CH4_001

SERVER QUERIES

1 Setting Up

Finished Code:

```
function initClientQuerySettings()
{
    $Client::LanPortQuery    = 28000;
    $Client::FlagsQuery      = 0;
    $Client::GameTypeQuery   = "FPS Starter Kit";
    $Client::MissionTypeQuery = "ANY";
    $Client::MinPlayersQuery = 0;
    $Client::MaxPlayersQuery = 100;
    $Client::MaxBotsQuery    = 0;
    $Client::RegionMaskQuery = 2;
    $Client::MaxPingQuery    = 0;
    $Client::MinCPUQuery     = 100;
    $Client::FilterFlagsQuery = 0;
}


function dumpClientQuerySettings()
{
    echo("$Client::LanPortQuery     == ", $Client::LanPortQuery);
    echo("$Client::FlagsQuery       == ", $Client::FlagsQuery);
    echo("$Client::GameTypeQuery    == ", $Client::GameTypeQuery);
    echo("$Client::MissionTypeQuery == ", $Client::MissionTypeQuery);
    echo("$Client::MinPlayersQuery  == ", $Client::MinPlayersQuery);
    echo("$Client::MaxPlayersQuery  == ", $Client::MaxPlayersQuery);
    echo("$Client::MaxBotsQuery     == ", $Client::MaxBotsQuery);
    echo("$Client::RegionMaskQuery  == ", $Client::RegionMaskQuery);
    echo("$Client::MaxPingQuery     == ", $Client::MaxPingQuery);
    echo("$Client::MinCPUQuery      == ", $Client::MinCPUQuery);
    echo("$Client::FilterFlagsQuery == ", $Client::FilterFlagsQuery);
}
```

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```
function dumpServerSettings()
{
    echo("$Server::Status            == ", $Server::Status );
    echo("$Pref::Server::Name        == ", $Pref::Server::Name );
    echo("$Server::GameType          == ", $Server::GameType );
    echo("$Server::MissionName       == ", $Server::MissionName );
    echo("$Server::MissionType       == ", $Server::MissionType );
    echo("$Pref::Server::Info        == ", $Pref::Server::Info );
    echo("$Pref::Server::MaxPlayers  == ", $Pref::Server::MaxPlayers );
    echo("$Server::Dedicated         == ", $Server::Dedicated );
    echo("$Pref::Server::Password    == ", $Pref::Server::Password );
    echo("$Pref::Net::DisplayOnMaster == ", $Pref::Net::DisplayOnMaster );
}


onServerInfoQuery()
function onServerInfoQuery()
{
    return $ServerInfo::Status;
}
```

Testing Your Functions:

```
==>initClientQuerySettings();
==>dumpClientQuerySettings();
$Client::LanPortQuery     == 28000
$Client::FlagsQuery       == 0
$Client::GameTypeQuery    == FPS Starter Kit
$Client::MissionTypeQuery == ANY
$Client::MinPlayersQuery  == 0
$Client::MaxPlayersQuery  == 100
$Client::MaxBotsQuery     == 0
$Client::RegionMaskQuery  == 2
$Client::MaxPingQuery     == 0
$Client::MinCPUQuery      == 100
$Client::FilterFlagsQuery == 0
```

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```
==>$Client::GameTypeQuery = "My awesome game";
==>$Client::MaxPlayersQuery = 9999;
==>dumpClientQuerySettings();
$Client::GameTypeQuery = "My awesome game";
$Client::LanPortQuery     == 28000
$Client::FlagsQuery       == 0
$Client::GameTypeQuery     == My awesome game
$Client::MissionTypeQuery == ANY
$Client::MinPlayersQuery  == 0
$Client::MaxPlayersQuery   == 9999
$Client::MaxBotsQuery     == 0
$Client::RegionMaskQuery  == 2
$Client::MaxPingQuery     == 0
$Client::MinCPUQuery      == 100
$Client::FilterFlagsQuery == 0


==>dumpServerSettings();
$Server::Status           == OK
$Pref::Server::Name        == GPGT Volume 2 exercise Server
$Server::GameType          == FPS Starter Kit
$Server::MissionName       ==
$Server::MissionType       == Exercise
$Pref::Server::Info        == This is an fps starter kit test server.
$Pref::Server::MaxPlayers  == 64
$Server::Dedicated         == 0
$Pref::Server::Password    ==
$Pref::Net::DisplayOnMaster ==
```

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Next, try modifying some settings and dumping them.

```
==>$Server::Status = "Working fine";
==>$Server::Name = "My super server";
==>$Pref::Server::Info = "Home of a future AAA game.";
==>dumpServerSettings();
$Server::Status = "Working fine";
$Server::Status             == Working fine
$Pref::Server::Name         == GPGT Volume 2 exercise Server
$Server::GameType           == FPS Starter Kit
$Server::MissionName        ==
$Server::MissionType        == Exercise
$Pref::Server::Info         == Home of a future AAA game.
$Pref::Server::MaxPlayers   == 64
$Server::Dedicated          == 0
$Pref::Server::Password     ==
$Pref::Net::DisplayOnMaster ==
```

2 LAN Server Queries

Finished Code:

```
function doLanServersQuery()
{
   queryLANServers(
      $Client::LanPortQuery,      // lanPort for local queries
      $Client::FlagsQuery,        // Query flags
      $Client::GameTypeQuery,     // gameTypes
      $Client::MissionTypeQuery,  // missionType
      $Client::MinPlayersQuery,   // minPlayers
      $Client::MaxPlayersQuery,   // maxPlayers
      $Client::MaxBotsQuery,      // maxBots
      $Client::RegionMaskQuery,   // regionMask
      $Client::MaxPingQuery,      // maxPing
      $Client::MinCPUQuery,       // minCPU
      $Client::FilterFlagsQuery   // filterFlags
      );
}
```

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```
function dumpServerInfoData()
{
   // Find out how many servers were found.
   %count = getServerCount();

   echo("Found ", %count , " servers." );

   // Print out all of the server data we discovered
   for (%i = 0; %i < %count; %i++) {
      echo("Server # ", %i );

      echo("$ServerInfo::Status      == ", $ServerInfo::Status );
      echo("$ServerInfo::Address     == ", $ServerInfo::Address );
      echo("$ServerInfo::Name        == ", $ServerInfo::Name );
      echo("$ServerInfo::GameType    == ", $ServerInfo::GameType );
      echo("$ServerInfo::MissionName == ", $ServerInfo::MissionName );
      echo("$ServerInfo::MissionType == ", $ServerInfo::MissionType );

      // BEGIN BONUS
      // Build a state string from the state bitmask
      // Status_Linux     = BIT(2),
      // Status_New       = 0,
      // Status_Querying  = BIT(28)
      // Status_Updating  = BIT(29)
      // Status_Responded = BIT(30)
      // Status_TimedOut  = BIT(31)
      if( 0 == $ServerInfo::State )
      {
         %state = "NEW";
      }
      else
      {
         %state = " ";

         if( (1 << 2)  & $ServerInfo::State) %state =
            %state SPC "Linux; ";
         if( (1 << 28) & $ServerInfo::State) %state =
            %state SPC "Querying; ";
         if( (1 << 29) & $ServerInfo::State) %state =
            %state SPC "Updating; ";
```

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```
            if( (1 << 30) & $ServerInfo::State) %state =
                %state SPC "Responded; ";
            if( (1 << 31) & $ServerInfo::State) %state =
                %state SPC "Timed Out; ";
        }
        // END BONUS

        echo("$ServerInfo::State         == ", $ServerInfo::State SPC
            %state);

        echo("$ServerInfo::Info          == ", $ServerInfo::Info );
        echo("$ServerInfo::PlayerCount   == ", $ServerInfo::PlayerCount );
        echo("$ServerInfo::MaxPlayers    == ", $ServerInfo::MaxPlayers );
        echo("$ServerInfo::BotCount      == ", $ServerInfo::BotCount );
        echo("$ServerInfo::Version       == ", $ServerInfo::Version );
        echo("$ServerInfo::Ping          == ", $ServerInfo::Ping );
        echo("$ServerInfo::CPUSpeed      == ", $ServerInfo::CPUSpeed );
        echo("$ServerInfo::Favorite      == ", $ServerInfo::Favorite );
        echo("$ServerInfo::Dedicated     == ", $ServerInfo::Dedicated );
        echo("$ServerInfo::Password      == ", $ServerInfo::Password );
    }
}
};
```

Testing Your Functions:

(Without "Host Multiplayer" selected)

```
==>doLanServersQuery();
ServerQuery:  start Querying LAN servers 0
LAN server ping: IP:Broadcast:28000...
ServerQuery:  query Querying servers: 0 left... 0.5
ServerQuery:  done No servers found. 1

==>dumpServerInfoData();
Found 0 servers.
```

SERVER QUERIES

(With "Host Multiplayer" selected)

```
==>doLanServersQuery();
ServerQuery:  start Querying LAN servers 0
LAN server ping: IP:Broadcast:28000...
Pinging Server IP:192.168.123.2:28000 (3)...
ServerQuery:  ping Waiting for lan servers... 0.5
ServerQuery:  query Querying servers: 1 left... 0.5
Querying Server IP:192.168.123.2:28000 (3)...
ServerQuery:  query Querying servers: 0 left... 1
ServerQuery:  done One server found. 1


==>dumpServerInfoData();
Found 1 servers.
Server # 0
$ServerInfo::Status       == 1073741824
$ServerInfo::Address      == IP:192.168.123.2:28000
$ServerInfo::Name         == GPGT Volume 2 exercise S
$ServerInfo::GameType     == FPS Starter Kit
$ServerInfo::MissionName  ==
$ServerInfo::MissionType  == Exercise
$ServerInfo::State        ==  NEW
$ServerInfo::Info         == Home of a future AAA game.
$ServerInfo::PlayerCount  == 1
$ServerInfo::MaxPlayers   == 64
$ServerInfo::BotCount     == 0
$ServerInfo::Version      == 1520
$ServerInfo::Ping         == 28
$ServerInfo::CPUSpeed     == 3350
$ServerInfo::Favorite     == 0
$ServerInfo::Dedicated    == 0
$ServerInfo::Password     == 0
```

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3 Set Up Master Servers List

Finished Code:

(Your IP may be different from mine.)

```
$pref::Master[0] = "2:master.garagegames.com:28002";
$pref::Master[1] = "2:192.168.123.3:28002";


function dumpMasterServersList()
{
   for( %count = 0; %count < 5; %count++ )
   {
      echo("$pref::Master[", %count, "] == ", $pref::Master[%count]);
   }
}
```

Testing Your Changes:

```
==>dumpMasterServersList();
$pref::Master[0] == 2:master.garagegames.com:28002
$pref::Master[1] == 2:192.168.123.3:28002
$pref::Master[2] ==
$pref::Master[3] ==
$pref::Master[4] ==
```

4 Running a Master Server

No questions/answers for this section.

5 Master Servers Query

Finished Code:

```
function doMasterServersQuery()
{
   queryMasterServer(
       $Client::FlagsQuery,         // Query flags
       $Client::GameTypeQuery,      // gameTypes
       $Client::MissionTypeQuery,   // missionType
       $Client::MinPlayersQuery,    // minPlayers
       $Client::MaxPlayersQuery,    // maxPlayers
       $Client::MaxBotsQuery,       // maxBots
       $Client::RegionMaskQuery,    // regionMask
       $Client::MaxPingQuery,       // maxPing
       $Client::MinCPUQuery,        // minCPU
       $Client::FilterFlagsQuery    // filterFlags
       );
}
```

Testing Your Function:

```
==>doLanServersQuery();
ServerQuery:  start Querying LAN servers 0
LAN server ping: IP:Broadcast:28000...
Pinging Server IP:192.168.123.2:28000 (3)...
ServerQuery:  ping Waiting for lan servers... 0.5
ServerQuery:  query Querying servers: 1 left... 0.5
Querying Server IP:192.168.123.2:28000 (3)...
ServerQuery:  query Querying servers: 0 left... 1
ServerQuery:  done One server found. 1
```

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```
==>dumpServerInfoData();
Found 1 servers.
Server # 0
$ServerInfo::Status        == 1073741824
$ServerInfo::Address       == IP:192.168.123.2:28000
$ServerInfo::Name          == GPGT Volume 2 exercise S
$ServerInfo::GameType      == FPS Starter Kit
$ServerInfo::MissionName   ==
$ServerInfo::MissionType   == Exercise
$ServerInfo::State         ==  NEW
$ServerInfo::Info          == Home of a future AAA game.
$ServerInfo::PlayerCount   == 1
$ServerInfo::MaxPlayers    == 64
$ServerInfo::BotCount      == 0
$ServerInfo::Version       == 1520
$ServerInfo::Ping          == 28
$ServerInfo::CPUSpeed      == 3350
$ServerInfo::Favorite      == 0
$ServerInfo::Dedicated     == 0
$ServerInfo::Password      == 0
Received info request from a master server [IP:69.64.50.217:28002].


==>dumpMasterServersList();
$pref::Master[0] == 2:master.garagegames.com:28002
$pref::Master[1] == 2:192.168.123.3:28002
$pref::Master[2] ==
$pref::Master[3] ==
$pref::Master[4] ==
Received info request from a master server [IP:69.64.50.217:28002].
Received info request from a master server [IP:69.64.50.217:28002].
Received info request from a master server [IP:69.64.50.217:28002].
```