

# Requirements Document

[2IS70] App Development

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# Yoke

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# Target user group

The Yoke macro tile application which allows the users to remotely control their desktop programs in a paired connection will have the following target user groups:

The main target user group will be the average person. They will use this application just for fun or to aid them with their daily use of their desktop applications. They will probably not use all functionalities the application can provide them. The main reason for this will be that every user is one of a kind and has different preferences than for example another user.

As we have come to the part that every user is different, the app will support different kind of user groups (e.g. a streamer user). This group will have other demands than the average person. They want fast access to their stream applications, keyboard shortcuts and multimedia buttons. Therefore it is important that the application can handle all different kinds of user groups. But the app can serve more types of users than those, also for example gamers or social media users.

# Problem description

Yoke is based on the already existing StreamDeck device. This device costs a lot of money and only provides a few buttons to use at once. You are only allowed to set five to twenty buttons for your own use. If you do want to use more, you would have to remap some existing buttons, which loses functionality. A lot of users have the following complaints about the design:

1. The StreamDeck has a price range between 100 and 200 euros. This is for most people too much money to spend on such a device. Therefore Yoke will be free so that it is accessible for all kinds of people.
2. Another complaint from people is that the deck must be connected via a USB-connection. Therefore Yoke will be primarily connected via a Bluetooth connection and, if time permits, also via a Wi-Fi and a USB-connection.
3. It takes too much time to set all the buttons and it is way too hard to set the buttons of the StreamDeck. Therefore Yoke's User Interface will be simple, with only highly necessary buttons to make it as easy as possible for user to navigate and use the app. Configuring your buttons via Yoke can be done with just a couple mouse-clicks.

4. The StreamDeck is mainly focused on streamers, which is just a small part of all possible users. Therefore, as mentioned before, Yoke will support multiple user groups to allow anyone with a computer to use the app.
5. The number of buttons is too limited. Only have five to twenty buttons are able to be made and used. Therefore Yoke will provide preset buttons and allow anyone to create as many buttons as they like.

Similar apps have already been made, but do not have the same level of customization that Yoke has or are missing essential parts:

1. **Deckboard** is a customizable stream deck application that supports macro generation and streaming service using OBS studio. It has a pleasant interface design which gives users a good impression. However, the free version has its limits, as the number of buttons are less than the paid pro version. Because the app is free, there are also numerous ads throughout the app. We aim to remove such limitations by allowing users to make as many buttons as possible and making the entire app ad-free.
2. **Streamlabs** is a free stream deck application, which focuses on streaming services, which means its only suitable user group is for the streamer-user. To improve over Streamlabs, Yoke will be suitable for multiple user groups, like Netflix users or Word power users. This will be achieved by allowing the user to create unlimited different profiles and presets.
3. **Macro deck** is a free app which allows the user to customize the deck completely. The phone and the pc are connected via a local Wi-Fi or USB connection. It has a number of useful features, such as limitless number of buttons, and multimedia control. However, the user interface design is quite poor and the color scheme is old-fashioned. Also, the font is somewhat rigid, the same icon is used repetitively for different tasks, and the buttons use only five different colors in the entire app. Even though we only examined it from the screenshots given in the app description, we thought it could use a general UI improvement. This is the only app we found with an English/Dutch language setting. Yoke will have a simple and distinguishable UI and have support for multiple languages, such as English, Dutch, and Bulgarian.

As shown above, there are multiple problems with already existing apps. Therefore we want to create an application that solves all these problems and will combine the best of the already existing application. We evaluated which features would be necessary to create this app. As mentioned, this application is planning to cater to a

number of user groups with different needs, so it is not feasible for each group to have every button and function available in the interface, since this would create an cluttered UI, which would counteract the actual function of the app, “to make working with your pc easier and faster”. This would also go against us catering to different user groups, since some of the buttons/functions could be superfluous for different types of users.

We want the app to be as customizable as possible, to offer users full control over their desktop applications. The app allows the user to create a macro for any desktop application and with just a single press of the button, do anything the users wants. There will be a number of presets that users can use without the need to create their own buttons, which keeps it convenient and easy to use for users that do not want to tinker with making their own buttons.

Additionally, Yoke has extra hardware functions that allow for greater ease-of-use. It can use all different kinds of hardware, like the camera, gyroscope, voice recognition, and much more. For example, a user can shake the phone to disconnect from the pc or take a picture of a profile-specific QR code. These features greatly increase the value of our app, as none of the aforementioned apps have these.

Conclusively, we decided to develop an app that would solve the problems and improve the quality of existing apps. The main goals for this app are:

1. Free
2. Customizable
3. Clear and easy UI
4. Better localization
5. Easy connection between devices
6. Additional hardware features

# Requirements

Following the MoSCoW model, we devised essential requirements for our application. **M = Must**, **C = Could**, **S = Should**, **W = Won't**

ID	Name	Description	Priority
UR01	Buttons	The application has an activity which presents several buttons to the user	M
UR01A	Button icons	The buttons in the application show icons	M
UR01B	Button sizes	The system offers functionality to make tiles take up multiple spots	C
UR02	Actions	When a button is pressed, the system will initiate the corresponding action within a second	M
UR03	Desktop application	The system has a desktop application to execute actions	M
UR03A1	Bluetooth connection	When requested, the application connects to the receiver desktop application, over bluetooth	M
UR03A2	Wifi connection	When requested, the application connects to the receiver desktop application, over local wifi	S
UR03A3	Wired connection	When requested, the application connects to the receiver desktop application, over a wired connection	S
UR03B1	Windows compatibility	The desktop application runs on Windows 10	M
UR03B2	Linux compatibility	The desktop application runs on Linux Mint 18	S
UR03B3	Mac compatibility	The desktop application shall run on OS X 10.10 and up	W
UR03C	Visibility	The desktop application shall run silently in the background	M
UR03C2	Interaction	The desktop application shall remain closable from the desktop	M
UR04	English language	The application shall provide all its texts in English	M
UR04A	Dutch language	The application provides a setting that, if changed, provides all texts in Dutch	M
UR04B	Bulgarian language	The application provides a setting that, if changed, provides all texts in Bulgarian	S
UR05	Multiple color	The application provides multiple color schemes to choose from	M

	schemes		
<i>UR05A</i>	Button colors	The color schemes affect the colors of the buttons	<b>C</b>
<i>UR05B</i>	Custom color schemes	The application should allow users to create their own color schemes to be used in the application	<b>C</b>
<i>UR06</i>	Actions	The application offers several different actions to be activated by button presses	<b>M</b>
<i>UR06A1</i>	Launching actions	The application offers actions to launch various programs including: Twitter, Youtube, Facebook, Spotify, Reddit, Gmail, Canvas, Twitch, Steam, Origin, Uplay, GOG, Battlenet, Discord, Whatsapp, OBS, Windows explorer, Windows Outlook	<b>M</b>
<i>UR06A2</i>	Multimedia actions	The application offers actions to control computer media; previous track, next track, play/pause, volume up, volume down	<b>M</b>
<i>UR06A3</i>	Computer actions	The application offers actions to control the computer; Shut down, sleep, restart, log out, enable/disable nightlight	<b>M</b>
<i>UR06A4</i>	Keyboard actions	The application offers actions that act as multiple button presses including: Ctrl+c, Ctrl+v, Alt+left, Alt+right, Ctrl+t, Ctrl+Shift+t, Ctrl+w	<b>S</b>
<i>UR06A5</i>	Application actions	The application offers actions that alter the application itself, including: Select theme [theme], Go to profile [profile]	<b>S</b>
<i>UR06A6</i>	Software actions	The application offers actions for specific computer software, such as start streaming/stop streaming for OBS	<b>C</b>
<i>UR06B</i>	Custom actions	The application offers a way of creating custom desktop actions and corresponding buttons	<b>M</b>
<i>UR06B1</i>	Custom icons	The application allows custom images or icons to be assigned to the created actions	<b>S</b>
<i>UR06B2</i>	Action repeat	The application allows user to specify how often an action should fire on activation	<b>S</b>
<i>UR07</i>	Profiles	The application offers multiple profiles for different sets of button actions	<b>M</b>
<i>UR07A1</i>	Streaming profile	The application offers a profile for streamers	<b>M</b>
<i>UR07A2</i>	Utility profile	The application offers a profile with audio controls and other utility computer functions	<b>M</b>
<i>UR07A3</i>	Launcher profile	The application offers a profile with buttons to launch various computer programs	<b>M</b>
<i>UR07B</i>	Custom	The application offers a way of creating custom profiles by	<b>M</b>

	profiles	combining buttons	
<i>UR07B1</i>	Arrangeable buttons	The application offers a way to arrange the buttons in the profile	<b>S</b>
<i>UR07C</i>	Associated profile applications	Profiles contain a list of customisable associated desktop applications	<b>M</b>
<i>UR07C1</i>	Auto profile switching	If a desktop program that is associated with a profile gets focused, the application opens the profile with which the program is associated	<b>M</b>
<i>UR07D</i>	Default computer profiles	The application stores the latest used profile on a certain computer, and re-selects it when a connection to said computer is made	<b>C</b>
<i>UR08A</i>	Desktop customisation interface	The system provides a desktop interface that allows for the creation of custom profiles and or actions	<b>C</b>
<i>UR08B</i>	Application customisation interface	The system provides an in-application interface that allows for the creation of custom profiles and or actions	<b>M</b>
<i>UR08B1</i>	Program retrieval	The application provides a way for the user to select a program on the computer for a macro	<b>M</b>
<i>UR08B2</i>	Shortcut retrieval	The application provides a way for the user to input a key combination on the computer for a macro	<b>M</b>
<i>UR09A</i>	Voice control	The buttons in the application can be activated using voice commands	<b>S</b>
<i>UR09B</i>	Shake disconnect	The application can be disconnected from the receiver program by shaking the phone	<b>M</b>
<i>UR09C</i>	Automatic startup	The receiver program automatically starts when a connection to the computer is made	<b>C</b>
<i>UR09C1</i>	Optional automatic startup	The automatic startup of the desktop application should be disableable	<b>C</b>
<i>UR10</i>	Advanced tiles	The application offers advanced tiles for different inputs	<b>C</b>
<i>UR10A</i>	Slider tile	The application offers a slider tile, for controlling things such as volume	<b>C</b>
<i>UR10B</i>	Scroll tile	The application offers a scroll tile, that acts as a mouse scroll wheel	<b>C</b>
<i>UR11A</i>	Touchpad	The application offers a touchpad activity to control the mouse	<b>S</b>

<i>UR11A1</i>	Touchpad button	The application offers a button type that when pressed goes to the touchpad activity	<b>S</b>
UR11B	Keyboard	The application offers a keyboard activity to control the keyboard	<b>C</b>
UR11B1	Keyboard button	The application offers a button type that when pressed goes to the keyboard activity	<b>C</b>
UR12A	Settings menu	The application offers an activity from which the theme and language can be changed	<b>M</b>
UR12B	Profile menu	The application offers an activity from which the selected profile can be changed	<b>M</b>
UR12C	Customisation menu	The application offers an activity from which profiles can be customised	<b>M</b>