Description

ActionScriptLibrary module : Has the functionality of the basic 4 actions (select window, move mouse, click mouse, send text)

Client module : Connects to server, after successfully connection, requests the ActionScriptLibrary assembly data and create an instance of the ActionScript in runtime. If 'RunImmediately' is enabled, request from the server to invoke one by one the preconfigured actions. Waits the server to invoke an action and send back the result (success/fail).

Server module : When a client is connected and request the ActionScript the server loads the dll that is configured in the config and give it to the client. If the client requests for the preconfigured actions then server invoke one by one this actions to caller. Also waits for user input to invoke client action.

Configuration

Server

```
<moduleSettings>
  <endpoint>http://localhost:8088/</endpoint>
  <name>Server</name>
</moduleSettings>

<actionScriptSettings>
  <path>{{path}}\\ActionsScriptLibrary.dll</path>
  <namespace>ActionsScriptLibrary.ActionScript</namespace>
  <delayBeforeAction>4000</delayBeforeAction>
  <actions>
    <action>
      <method>SelectWindow</method>
      <params>
        <param>Viber</param>
      </params>
    </action>
  </actions>
</actionScriptSettings>
```

Defines endpoint and some preconfigured actions. Also has the path for the ActionScript.dll.

Client

```
<moduleSettings>
  <endpoint>http://localhost:8088/</endpoint>
  <name>Client</name>
</moduleSettings>

<actionScriptSettings>
  <runImmediately>false</runImmediately>
</actionScriptSettings>
```
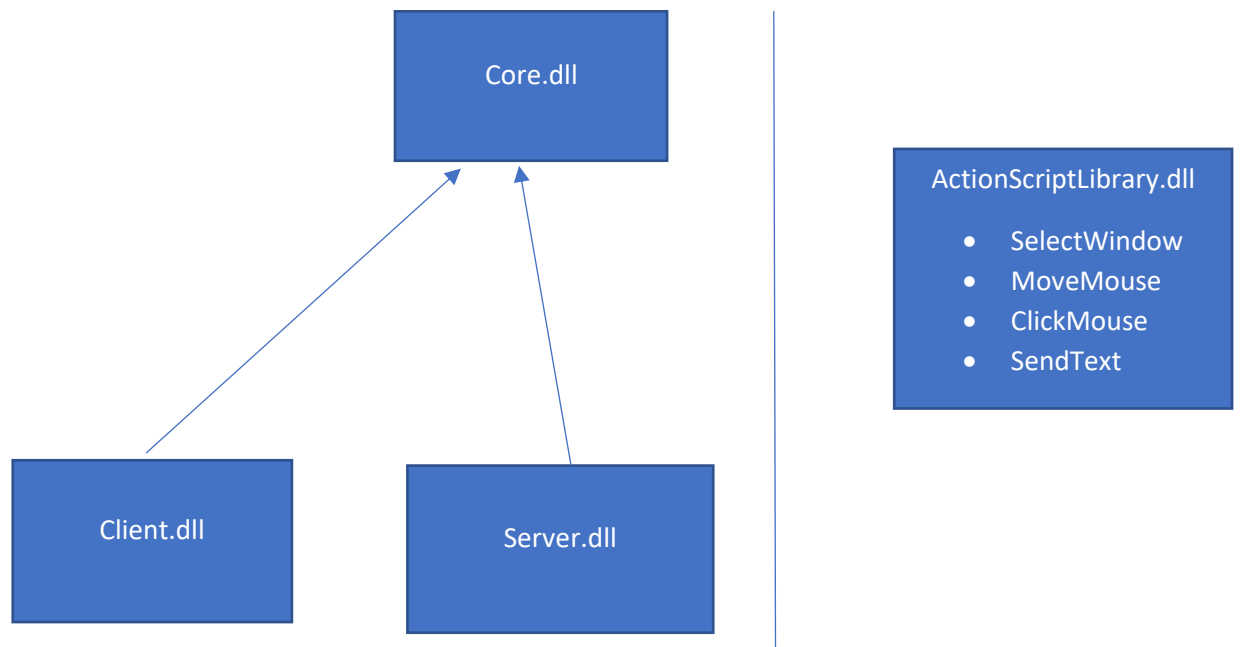
Defines endpoint and the condition to request the preconfigured actions from the server.

Solution Structure

- Solution
  - ActionScriptLibrary
  - Client
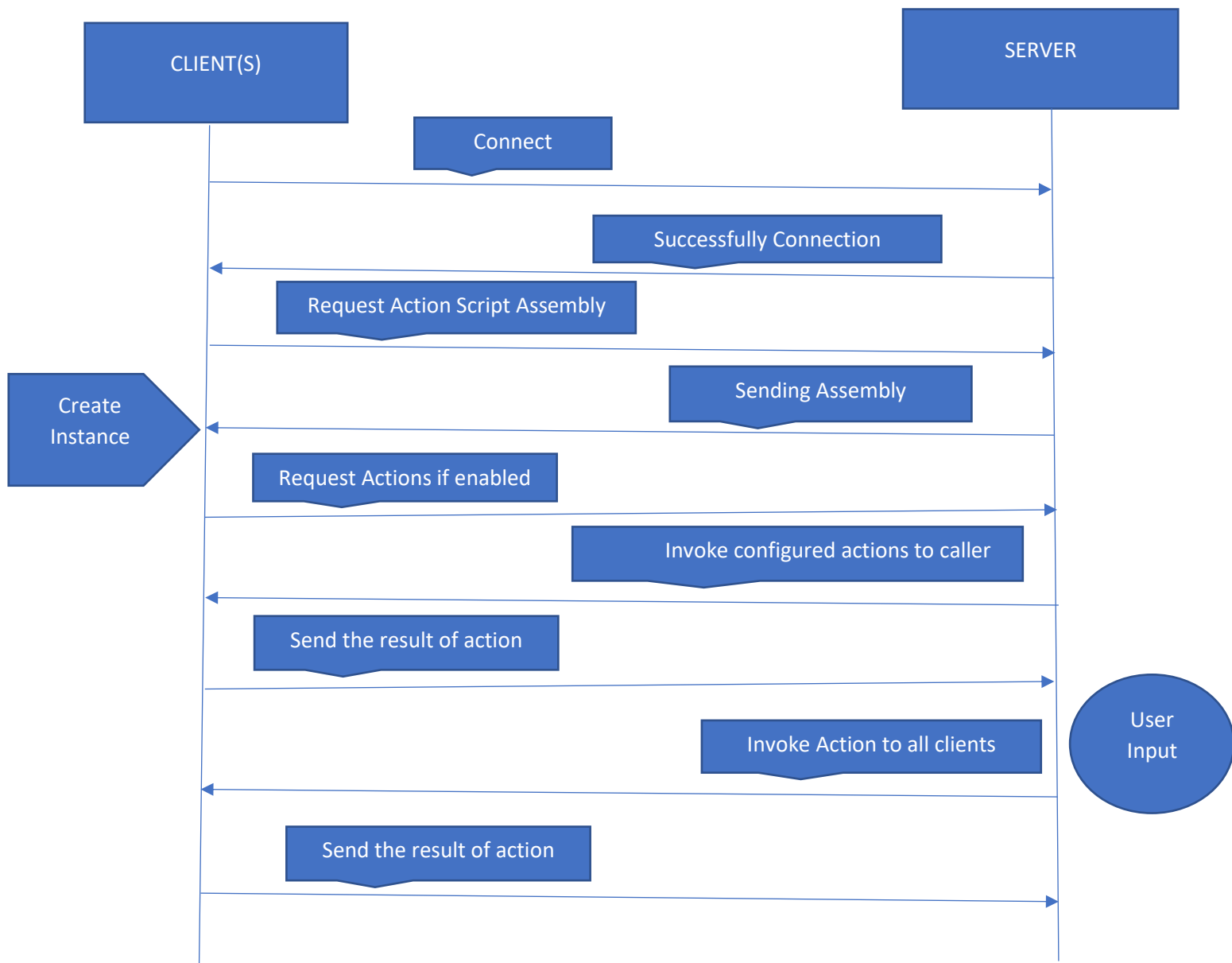 - Core
  - Server
  - UnitTests

Architecture

Technologies (Third-Party libraries)

SignalR, Log4net, SimpleConfig

WorkFlow

CLIENT(S)

SERVER

Connect

Successfully Connection

Request Action Script Assembly

Sending Assembly

Create Instance

Request Actions if enabled

Invoke configured actions to caller

Send the result of action

User Input

Invoke Action to all clients

Send the result of action

- **Server**
  - Open a communication channel
  - Wait for client(s) to connect
  - Send assembly data after request
  - Invoke preconfigured actions to client after request
  - Wait user input and invoke action to all connected clients
- **Client**
  - Connect to server
  - After successfully connection request action script assembly data
  - Get the assembly and create instance
  - Request servers preconfigured actions if enabled
  - Executes action when requested from server
  - Informs the server about action result

Commands Format

- SelectWindow Chrome
- MoveMouse -500 500
- ClickMouse
- SendText text

If the command doesn't exist, or the number and the type of parameters is invalid, the server will log that the client failed with the reason.

*ClickMouse action when the cursor is over GUI will cause confusion

Notes

You can provide your assembly just by changing the ActionScriptSettings.Path from the config file and the Namespace. Then, typing your method with the parameters the client will execute this command. Note that the client and the server needs restart to loads new ActionScript assembly. Also only system.types for the parameters are acceptable and any reference in other dll will cause exception. The client can load only one assembly in runtime. The option RunImmediately exists only for testing purposes and by default is false. The server will log the preconfigured actions and waits for the command in above format to execute. When user request a command this command will executed in all connected clients, but when a client request RunImmediately configured actions this actions will executed only in caller. Pressing Exit will both client and server will close normally.

Server and Client are set as Start Up Projects, but need to build all solution before start in order to create ActionScriptLibrary.dll because no one project has reference on this.