import serial

check = True

package = []

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#====================================== THIS PROGRAM IS FOR UART COMMUNICATION WITH DSPIC33FJ64MC802 ============================================

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#====================================== This is lnwModule's PACKAGE ============================================

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# HEAD | COMMAND | POSx\_MSB | POSx\_LSB | POSy\_MSB | POSy\_LSB | POSz\_MSB | POSz\_LSB | Degree | Grip | CHECKSUM |

# 0xFF | 1 Byte | 2 Byte for int | 2 Byte for int | 2 Byte for int | 1 Byte | 1 Byte | Checksum = (SUMMATION OF PACKAGE)%256 |

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# FUNCTION IN THIS PROGRAM

# 1. InitUART >> Init about UART sth like baudrate, port ,parity bit, brah brah...

# 2. Acknowledge >> Wait for dspic33fj64mc802 response to PC that have a little package

# HEAD | ACK | CHECKSUM |

# 0xFF | 0x69 | Checksum = (SUMMATION OF PACKAGE)/256 |

# 3. Sethome >> set position of X,Y,Z Axis to (0,0,0)

# 4. Go to pos >> go to position that you want to go

# 5. Rotate >> rotate Axis of Gripper

# 6. Grip >> Pick or Place the object in the mission

#====================================== Good Luck Have Fun ============================================

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def lnwmodule\_initUART():

lnwmodule = serial.Serial()

lnwmodule.baudrate = 19200

lnwmodule.port = 'COM4'

#Pairing with dspic33fj64mc802

# HEAD | PAIR | POSx\_MSB | POSx\_LSB | POSy\_MSB | POSy\_LSB | POSz\_MSB | POSz\_LSB | Degree | Grip | CHECKSUM |

# 0xFF | 0x96 | 0x00 | 0x00 | 0x00 | 0x00 | 0x00 | 0x00 | 0x00 | 0x00 | Checksum = (SUMMATION OF PACKAGE)/256 |

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# package = [255,150,0 0,0,0,0,0,0,0,0]

# package[-1] = sum(package)%256

# while(check):

# lnwmodule.write(package)

# lnwmodule\_acknowledge()

def lnwmodule\_acknowledge():

arr = []

arr = lnwmodule.read(3)

print(arr)

if(arr[0] == 255):

if(arr[1] == 105):

if(arr[2] == 104):

print(arr)

check = False

else:

arr = []

else:

arr = []

else:

arr = []

def lnwmodule\_sethome():

package = [255,1,0,0,0,0,0,0,0,0,0]

print(package)

package[-1] = sum(package)%256

lnwmodule.write(package)

def lnwmodule\_go2pos(PosX, PosY, PosZ):

package = [255,2,0,0,0,0,0,0,0,0,0]

if(PosX == 0 or PosY == 0 or PosZ ==0):

package[2] = 0

package[3] = 0

package[4] = 0

package[5] = 0

package[6] = 0

package[7] = 0

else:

posX\_MSB = int(PosX >> 8)

posX\_LSB = int(PosX % 256 )

posY\_MSB = int(PosY >> 8)

posY\_LSB = int(PosY % 256)

posZ\_MSB = int(PosZ >> 8)

posZ\_LSB = int(PosZ % 256)

package[2] = posX\_MSB

package[3] = posX\_LSB

package[4] = posY\_MSB

package[5] = posY\_LSB

package[6] = posZ\_MSB

package[7] = posZ\_LSB

package[-1] = sum(package)%256

lnwmodule.write(package)

def lnwmodule\_rotate(Degree):

package = [255,3,0,0,0,0,0,0,0,0,0]

package[8] = int(Degree)

package[-1] = sum(package)%256

lnwmodule.write(package)

def lnwmodule\_grip(grip):

package = [255,4,0,0,0,0,0,0,0,0,0]

package[9] = grip

package[-1] = sum(package)%256

lnwmodule.write(package)

def lnwmodule\_done():

done = []

done = lnwmodule.read(11)

num = 0

state = 0

for i in range(len(package)):

if(package[i] == done[i]):

num += 1

if(num == 11):

state = 1

return state

buf = []

lnwmodule = serial.Serial()

lnwmodule.baudrate = 19200

lnwmodule.port = 'COM4'

lnwmodule.rts = 0

lnwmodule.open()

for i in range(100):

lnwmodule\_sethome()

while(lnwmodule.in\_waiting):

pass

lnwmodule\_acknowledge()

print("finish")