

Lesson 3 Action Programming

Note: All action parameters in this lesson is only for reference, please operate according to the actual situation.

This lesson will use PC software to edit an action group. Robot Arm will grip down the block and place it on the right side for example.

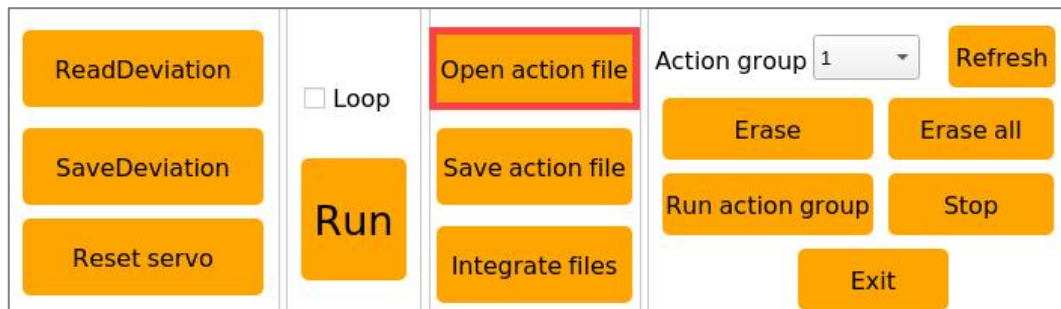
1. Edit Action

1) Connect to ArmPi mini system desktop via VNC viewer.

2) Double click on  icon, and click “Execute” to open PC software.



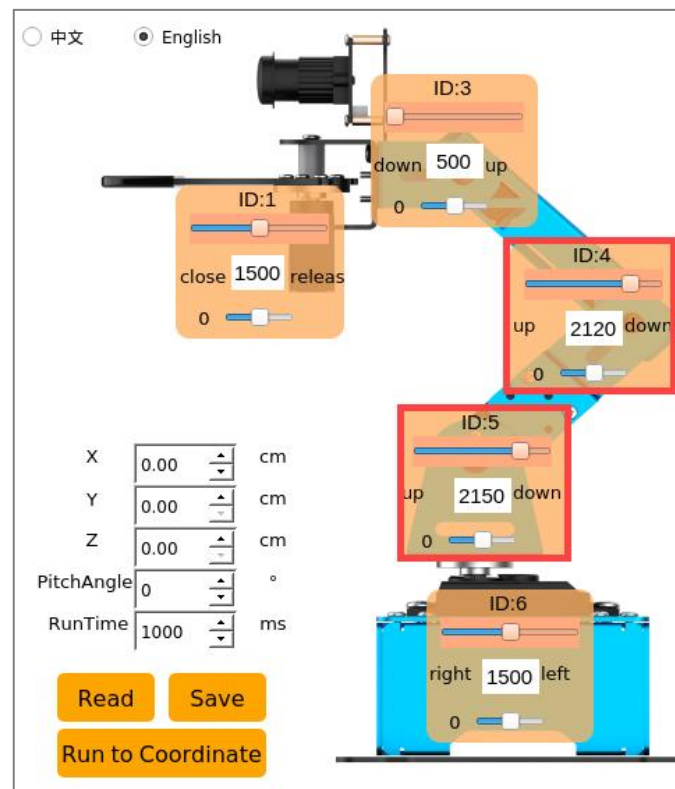
3) Click “Open action file” and select “start” action group, and then click “Open” to set this action as the first action group.



4) Double click the triangle button in front of No.1 action in action data list to synchronize the action status of ArmPi mini.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
	1	1000	1500	500	2360	920	1500

5) Drag the sliders of ID4 and ID5 servos to control the robot arm to move down to the block.



6) Set the running time to 800ms and click “Add action” to get No.2 action.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
	1	1000	1500	500	2360	920	1500
	2	800	1500	500	2120	2150	1500

Running time	800 ms	Add action	Delete action	Update action	Move up
Total time	1.8 s		Delete all	Insert action	Move down

7) To make the action group run smoother. After setting an action, we need to add a transition action and change the running time to 200ms. Then click “Add action” again to get No.3 action.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
	1	1000	1500	500	2360	920	1500
	2	800	1500	500	2120	2150	1500
▶	3	200	1500	500	2120	2150	1500

Running time ms
Total time 2.0 s

Add action

Delete action

Update action

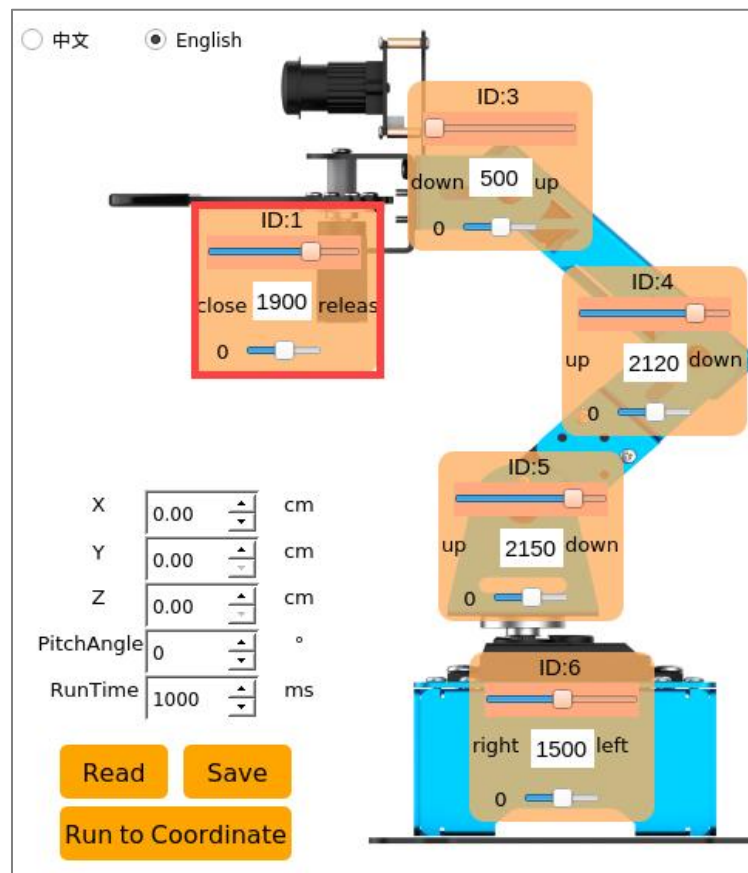
Move up

Delete all

Insert action

Move down

8) Next, the gripper is controlled to grip the block. We need to drag the slider of No.1 servo.



9) Set the running time to 800ms and click “Add action” to get No.4 action.

	编号	时间	ID:1	ID:3	ID:4	ID:5	ID:6
	1	1000	1500	510	2410	1190	1500
	2	800	1500	500	2120	2150	1500
	3	200	1500	500	2120	2150	1500
▶	4	300	1900	500	2120	2150	1500

1

动作时间

300 ms

2

添加动作

总时长

2.3 s

删除动作

更新动作

上移动作

删除全部

插入动作

下移动作

10) Add a transition action and set the running time to 100ms. Then click “Add action” to get No.5 action.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
	1	1000	1500	500	2360	920	1500
	2	800	1500	500	2120	2150	1500
	3	200	1500	500	2120	2150	1500
	4	300	1900	500	2120	2150	1500
▶	5	100	1900	500	2120	2150	1500

Running time

100 ms

Add action

总时长

2.4 s

Delete action

Update action

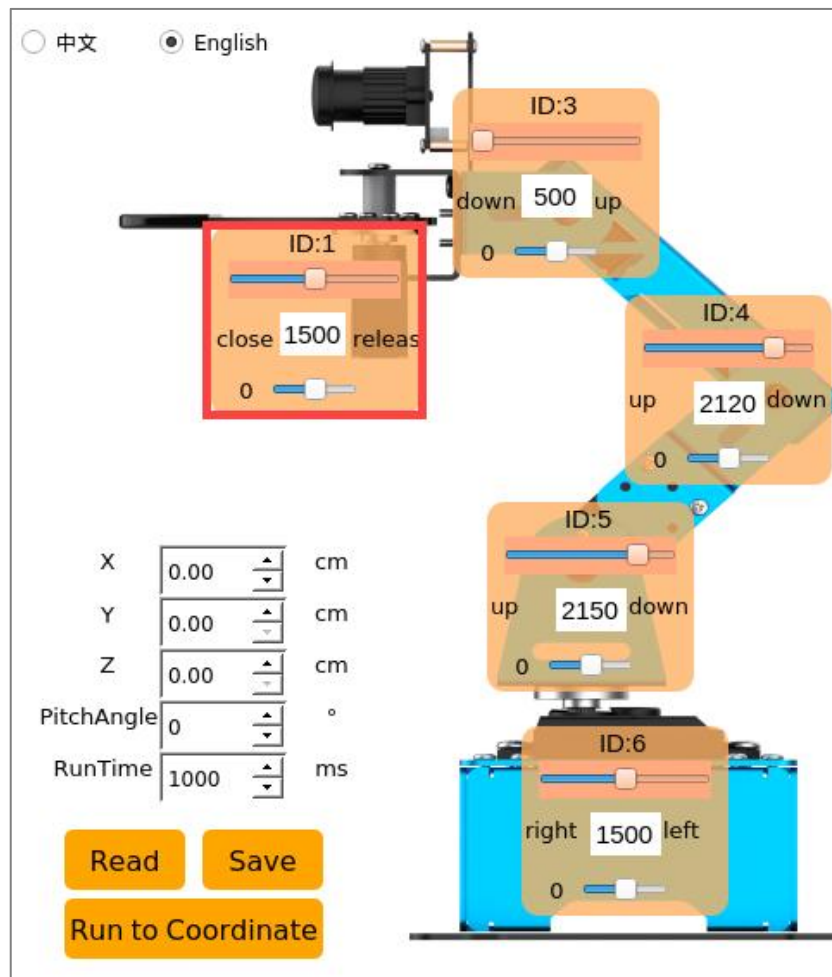
Move up

Delete all

Insert action

Move down

11) Then drag the slide of No.1 servo to control the gripper to close.

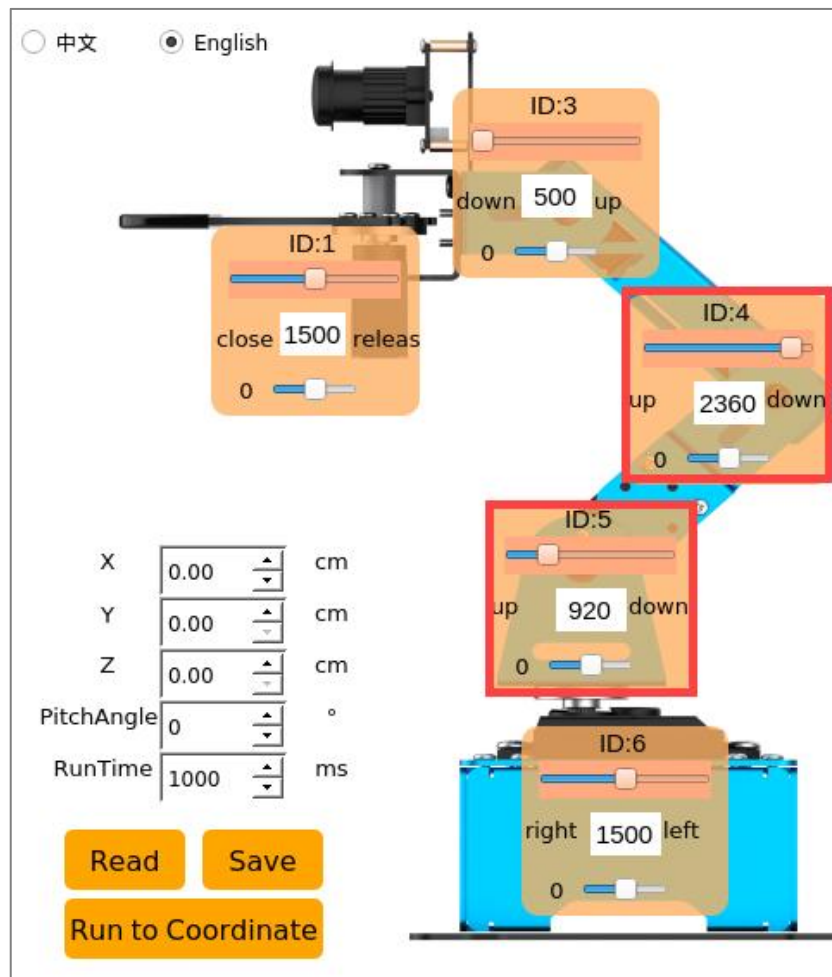


12) Set the running time to 200ms and click “Add action” to get No.6 action.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
	1	1000	1500	500	2360	920	1500
	2	800	1500	500	2120	2150	1500
	3	200	1500	500	2120	2150	1500
	4	300	1900	500	2120	2150	1500
	5	100	1900	500	2120	2150	1500
▶	6	200	1500	500	2120	2150	1500

Running time	200 ms	Add action	Delete action	Update action	Move up
Total time	2.6 s		Delete all	Insert action	Move down

13) Then drag the slider of ID4 and ID5 servos to control the robot arm to grip and lift up the block.



14) Set the running time to 1000ms and click “Add action” to get No.7 action.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
	1	1000	1500	500	2360	920	1500
	2	800	1500	500	2120	2150	1500
	3	200	1500	500	2120	2150	1500
	4	300	1900	500	2120	2150	1500
	5	100	1900	500	2120	2150	1500
	6	200	1500	500	2120	2150	1500
▶	7	1000	1500	500	2360	920	1500

Running time	1000 ms	Add action	Delete action	Update action	Move up
Total time	3.6 s		Delete all	Insert action	Move down

15) Set the running time to 100ms and click “Add action” to add a transition action.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
	1	1000	1500	500	2360	920	1500
	2	800	1500	500	2120	2150	1500
	3	200	1500	500	2120	2150	1500
	4	300	1900	500	2120	2150	1500
	5	100	1900	500	2120	2150	1500
	6	200	1500	500	2120	2150	1500
	7	1000	1500	500	2360	920	1500
▶	8	100	1500	500	2360	920	1500

Running time ms

Total time 3.7 s

Add action

Delete action

Update action

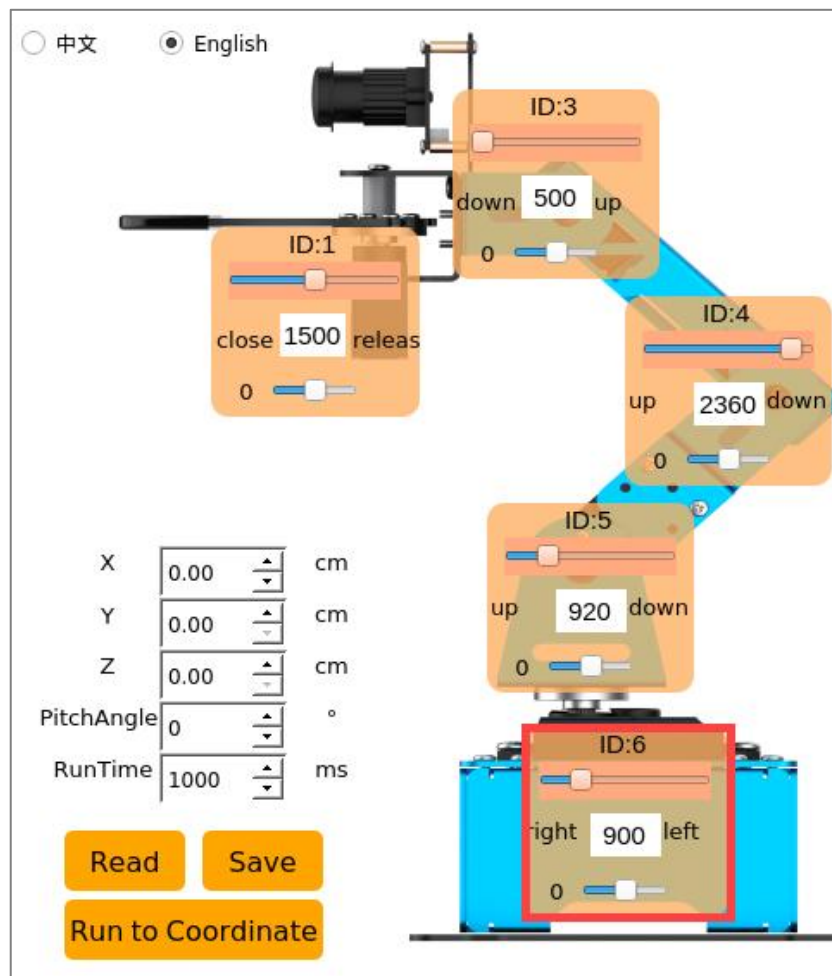
Move up

Delete all

Insert action

Move down

16) Then drag the slider of ID6 servo to control the robot arm to rotate to the right.



17) Set the running time to 800ms and click “Add action” to get No.9 action.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
	1	1000	1500	500	2360	920	1500
	2	800	1500	500	2120	2150	1500
	3	200	1500	500	2120	2150	1500
	4	300	1900	500	2120	2150	1500
	5	100	1900	500	2120	2150	1500
	6	200	1500	500	2120	2150	1500
	7	1000	1500	500	2360	920	1500
	8	100	1500	500	2360	920	1500
▶	9	800	1500	500	2360	920	900

Running time ms Add action
Delete action Update action Move up

Total time 4.5 s Add action
Delete all Insert action Move down

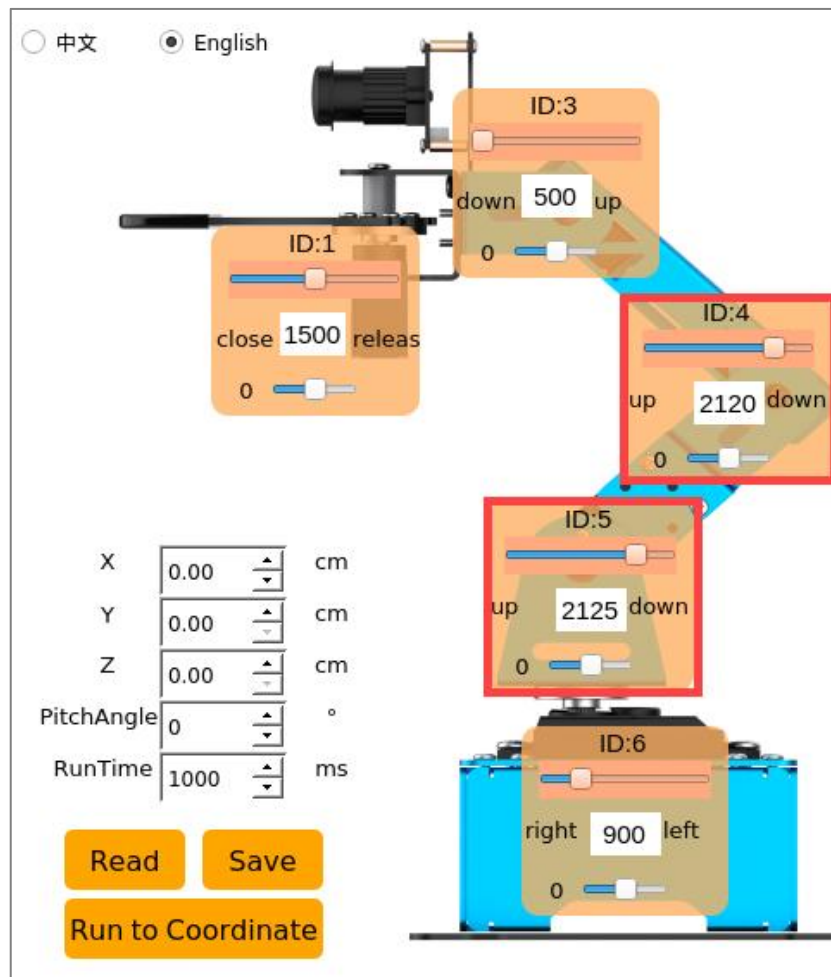
18) Add a transition action. Set the running time to 300ms and click “Add action” to get No.10 action.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
	2	800	1500	500	2120	2150	1500
	3	200	1500	500	2120	2150	1500
	4	300	1900	500	2120	2150	1500
	5	100	1900	500	2120	2150	1500
	6	200	1500	500	2120	2150	1500
	7	1000	1500	500	2360	920	1500
	8	100	1500	500	2360	920	1500
	9	800	1500	500	2360	920	900
▶	10	300	1500	500	2360	920	900

Running time ms Add action
Delete action Update action Move up

Total time 4.8 s Add action
Delete all Insert action Move down

19) Drag the slider of ID4 and ID5 servos to control the robot arm to put down the block.

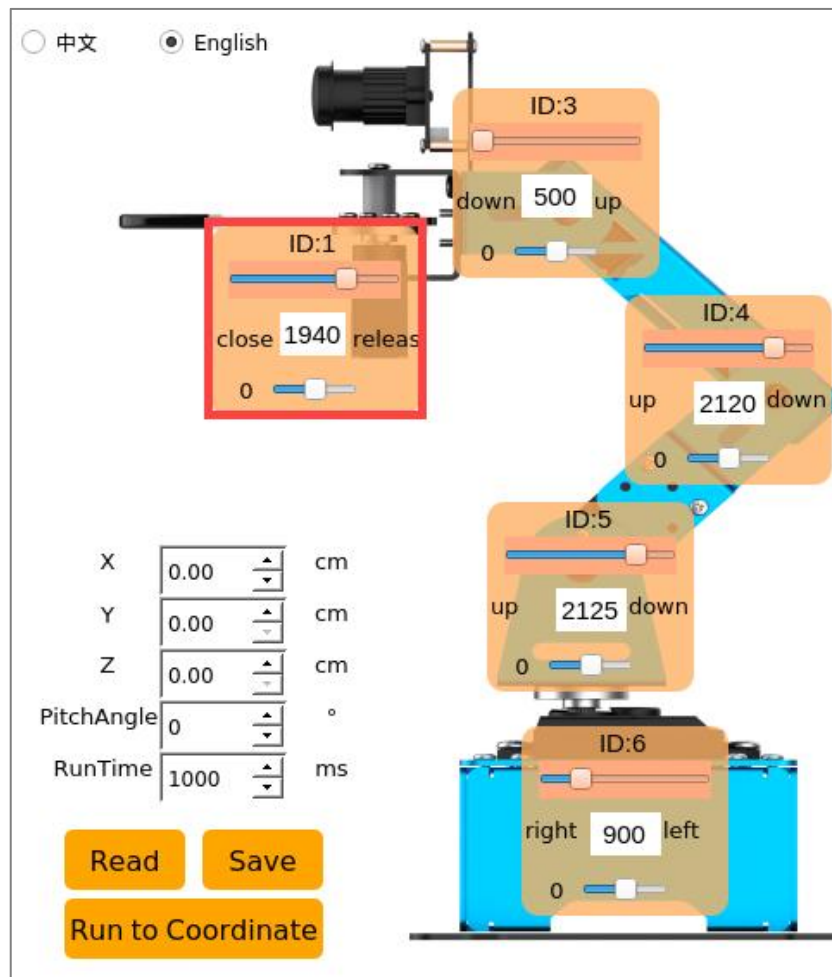


20) Set the running time to 1000ms and click “add action” to get No.11 action.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
	3	200	1500	500	2120	2150	1500
	4	300	1900	500	2120	2150	1500
	5	100	1900	500	2120	2150	1500
	6	200	1500	500	2120	2150	1500
	7	1000	1500	500	2360	920	1500
	8	100	1500	500	2360	920	1500
	9	800	1500	500	2360	920	900
	10	300	1500	500	2360	920	900
▶	11	1000	1500	500	2120	2125	900

Running time	1000 ms	Add action	Delete action	Update action	Move up
Total time	5.8 s		Delete all	Insert action	Move down

21) Now, drag the slider of ID1 servo to control the gripper to release the block.

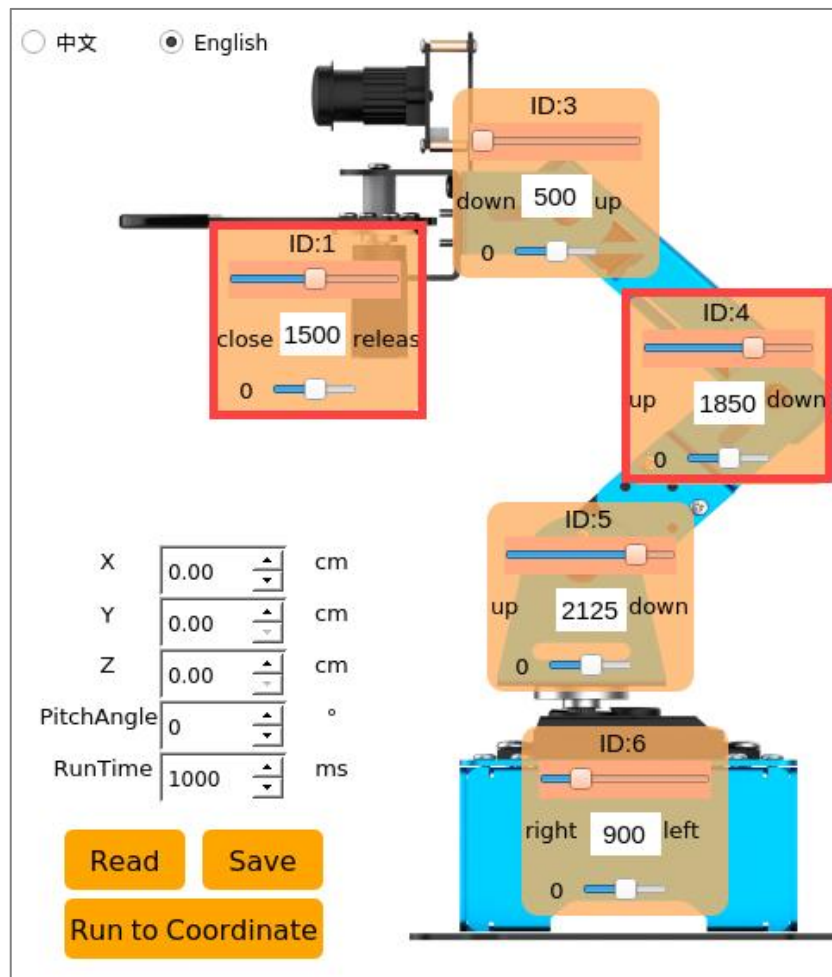


22) Set the running time to 300ms and click “Add action” to get No.12 action.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
	4	300	1900	500	2120	2150	1500
	5	100	1900	500	2120	2150	1500
	6	200	1500	500	2120	2150	1500
	7	1000	1500	500	2360	920	1500
	8	100	1500	500	2360	920	1500
	9	800	1500	500	2360	920	900
	10	300	1500	500	2360	920	900
	11	1000	1500	500	2120	2125	900
▶	12	300	1940	500	2120	2125	900

Running time	300 ms	Add action	Delete action	Update action	Move up
Total time	6.1 s		Delete all	Insert action	Move down

23) Drag the slider of ID1 and ID4 servos to control the gripper to close and lift up.



24) Set the running time to 400ms and click “Add action” to get No.13 action.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
	5	100	1900	500	2120	2150	1500
	6	200	1500	500	2120	2150	1500
	7	1000	1500	500	2360	920	1500
	8	100	1500	500	2360	920	1500
	9	800	1500	500	2360	920	900
	10	300	1500	500	2360	920	900
	11	1000	1500	500	2120	2125	900
	12	300	1940	500	2120	2125	900
▶	13	400	1500	500	1850	2125	900

Running time	400 ms	Add action	Delete action	Update action	Move up
Total time	6.5 s		Delete all	Insert action	Move down

25) Finally, robot arm is controlled to return to the initial position. Click “▶” in front of No.1 action to run it and set the running time to 1000ms. Then click “Add action” to get No.14 action.

	Index	Time	ID:1	ID:3	ID:4	ID:5	ID:6
1	1	1000	1500	500	2360	920	1500
2	2	800	1500	500	2120	2150	1500
3	3	200	1500	500	2120	2150	1500
4	4	300	1900	500	2120	2150	1500
5	5	100	1900	500	2120	2150	1500
6	6	200	1500	500	2120	2150	1500
7	7	1000	1500	500	2360	920	1500
8	8	100	1500	500	2360	920	1500
9	9	800	1500	500	2360	920	900

Running time: 1000 ms

Total time: 6.5 s

Add action

Delete action

Update action

Move up

Delete all

Insert action

Move down

2. Save Action

Note: It is recommended to use English or numbers to name action group , and use underscore “_” instead of the space bar to avoid failure saving.

To facilitate later debugging and management, it is recommended to save the action. Click "Save Action File", name the file and click “Save”.

