz@DESKTOP-IMTGFNL: $ roslaunch panda_moveit_config demo.launch
... logging to /home/fadhildz/.ros/log/8fda029e-904b-11ef-b0b1-c5f1819
e4947/roslaunch-DESKTOP-IMTGFNL-16985.log
Checking log directory for disk usage. This may take a while.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://DESKTOP-IMTGFNL:40299/

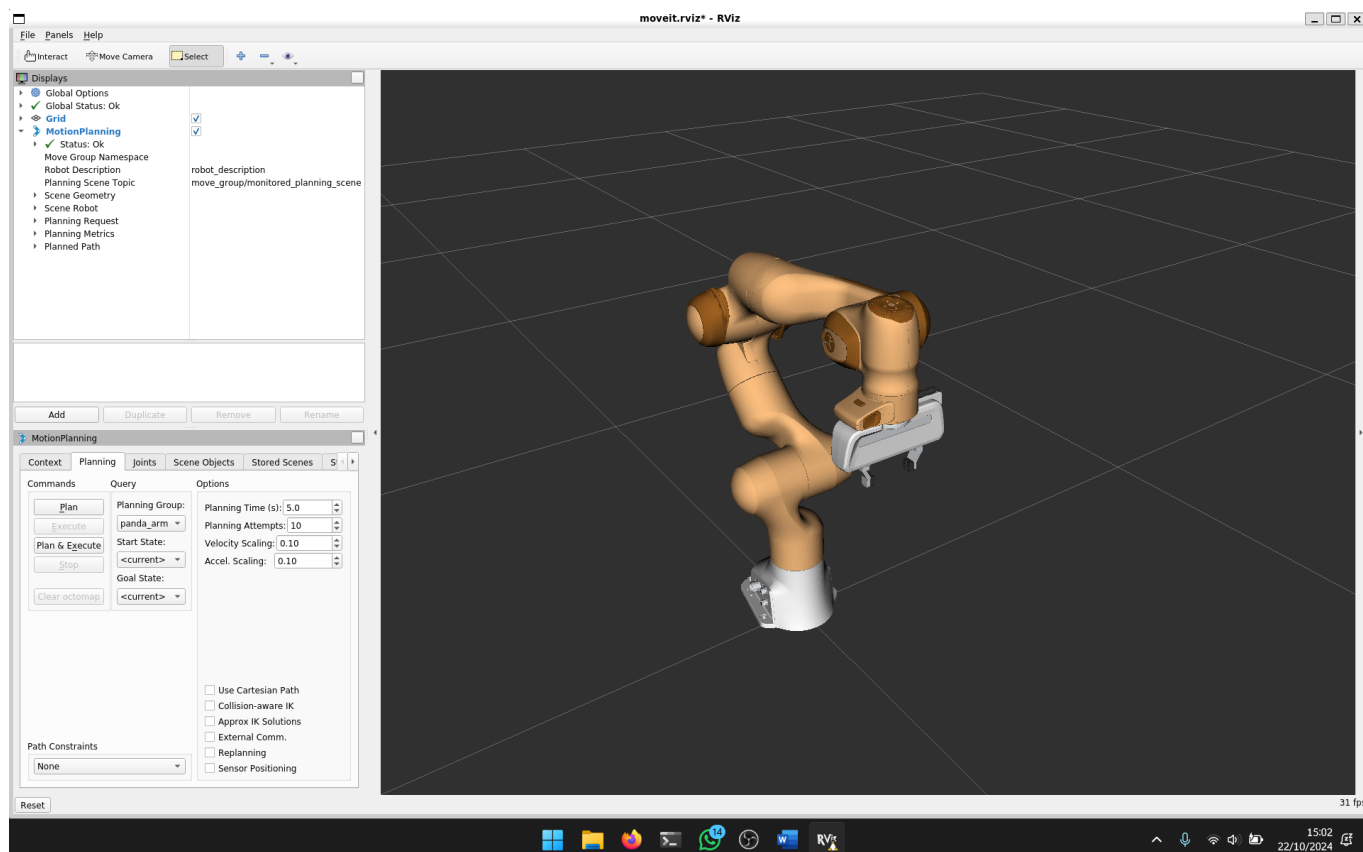
SUMMARY
=====

PARAMETERS
* /joint_state_publisher/source_list: ['move_group/fake...
* /move_group/allow_trajectory_execution: True
* /move_group/capabilities:
* /move_group/controller_list: [{'name': 'fake_p...
* /move_group/default_planning_pipeline: ompl
* /move_group/disable_capabilities:
* /move_group/initial: [{'group': 'panda...
* /move_group/max_range: 5.0
* /move_group/moveit_controller_manager: moveit_fake_contr...
* /move_group/moveit_manage_controllers: True
* /move_group/octomap_frame: camera_rgb_optica...
* /move_group/octomap_resolution: 0.025
* /move_group/planning_pipelines/chomp/collision_clearance: 0.2
* /move_group/planning_pipelines/chomp/collision_threshold: 0.07
* /move_group/planning_pipelines/chomp/enable_failure_recovery: False
* /move_group/planning_pipelines/chomp/jiggle_fraction: 0.05
* /move_group/planning_pipelines/chomp/joint_update_limit: 0.1
* /move_group/planning_pipelines/chomp/learning_rate: 0.01
* /move_group/planning_pipelines/chomp/max_iterations: 200
* /move_group/planning_pipelines/chomp/max_iterations_after_collision
_free: 5
* /move_group/planning_pipelines/chomp/max_recovery_attempts: 5
* /move_group/planning_pipelines/chomp/obstacle_cost_weight: 1.0
* /move_group/planning_pipelines/chomp/planning_plugin: chomp_interfa
ce/C...
* /move_group/planning_pipelines/chomp/planning_time_limit: 10.0
* /move_group/planning_pipelines/chomp/pseudo_inverse_ridge_factor: 1
e-4
* /move_group/planning_pipelines/chomp/request_adapters: default_plan

fadhildz@DESKTOP-IMTGFNL: $ roslaunch moveit_commander moveit_commander_c
mdline.py
[ INFO] [1729584065.018423815]: Loading robot model 'panda'...

Waiting for commands. Type 'help' to get a list of known commands.
>
```

2. RViz akan terbuka untuk visualisasi robot.



3. Di terminal yang kedua, jalankan **use panda_arm** untuk memilih grup robot arm.

```
fadhildz@DESKTOP-INTGFNL:~$ roslaunch panda_moveit_config demo.launch
... logging to /home/fadhildz/.ros/log/8fda029e-904b-11ef-b0b1-c5f1819
e4947/roslaunch-DESKTOP-INTGFNL-16985.log
Checking log directory for disk usage. This may take a while.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://DESKTOP-INTGFNL:40299/

SUMMARY
=====

PARAMETERS
* /joint_state_publisher/source_list: ['move_group/fake...
* /move_group/allow_trajectory_execution: True
* /move_group/capabilities:
* /move_group/controller_list: [{'name': 'fake_p...
* /move_group/default_planning_pipeline: ompl
* /move_group/disable_capabilities:
* /move_group/initial: [{'group': 'panda...
* /move_group/max_range: 5.0
* /move_group/moveit_controller_manager: moveit_fake_contr...
* /move_group/moveit_manage_controllers: True
* /move_group/octomap_frame: camera_rgb_optica...
* /move_group/octomap_resolution: 0.025
* /move_group/planning_pipelines/chomp/collision_clearance: 0.2
* /move_group/planning_pipelines/chomp/collision_threshold: 0.07
* /move_group/planning_pipelines/chomp/enable_failure_recovery: False
* /move_group/planning_pipelines/chomp/jiggle_fraction: 0.05
* /move_group/planning_pipelines/chomp/joint_update_limit: 0.1
* /move_group/planning_pipelines/chomp/learning_rate: 0.01
* /move_group/planning_pipelines/chomp/max_iterations: 200
* /move_group/planning_pipelines/chomp/max_iterations_after_collision
_free: 5
* /move_group/planning_pipelines/chomp/max_recovery_attempts: 5
* /move_group/planning_pipelines/chomp/obstacle_cost_weight: 1.0
* /move_group/planning_pipelines/chomp/planning_plugin: chomp_interfa
ce/C...
* /move_group/planning_pipelines/chomp/planning_time_limit: 10.0
* /move_group/planning_pipelines/chomp/pseudo_inverse_ridge_factor: 1
e-4
* /move_group/planning_pipelines/chomp/request_adapters: default_plan

fadhildz@DESKTOP-INTGFNL:~$ rosrn moveit_commander moveit_commander_c
mdline.py
[ INFO] [1729584065.018423815]: Loading robot model 'panda'...

Waiting for commands. Type 'help' to get a list of known commands.

> use panda_arm
[ INFO] [1729584096.230196997]: Ready to take commands for planning gr
oup panda_arm.
OK
panda_arm>
```

4. **current** untuk menampilkan posisi saat ini dari robot.

```
fadhildz@DESKTOP-INTGFNL:~$ roslaunch panda_moveit_config demo.launch
... logging to /home/fadhildz/.ros/log/8fda029e-904b-11ef-b0b1-c5f1819
e4947/roslaunch-DESKTOP-INTGFNL-16985.log
Checking log directory for disk usage. This may take a while.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://DESKTOP-INTGFNL:40299/

SUMMARY
=====

PARAMETERS
* /joint_state_publisher/source_list: ['move_group/fake...
* /move_group/allow_trajectory_execution: True
* /move_group/capabilities:
* /move_group/controller_list: [{'name': 'fake_p...
* /move_group/default_planning_pipeline: ompl
* /move_group/disable_capabilities:
* /move_group/initial: [{'group': 'panda...
* /move_group/max_range: 5.0
* /move_group/moveit_controller_manager: moveit_fake_contr...
* /move_group/moveit_manage_controllers: True
* /move_group/octomap_frame: camera_rgb_optica...
* /move_group/octomap_resolution: 0.025
* /move_group/planning_pipelines/chomp/collision_clearance: 0.2
* /move_group/planning_pipelines/chomp/collision_threshold: 0.07
* /move_group/planning_pipelines/chomp/enable_failure_recovery: False
* /move_group/planning_pipelines/chomp/jiggle_fraction: 0.05
* /move_group/planning_pipelines/chomp/joint_update_limit: 0.1
* /move_group/planning_pipelines/chomp/learning_rate: 0.01
* /move_group/planning_pipelines/chomp/max_iterations: 200
* /move_group/planning_pipelines/chomp/max_iterations_after_collision
_free: 5
* /move_group/planning_pipelines/chomp/max_recovery_attempts: 5
* /move_group/planning_pipelines/chomp/obstacle_cost_weight: 1.0
* /move_group/planning_pipelines/chomp/planning_plugin: chomp_interfa
ce/C...
* /move_group/planning_pipelines/chomp/planning_time_limit: 10.0
* /move_group/planning_pipelines/chomp/pseudo_inverse_ridge_factor: 1
e-4
* /move_group/planning_pipelines/chomp/request_adapters: default_plan

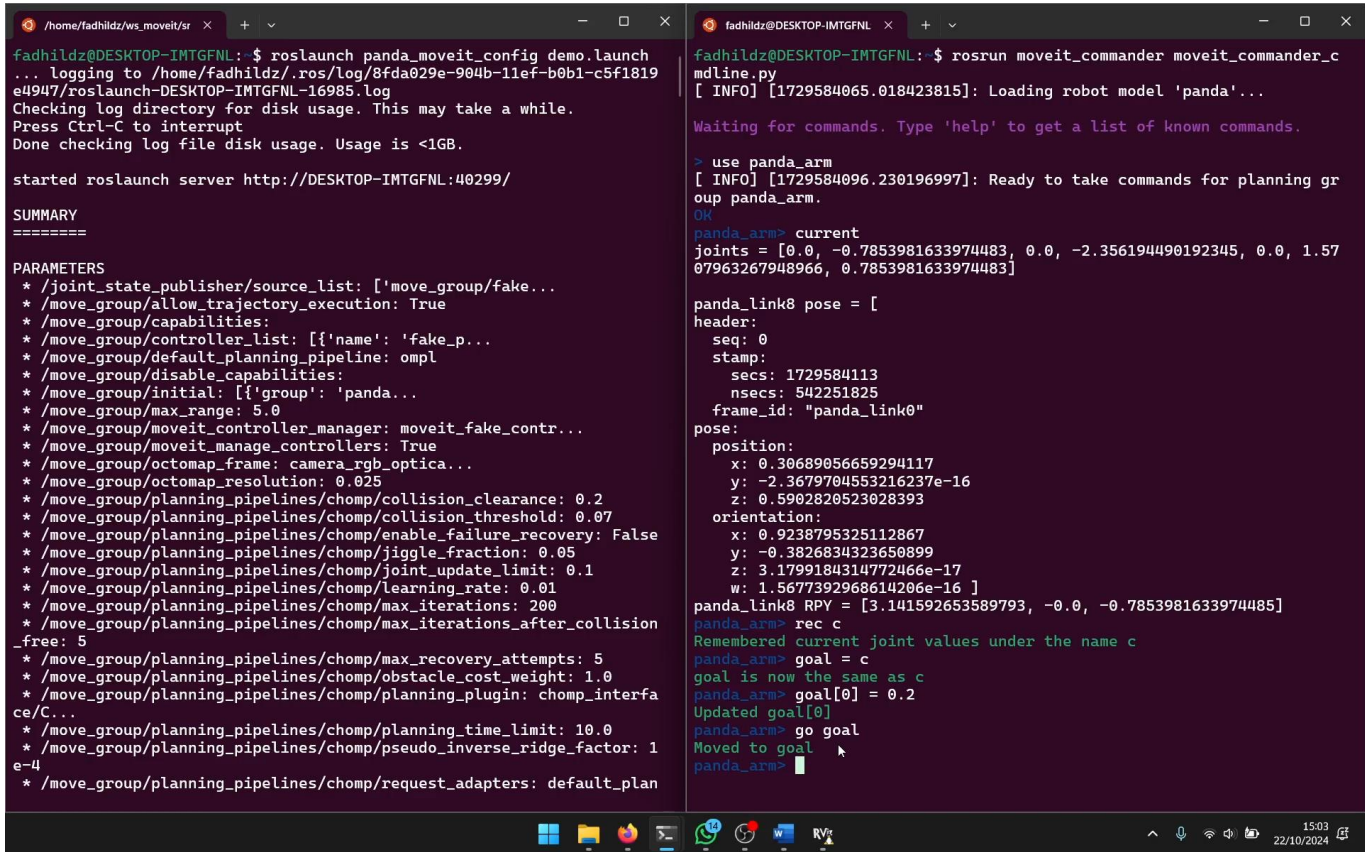
fadhildz@DESKTOP-INTGFNL:~$ rosrn moveit_commander moveit_commander_c
mdline.py
[ INFO] [1729584065.018423815]: Loading robot model 'panda'...

Waiting for commands. Type 'help' to get a list of known commands.

> use panda_arm
[ INFO] [1729584096.230196997]: Ready to take commands for planning gr
oup panda_arm.
OK
panda_arm> current
joints = [0.0, -0.7853981633974483, 0.0, -2.356194490192345, 0.0, 1.57
07963267948966, 0.7853981633974483]

panda_link8 pose = [
header:
  seq: 0
  stamp:
    secs: 1729584113
    nsecs: 542251825
  frame_id: "panda_link0"
pose:
  position:
    x: 0.30689056659294117
    y: -2.3679704553216237e-16
    z: 0.590280523028393
  orientation:
    x: 0.9238795325112867
    y: -0.3826834323650899
    z: 3.1799184314772466e-17
    w: 1.5677392968614206e-16 ]
panda_link8 RPY = [3.141592653589793, -0.0, -0.7853981633974485]
panda_arm>
```

5. **rec c** untuk merekam posisi saat ini sebagai variabel, **goal = c** untuk menyimpan posisi tersebut, dan **go goal** untuk menggerakkan robot ke posisi yang disimpan.

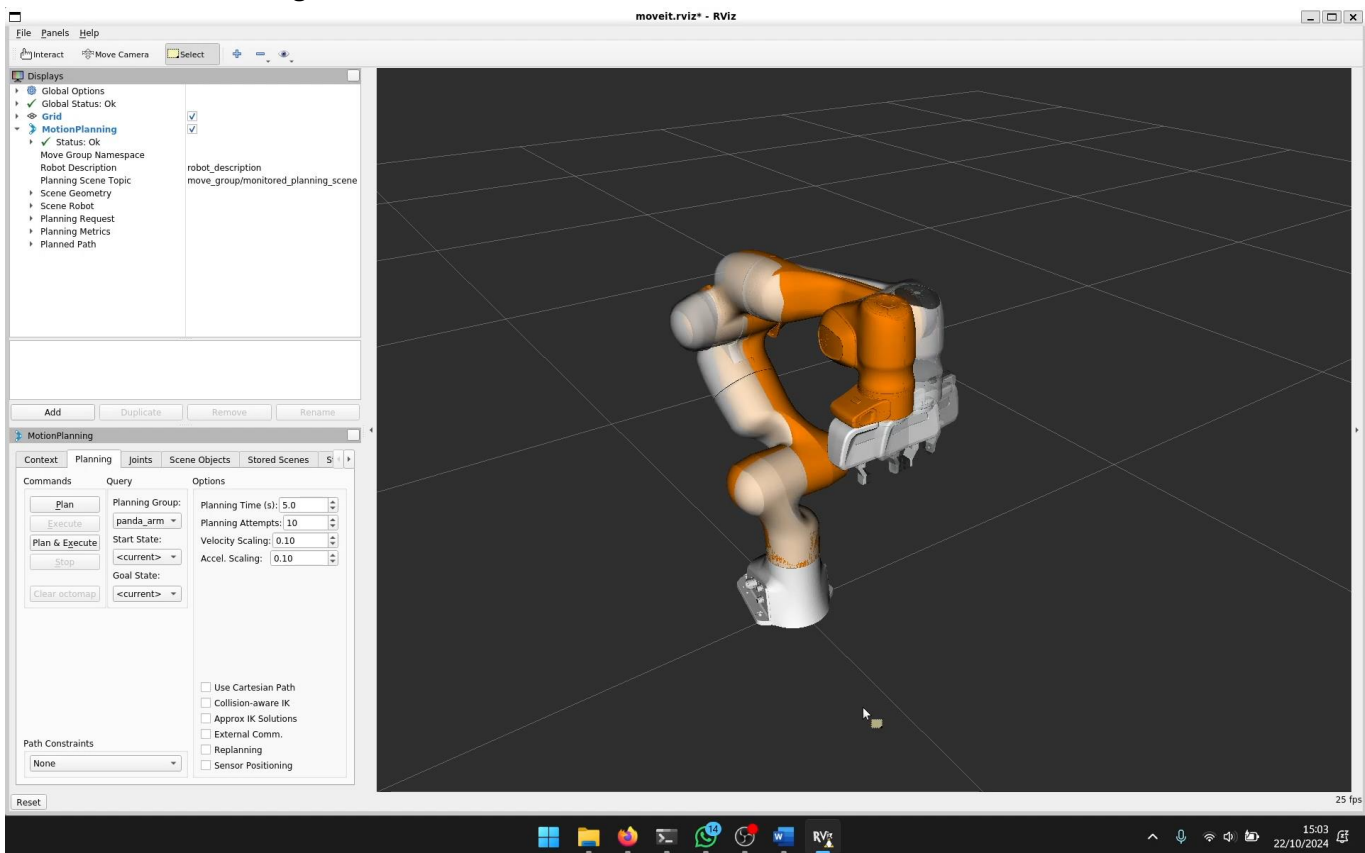


The image shows two terminal windows. The left window displays the output of `roslaunch panda_moveit_config demo.launch`, showing logging information and a summary of parameters for the move_group. The right window shows the output of `roslaunch moveit_commander moveit_commander.py`, displaying the loading of the 'panda' robot model and the current joint positions. The user then enters the following commands in the right terminal:

```
> use panda_arm
[ INFO ] [1729584096.230196997]: Ready to take commands for planning group panda_arm.
OK
panda_arm> current
joints = [0.0, -0.7853981633974483, 0.0, -2.356194490192345, 0.0, 1.5707963267948966, 0.7853981633974483]

panda_link8 pose = [
header:
  seq: 0
  stamp:
    secs: 1729584113
    nsecs: 542251825
  frame_id: "panda_link0"
pose:
  position:
    x: 0.30689056659294117
    y: -2.3679704553216237e-16
    z: 0.590280523028393
  orientation:
    x: 0.9238795325112867
    y: -0.3826834323650899
    z: 3.1799184314772466e-17
    w: 1.5677392968614206e-16 ]
panda_link8 RPY = [3.141592653589793, -0.0, -0.7853981633974485]
panda_arm> rec c
Remembered current joint values under the name c
panda_arm> goal = c
goal is now the same as c
panda_arm> goal[0] = 0.2
Updated goal[0]
panda_arm> go goal
Moved to goal
panda_arm>
```

6. Robot akan bergerak sesuai instruksi



7. Selain memakai **go goal**, bisa juga menggunakan **goal[0] = 0.2** untuk menetapkan posisi x, **goal[1] = 0.2** untuk posisi y, **plan goal** untuk membuat rencana, dan **execute** untuk menjalankan rencana tersebut.

```
/home/fadhildz/ws_moveit/sr x + -
fadhildz@DESKTOP-INTGFNL: $ roslaunch panda_moveit_config demo.launch
... logging to /home/fadhildz/.ros/log/8fda029e-904b-11ef-b0b1-c5f1819
e4947/roslaunch-DESKTOP-INTGFNL-16985.log
Checking log directory for disk usage. This may take a while.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://DESKTOP-INTGFNL:40299/

SUMMARY
=====

PARAMETERS
* /joint_state_publisher/source_list: ['move_group/fake...
* /move_group/allow_trajectory_execution: True
* /move_group/capabilities:
* /move_group/controller_list: [{'name': 'fake_p...
* /move_group/default_planning_pipeline: ompl
* /move_group/disable_capabilities:
* /move_group/initial: [{'group': 'panda...
* /move_group/max_range: 5.0
* /move_group/moveit_controller_manager: moveit_fake_contr...
* /move_group/moveit_manage_controllers: True
* /move_group/octomap_frame: camera_rgb_optica...
* /move_group/octomap_resolution: 0.025
* /move_group/planning_pipeline/chomp/collision_clearance: 0.2
* /move_group/planning_pipeline/chomp/collision_threshold: 0.07
* /move_group/planning_pipeline/chomp/enable_failure_recovery: False
* /move_group/planning_pipeline/chomp/jiggle_fraction: 0.05
* /move_group/planning_pipeline/chomp/joint_update_limit: 0.1
* /move_group/planning_pipeline/chomp/learning_rate: 0.01
* /move_group/planning_pipeline/chomp/max_iterations: 200
* /move_group/planning_pipeline/chomp/max_iterations_after_collision
_free: 5
* /move_group/planning_pipeline/chomp/max_recovery_attempts: 5
* /move_group/planning_pipeline/chomp/obstacle_cost_weight: 1.0
* /move_group/planning_pipeline/chomp/planning_plugin: chomp_interfa
ce/C...
* /move_group/planning_pipeline/chomp/planning_time_limit: 10.0
* /move_group/planning_pipeline/chomp/pseudo_inverse_ridge_factor: 1
e-4
* /move_group/planning_pipeline/chomp/request_adapters: default_plan

> use panda_arm
[ INFO] [1729584422.629871029]: Ready to take commands for planning gr
oup panda_arm.
OK
panda_arm> current
joints = [0.20007863260298037, -0.785440745800758, 3.6992368660867216e
-05, -2.3561226870135203, -9.620285090059042e-05, 1.5707914056821748,
0.785437227865752]

panda_link8 pose = [
header:
seq: 0
stamp:
secs: 1729584424
nsecs: 840282201
frame_id: "panda_link0"
pose:
position:
x: 0.3007579730617132
y: 0.06099583637192324
z: 0.5903285789003491
orientation:
x: 0.9574780552508974
y: -0.28850609521165277
z: 7.71630588686551e-05
w: 2.8009756778117666e-05 ]
panda_link8 RPY = [3.141583540160392, -0.0001639258429314693, -0.58533
24423820334]
panda_arm> rec c
Remembered current joint values under the name c
panda_arm> goal = c
goal is now the same as c
panda_arm> goal[0] = 0.2
Updated goal[0]
panda_arm> goal[1] = 0.2
Updated goal[1]
panda_arm> plan goal
Planned to goal
panda_arm> execute
Plan submitted for execution
panda_arm> 
```

8. Robot akan bergerak sesuai instruksi.

