

```
#!/usr/bin/env python
```

```
from __future__ import print_function
```

```
import roslib; roslib.load_manifest('teleop_twist_keyboard')
```

```
import rospy
```

```
from geometry_msgs.msg import Twist
```

```
from std_msgs.msg import Empty
```

```
import sys, select, termios, tty
```

```
msg = ""
```

```
Reading from the keyboard and Publishing to Twist!
```

```
-----
```

```
Moving around:
```

```
u i o
```

```
j k l
```

```
m , .
```

```
For Holonomic mode (strafing), hold down the shift key:
```

```
-----
```

```
U I O
```

J K L
M < >

t : up (+z)
b : down (-z)

anything else : stop

q/z : increase/decrease max speeds by 10%
w/x : increase/decrease only linear speed by 10%
e/c : increase/decrease only angular speed by 10%

CTRL-C to quit
""""

```
moveBindings = {  
  'i':(1,0,0,0),  
  'o':(1,0,0,-1),  
  'j':(0,0,0,1),  
  'l':(0,0,0,-1),  
  'u':(1,0,0,1),  
  ',':(-1,0,0,0),  
  '.':(-1,0,0,1),
```

```
'm':(-1,0,0,-1),  
'O':(1,-1,0,0),  
'I':(1,0,0,0),  
'J':(0,1,0,0),  
'L':(0,-1,0,0),  
'U':(1,1,0,0),  
'<':(-1,0,0,0),  
'>':(-1,-1,0,0),  
'M':(-1,1,0,0),  
't':(0,0,1,0),  
'b':(0,0,-1,0),  
}
```

```
speedBindings={  
    'q':(1.1,1.1),  
    'z':(.9,.9),  
    'w':(1.1,1),  
    'x':(.9,1),  
    'e':(1,1.1),  
    'c':(1,.9),  
}
```

flying_mode = False

```
def getKey():
    tty.setraw(sys.stdin.fileno())
    select.select([sys.stdin], [], [], 0)
    key = sys.stdin.read(1)
    termios.tcsetattr(sys.stdin, termios.TCSADRAIN, settings)
    return key
```

```
def vels(speed,turn):
    return "currently:\tspeed %s\tturn %s " % (speed,turn)
```

```
if __name__=="__main__":
    settings = termios.tcgetattr(sys.stdin)
```

```
pub = rospy.Publisher('/bebop/cmd_vel', Twist, queue_size = 1)
pubTakeoff = rospy.Publisher('/bebop/takeoff', Empty, queue_size=10)
pubLand = rospy.Publisher('/bebop/land', Empty, queue_size=10)
```

```
rospy.init_node('teleop_twist_keyboard')
```

```
speed = rospy.get_param("~speed", 0.5)
turn = rospy.get_param("~turn", 1.0)
```

```
x = 0
y = 0
z = 0
th = 0
status = 0
```

```
try:
    print(msg)
    print(vels(speed,turn))
    while(1):
        key = getKey()
        if key == ' ':
            if flying_mode:
                flying_mode = False
                pubLand.publish(Empty())
            else:
                flying_mode = True
                pubTakeoff.publish(Empty())
        elif key in moveBindings.keys():
            x = moveBindings[key][0]
            y = moveBindings[key][1]
            z = moveBindings[key][2]
            th = moveBindings[key][3]
```

```
elif key in speedBindings.keys():
    speed = speed * speedBindings[key][0]
    turn = turn * speedBindings[key][1]

    print(vels(speed,turn))
    if (status == 14):
        print(msg)
        status = (status + 1) % 15
else:
    x = 0
    y = 0
    z = 0
    th = 0
    if (key == '\x03'):
        break

twist = Twist()
twist.linear.x = x*speed; twist.linear.y = y*speed; twist.linear.z = z*speed;
twist.angular.x = 0; twist.angular.y = 0; twist.angular.z = th*turn
pub.publish(twist)

except Exception as e:
    print(e)
```

finally:

```
twist = Twist()
```

```
twist.linear.x = 0; twist.linear.y = 0; twist.linear.z = 0
```

```
twist.angular.x = 0; twist.angular.y = 0; twist.angular.z = 0
```

```
pub.publish(twist)
```

```
termios.tcsetattr(sys.stdin, termios.TCSADRAIN, settings)
```