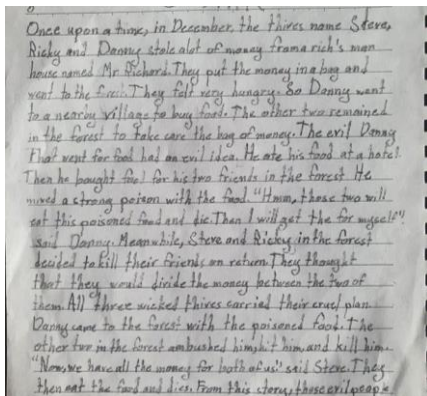# Human Computer Interaction Assignment

Designing a new font

Introduction

Typography plays a crucial role in enhancing readability and engagement, particularly for specific user groups with unique needs. This project focuses on designing a new font specifically tailored for **children aged 5 to 7 years**. The aim is to create a font that is both visually appealing and easy to read for young learners, considering their cognitive and visual development stages.

Specimens of Handwriting from Children Aged 5 to 7 Years

This specimen originates from a **7-year-old child**. Observations indicate a preference for writing characters with a slight slant and a relatively low x-height. While certain words display a cursive style with continuous characters, the majority of the text comprises words with distinctly separated characters.
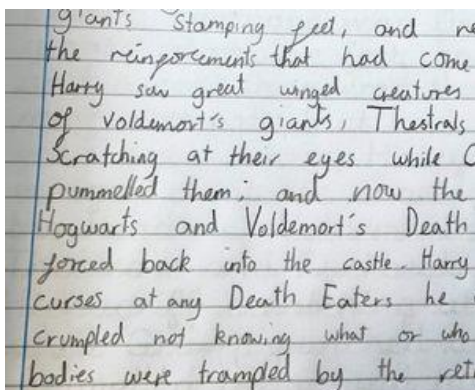
7 year old handwriting, reference

This specimen is produced by a **4-year-old child**. Analysis reveals a tendency to write characters with a slight slant, a comparatively low x-height, an increased ascender height (the distance between the mean line and the top line), and an extended descender height (the distance between the baseline and the lowest point of a character's descender). Top line, mean line, base line and bottom line refer to the nomenclature of 4 lines of allignment.
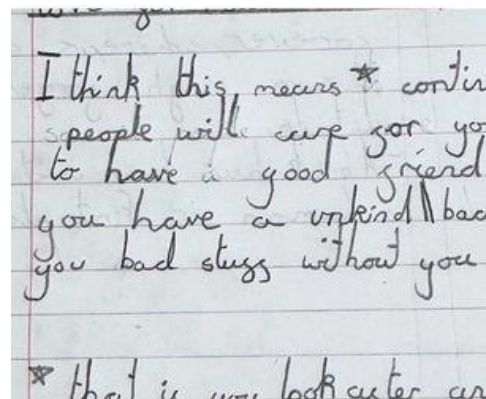
4 year old handwriting, reference

This specimen is produced by a **5-year-old child**. Observations indicate a preference of characters which are a bit slant, low x-height, less words written cursively and more words have separated characters.

5 year old handwriting, reference

Design

The idea is to design a **sans serif font** which matches with the preferences of writing styles of children, which provides a more seamless experience in readability. Certain characters can be written in multiple formats. For eg, 'a' in many typefaces is written as 'a', but children prefer to write 'ɑ'. Proposal is to use the "double-story" format "a" for such characters which aligns with cognitive development of children reinforcing their ability to identify characters consistently across different texts.

Tool used to design the font

Metaflop is a widely used platform that enables users to modify various typographic parameters to achieve specific design outcomes. This platform was utilized to develop the proposed font by adjusting key character dimensions. The following are the adjustable parameters, along with the selected values for each:

Parameter	Value	Design Decision
Unit Width	1.4/2	Children when attempt to write fast, often decrease the width of characters.
Pen Width	0.69/1	Thicker characters strokes would pose a challenge when differentiating emphasis with text.
Ascender Height	0.95/1.25	Some exhibit preference for increased ascender height in handwriting, which results in taller upward strokes on characters such as "b", "d", "h" and "k".
Descender Height	0.3/0.75	Some exhibit preference for increased descender height in handwriting, leading to elongated downward strokes on characters such as "g", "p", "q" etc.
x-height	0.62/2	The samples provided above are evident that children prefer low x-height when writing at faster pace.
Superness	0.72/1	"Superness" refers to degree of curvature provided to characters. A value of 1 would replace any character's curved strokes with straight lines. Eg, The character 'c' as 'c'.
Slanting	0.3/0.75	The samples attached above are evident that children prefer a bit slant handwriting.
Aperture	0.75/0.75	"Aperture" is important for lower-case letters as it specifies the gap between terminal strokes of characters. For eg, 0 value would close the gap entirely, making "c" resemble to"o". The value 0.75 ensures the letters remain distinct and are easily recognizable.
Corner	0.74/1.5	"Corner" specifies the flatness of corners for characters. An important parameter for upper-case characters.
Overshoot	0.12/1	"Overshoot" specifies the alignment of characters. The value "1" would vary the characters height, which would NOT be optimal for printing purposes.

Sample of proposed font

Uppercase characters	*ABCDEFGHIJKLMNOPQRSTUVWXYZ*
Lowercase characters	*abcdefghijklmnopqrstuvwxyz*
Numeric characters	*0123456789*
Other characters	*.,:;«»-+/()!?&@#%^**

Sample Text

Size	Text
12	*The quick brown fox jumps over the lazy dog.*
18	*The quick brown fox jumps over the lazy dog.*
24	*The quick brown fox jumps over the lazy dog.*

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here, content here', making it look like readable English.

Contrary to popular belief, Lorem Ipsum is not simply random text. It has roots in a piece of classical Latin literature from 45 BC, making it over 2000 years old. Richard McClintock, a Latin professor at Hampden-Sydney College in Virginia, looked up one of the more obscure Latin words, consectetur, from a Lorem Ipsum passage, and going through the cites of the word in classical literature, discovered the undoubtable source. Lorem Ipsum comes from sections 1.10.32 and 1.10.33 of "de Finibus Bonorum et Malorum" (The Extremes of Good and Evil) by Cicero, written in 45 BC. This book is a treatise on the theory of ethics, very popular during the Renaissance. The first line of Lorem Ipsum, "Lorem ipsum dolor sit amet..", comes from a line in section 1.10.32.

Comparing with Rosemary Sassoon font

Proposed font design differs from the Rosemary Sassoon font system in several key aspects, making it specifically tailored to support the cognitive development of children aged 5-7.

One notable distinction is the use of a "**double-storey**" **design for certain characters, such as 'a'.** This choice is intended to aid children in recognizing characters across different texts, as the double-storey form is more commonly encountered in educational materials, enhancing familiarity and readability.

Additionally, the design features a **slightly greater slant compared to the Sassoon font.** This adjustment aligns more closely with natural handwriting samples of children, who often write with a noticeable slant. This characteristic ensures that the font resonates with young learners' writing tendencies, making it easier for them to relate to the typeface.

Sassoon Primary font Family Sample

Furthermore, **proposed design incorporates increased ascender and descender heights, providing clearer differentiation between characters with upward and downward strokes**. This distinction supports legibility and visual clarity, which are essential for early readers.

Another key difference is the **use of a relatively low x-height in proposed font design**. A lower x-height mirrors the handwriting of children when writing quickly, where characters tend to be more compact vertically. This feature helps maintain consistency between handwritten forms and typed text, fostering a smoother transition for children learning to read and write.

Overall, the proposed font design introduces these nuanced differences to cater specifically to children's cognitive and motor skills development, providing an alternative approach to the more traditional design principles found in the Rosemary Sassoon font.

Github link of the uploaded document:

https://github.com/aneeshgupta25/Aneesh-Font-Style

Submitted By –

Name: **Aneesh Gupta**

Roll no: **2021UCS1720**

Section: **CSE Batch-2**