**1.platform application architecture**

client | server

**2.network communication**

①layer:interface network transport application

②protocol:mac ip tcp/udp http

③packet:mac frame(mac) ip packet(ip) tcp/udp packet(port) http packet

**3.source code/program structure**

①API/driver/runtime:underlying function/class

②library/package/module/framework/engine:base function/class

③declaration&implementation:specific function/class

④***flow***:entry function/class

**4.platform language**

c/c++ java c# **perl** **python**

**5.language framework**

①data type:void numeric boolean character

②operators-expression

③flow control:select statement loop statement

④preprocessor/exception

⑤constant variable reference pointer array(string)

⑥function

⑦class-object

**6.language API**

*gui/event(message)/handler* graphic file database *threading/forking/asynchronous I/O*

network

**7.gui class**

window:menu toolbar statusbar

dialog:control