Setup WishBalloons

Conventions

client
: The control circuits located inside the balloons meant to display colors and signal movements.

server
: The laptop where the HTTP server located and executed to orchestrate the animations.

router
: The router is the device which provides the network via WiFi to the clients and via UTP wire to the server.

feedback code
: Series of color flashes made by the clients to notify the user for their state. All feedback starts and ends with two short blinks of the same color.

white	status
green	okay
yellow	warning
red	error

Between these blinks there are several longer flashes depending the message. The messages are roughly grouped into categories, indicated by the first longer flash.

red	sensor
yellow	leds/pixels
green	detection
cyan	connection
blue	registration of clients
magenta	movement

For more details check the list below.

Feedback codes

IDLE 

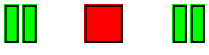
Unused. Only for debugging.

BEFORE_DETECT 

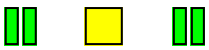
Before detecting the rest position of the client.

AFTER_DETECT 

After detecting the rest position of the client.

SENSOR_OK 

After initializing the accelerometer sensor.

PIXELS_OK 

After initializing the two leds on the clients.

CONNECTION_OK 

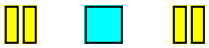
When successfully connected to the WiFi network.

REGISTRATION_OK 

When successfully with the server.

DURING_DETECT 

During detecting the rest position of the client.

CONNECTION_WAITING 

During waiting for WiFi connection.

SENSOR_INIT_ERROR 

When there are some error with the sensor initialization.

SENSOR_ERROR 

When there are some general error with the sensor.

CONNECTION_ERROR 

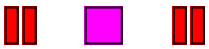
When the client are unable to connect to the WiFi network.

CONNECTION_LOST 

When WiFi network connection lost (router are inactive).

REGISTRATION_ERROR 

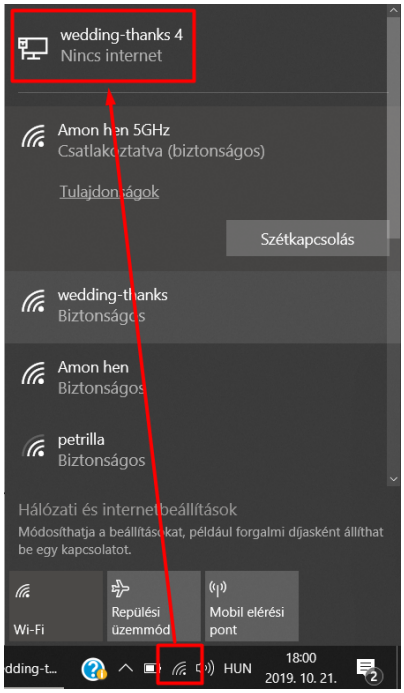
When the client can not register with the server.

MOVEMENT_ERROR 

When the client can not send movement data to the server.

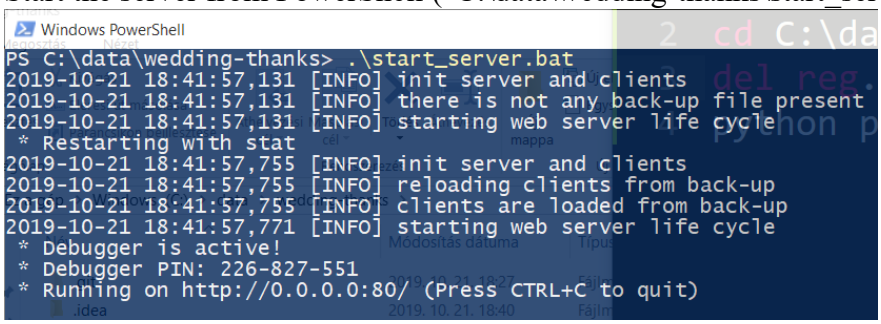
Initial Steps

1. Turn on the router by plug it into the electrical grid.
   Does wedding-thanks WiFi network available?
   Restart the router!
2. Connect the laptop via UTP cable to the router (slot#1).
3. Turn on the laptop and login into Windows (use the pin code).
   Is laptop connected to the network?



Is laptop ip address is 192.168.1.2 (on the wire network)?
Reconnect to the network!

4. Start the server from PowerShell ("C:\data\wedding-thanks\start_server.bat").



http:\\127.0.0.1 displays "Hello World" on the laptop?
http:\\192.168.1.2 displays "Hello World" on the laptop?
Restart the server!
http:\\192.168.1.2 displays "Hello World" on other device connected to wedding-thanks WiFi network?
Check network connection to the router!

5. For each client in a round-about order, starting from an arbitrary client, do the following.

    1. Turn on the client using the mechanical switch at the bottom of the balloon above the basket.
    Is the client showing various feedback codes?
    Restart the client!

    2. Do not move (shake/jig) the client while it is measuring the rest position.
    You have approximately 10 seconds to ensure the client is in rest (10 times the BEFORE_DETECT feedback).
    It take approximately 10 seconds to measure the rest position (10 time the DURING_DETECT feedback).
    There is a broken client which has no accelerometer, so it skips the rest position measuring.

    3. Wait until the client is registered with the server:
    `f"successful registration: {address} ({clients.index(address)}th client)"`
    The server will notify you high happy tones (1000 Hz and 3000 Hz) when it happened and the client stop displaying any feedback code.

Do the clients restarts several times or it stuck with a feedback code of severity error?
You are able to test each client in sequence on http://127.0.0.1/demo or http://192.168.1.2/demo?
Turn off all clients then restart the server and start again!

6. Push a client (gently).
Do the clients show some animation?

Does the server notice the movement?
`f"the {index}th client is registered a movement"`
Turn of everything and repeat the whole process!
After the server notice a movement it would not accept any new movement for 20 seconds. You could check the remaining time in the server log messages.

7. Send a wish or message via http://192.168.1.2/wish from an other device on wedding-thanks WiFi network.
Clients display the requested animation?
Does your message visible in the list on the webpage?
Turn of everything and repeat the whole process!