**R shiny transmission chain guide**

This document aims to provide a step-by-step guide to setting up the R shiny survey app and collecting data in person, using multiple devices.

**Step 1: Set up local server.**

Your own computer can be set up to act as a ‘local server’. This means that you will be able to store data locally on your own SQL database. Rather than just storing to a local excel sheet, this means that other devices can access your local server as well, simultaneously.

Download WAMP <(https://www.wampserver.com/en/>) and follow the set up instructions. Once it’s downloaded search it and run it on your device. Once its running correctly a little green ‘W’ symbol should appear in the bottom right of your laptop.

**Step 2: SQL server set up.**

Click on the WAMP logo in the bottom right and then select and launch php my admin. This should open a new window with a login screen. The user should read ‘root’ and the password blank. Don’t change any of this, just press login. This will take you to your SQL database, where you can create multiple databases, with individual tables, as well as write SQL queries to pull specific types of data.

For now you will just need to create a new database and then the two tables that we will use; one to access the texts and one to store the data in. The text files sheet can be uploaded directly from an excel sheet. For the ‘maindata’ table you can either create this directly on SQL, making sure the column names match those in the code, or upload a blank excel sheet with the same column names used in the original pilot. Either way, make sure that there is an ID column that is the default integer that will increase as every record is added and also make sure that the other columns are set to deal with the ‘varchar’ type of data, with a high character limit.

**Step 3: R code**

Open the R code for the app, preferably in the ‘.app’ format. First load the required packages and set up the connection to the SQL database you have made. Remember to change the name of the database to the name you have chosen. Next run the code that makes the connection to the specific text and data tables you have made, setting the names to the ones you created. Then run the css code that sets how the site will appear.

To start running the app you first need to run the UI part of the code. This is the user interface and sets out the ‘physical’ parts of the survey that will appear to the participants. For example, the tab panel function splits up the content into different tabs or pages. The code sets out the content of each page, including which questions will appear and the text explaining them.

Running the ‘Server’ part of the code sets out the functionality of the survey. This establishes how users move between the different pages, where the data is stored within your data table and other parts such as generating the unique session ID.

To just run the app on your own computer, use the line “shinyApp(ui, server)”.

**Step 4: accessing the app from other computers**

To access the server and app from another device, first your computer needs to be connected to a private wifi. This could be a mobile phone hotspot or a private wifi router, but doesn’t work from public wifi or eduroam. On the internet settings on your computer, right click on the network you are connected to and then press view properties. Note down the “IPv4 Address” and use that to replace host number in the following part of the code. The port can be set to 7775 or another 4 digit number you’d like.

options(shiny.host = "10.188.168.100")

options(shiny.port = 7775)

Next you will need to disable the firewall on your computer. You can also try allowing traffic for the particular port you are hosting on (e.g. 7775) but that didn’t work for me.

Then hopefully any other device that is connected to the same wifi should be able to view and complete the survey by simply directing them to a link like the one below. You can generate your link by using the IP address and then the port number.

<http://10.188.168.100:7775>

Other devices that are connected to the same wifi should be able to access and complete the survey by just using the link.

**Step 5: in practice**

To recap, if carrying out the survey in person, follow the following steps.

* Set-up your wifi router
* Connect your host laptop to this router
* Ensure your laptop is running its local WAMP server
* Copy the IP address from the wifi and replace it in the appropriate place in your R code.
* Run your app, it should be hosted on this IP address.
* Set up your other computers and connect them to the same wifi
* Connect to your survey from the other computers using the IP address and the port number (e.g. a link like this <http://10.188.168.100:7775>).
* Allow participants to complete the survey
* **IMPORTANT**: After one person has completed the survey, do not just reload the page, as the previous answers will still be there. Instead open a new tab and go to the link again, this bypasses this issue.