Variable typography allows designers and programmers to fully leverage the capabilities of Responsive Web Design by modifying or animating the typeface. This study was conducted to analyse and design a dynamic variable Sinhala typeface that changes letters to letters or word to word. The research goals included using an existing typeface to use in making the transitions; analysing an existing Sinhala typeface to map out the issues of using the existing typeface; overcoming the issues identified by introducing a grid to develop a new typeface; and testing the legibility of the newly developed typeface, to generate different letter-to-letter or word-to-word animations using the developed typeface. Letter-to-letter or word-to-word variable transitions can be implemented in a web and interactive designs to enhance the engagement of the users with the corresponding digital medium. This Sinhala variable typeface can be combined with a variety of factors such as user interactions, mouse interactions, facial gestures, sound, light etc. This study shows the possibilities to create and design functioning Sinhala responsive variable typefaces with a well-founded framework, and possibilities to adapt them in any compatible systems.

“This Sinhala variable typeface can be combined with a variety of factors such as user interactions, mouse interactions, facial gestures, sound, light etc.”
PHASE 01 - USING AN EXISTING TYPEFACE TO CARRY OUT THE EXPERIMENT

A) Use and analysis of existing Sinhala typeface
In the first phase, an existing Sinhala typeface (FM Gemunu) was used to find the possibility of converting the typeface into a variable typeface. Prior to this, the anatomy of the selected typeface (FM Gemunu) analysis was carried out.

B) FM Gemunu Typeface Analysis
The research, he anatomy and historical development of Sinhala typefaces by Samarawickrama, S. S. M. R. (2016) was used to anatomically analyse each character in the FM Gemunu Typeface. The anatomical variations of letters were mapped out.

C) Method 01 - Disconnecting letters anatomically & experimenting variations
The first letter attempted to vary every part of its anatomy into the other anatomy of the subsequent letter by severing its anatomical joints.

D) Variating the letters accordance to the five-rule reference
The letters were split into their five rule writing ratios, and an attempt was made to vary the letter areas on each rule from the first letter to the following letter.
E) Due to the issues listed below, this was not successful

PHASE 02 - DEVELOPING A NEW TYPEFACE TO OVERCOME THE ISSUES

A) Letter development
In order to streamline the design process, a grid was used. Also it is simple to vary letters along the X and Y axes using a grid. To choose the readable letters, there were two rounds of legibility testing.
B) Finalised grid and the alphabet design
The below grid can fit each letter of the Sinhala alphabet and it has the five-rule reference which accommodate character’s anatomies correctly.

![Figure 11 – The finalised grid](image)

![Figure 10 – A few of the developed characters](image)

**PHASE 03 - LETTER TO LETTER ANIMATION EXPERIMENTS**

![Figure 12 - Transition animations of letter ය to ල](image)
The animations can be seen by scanning this QR code.

Figure 13 – Transition animation of words àðg,a to fydaäh

Figure 14 – Web application interface with the word transition from uq,a msgqj to .e,ðh` .e,ðh to fiajd“ fiajd to úuiSï

The animations can be seen by scanning this QR code.

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