TDPS2017

Team Design Project (for Meepo Uestc, Uog)

Arduino - Raspberry pi serial port command interpretation

- Start sign - 1 byte - the byte indicating the function of the following data pack.
- Data pack - 1~n byte - notice: no 0x00 in data pack.
- End sign - 1 byte - it should always be 0x00.

Example: 0x01(start motor sign) 0x01 0xff 0x01 0xff(data pack: dir pwm dir pwm) 0x00(end sign)
Totally 6 bytes.

In Arduino client, you must write a class inheriting from CommandResult class when interpreting the received pack. Which is as follow:

```
class CommandResult
{
public:
    enum ResultState
    {
        MotorResultState = 0
    };
    CommandResult(bool argIsData);
    ~CommandResult();
    ResultState CurrentResult;
    bool isData;
};

class MotorResult : public CommandResult
{
public:
    MotorResult(Direction argMotorDirection1, byte argMotorSpeed1, Direction argMotorDirection2, byte argMotorSpeed2);
    int motorSpeed1;
    int motorSpeed2;
    Direction motorDirection1;
    Direction motorDirection2;
};
```

Another important notice is that in C++, you must inherit the construct function from parents class, such as below:

```
MotorResult::MotorResult(Direction argMotorDirection1, byte argMotorSpeed1, Direction argMotorDirection2, byte argMotorSpeed2) : CommandRe
{
    CurrentResult = ResultState::MotorResultState;
    motorDirection1 = argMotorDirection1;
    motorDirection2 = argMotorDirection2;
    motorSpeed1 = argMotorSpeed1;
    motorSpeed2 = argMotorSpeed2;
}
```

Raspberry pi and desktop application

UDP socket in desktop: port-15000 -> 255.255.255.255:15878 TCP socket in desktop: server port-15879 TCP socket in raspberry pi: client port -> remain unknown (it is determined by python code)

UDP pack: Server#(local ip V4 Address)#(server port)#(\newline)
example: Server#192.168.1.100#15879#(\newline)

TCP的详细内容过于复杂，这里不做记载。如果需要请自行联系我。