

NEW TYPEFACE DESIGN & DEVELOPMENT

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This Report Presented in Partial Fulfillment of the Requirements for
the Degree of Bachelor of Science in Multimedia and Creative
Technology

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APPROVAL

This Project titled “**New Typeface Design & Development**”, submitted by Imrul Kayes Sourav to the Department of Multimedia and Creative Technology, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Multimedia and Creative Technology and approved as to its style and contents. The presentation has been held on 13 February 2022.

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Finally, I must acknowledge with due respect the constant support and patients of my parents.

DECLARATION

I hereby declare that, this project has been done by me under the supervision of **Mr. Mizanur Rahman, Lecturer, Department of MCT** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

We are moving faster in an era of digital communication and technology. Covid stopped our day-to-day workflow but that speed of transitioning towards digitalization also increased. No one thought before that we have to do class from home or have to shop from home. In that journey towards digitalization, the urgency of using our own language for communication is also increasing. In the time of typing when we press any key on our keyboard, it passes a signal through software and it shows a letter or that alphabet on our screen. Typeface or font are the media of displaying the character of any language on display. There are some Bangla fonts already available but most of them are developed in ANSI. But, very few good-quality Unicode Bangla fonts are available to use on the web. Most of the Bengali websites use those same common fonts. A typeface can express the vibe or mood of any brand or content if it is used wisely. Alphabet can make visual communication to the audience. We need more typefaces and fonts to use.

My main goal for this project is to design and develop a new Unicode typeface implementing a modern design aesthetic. For that project, I will design and develop both Bangla and English letters with the same design characteristics. So that when we will write or type with that it will provide visual similarities and pleasing to eyes. That typeface will be licensed under “SIL Open Font License” so people can use that on the website or anywhere they want.

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CHAPTER 1

Introduction

We see texts in our everyday life whether it is in print or on display. Texts are a medium of expressing impressions and thoughts. We write any text with the letters. Letters or alphabets are the core of all languages. Style of letters can also carry the expression of our mood.

Letters were invented more than thousands of years ago. Every language has different letters. Designing and creating variations in letters without destroying their origin is known as lettering. Lettering is also an art form. We learned the basics of lettering and typography in our “Basic typography” and “New typeface design” Courses. A complete set of character lettering with the same aesthetics is known as typeface. This project of mine is mainly focused on designing a unique typeface with good readability. After sharing the basic thought of that project my course teacher encouraged me to develop that as a font family.

During my university courses, I learned several techniques and software which I will be going to use on that project.

Before the digital era, we could only write text on paper or write on a typewriter. In the press, those days typefaces were made of metals. Typesetters arrange letters on a block for print. That scenery changed after the invention of the computer. For showing information on-screen then comes the font. After the digital revolution, everything is on the web now. People also read newspapers on the internet. Many reputed companies use typeface according to their brand moods. There are thousands of fonts in other languages. But there is a limitation and a shortage of

quality Bangla font to use on the web at that time. My main motive behind this project is minimizing that shortage of good quality font. And it will provide our web developer and other users with an option to explore and experiment. My goal is to create a typeface that is unique in design, will have good readability and legibility on both print and digital screens. As this font will be under an open font license it will be free for all to use. Which will be beneficial for everyone.

CHAPTER 2

Research and Studies

Creating something according to the concept requires research and study. I started analysing and studying that topic even before I decided to take “New Typeface Design” as my final year project. That time I noticed that in the English language they have many different types of typefaces to use on their website. They use fonts according to their product or brand mood.

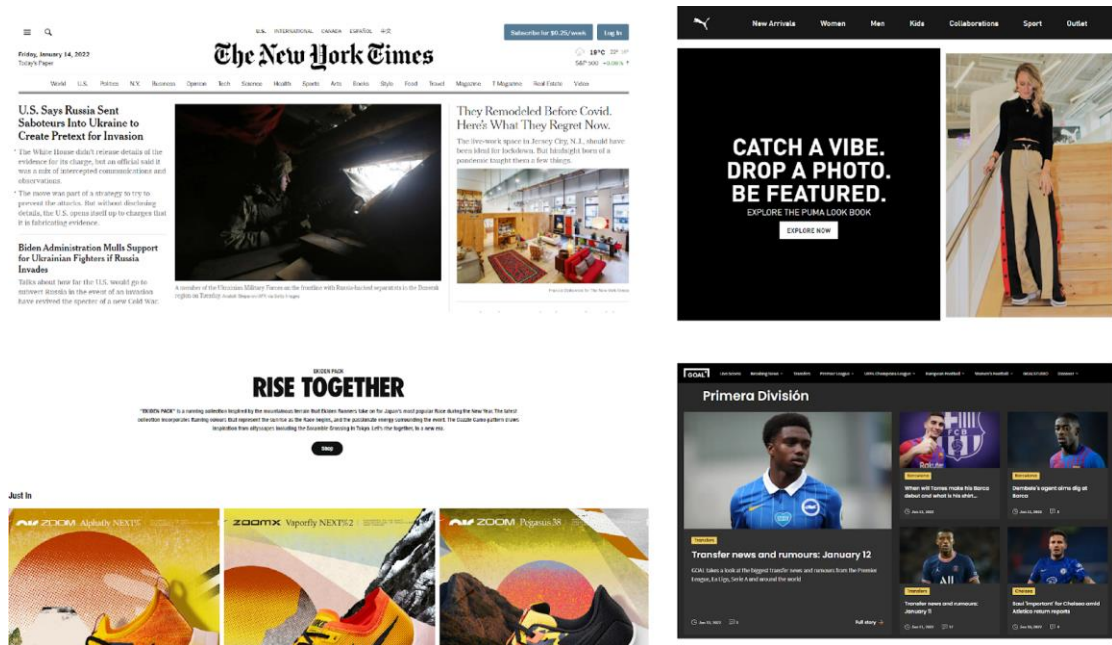


Figure 2.1: Variations of fonts in the website

In that image, you can see different types of websites using different typefaces on their website. The New York Times is a renowned newspaper. They are using a Serif font on their website. Serif fonts give a formal, stable, trustworthy vibe. Nike and Adidas are renowned fashion brands. Youth is their target audience. To express that energetic vibe, they are using the Sans Serif typeface on their

website. Goal is also a news portal. But it's a specialized sports news portal. They also use Sans Serif to express sporty and energetic looks. However, Nike, Adidas, and Goal use Sans Serif typeface but they didn't use the same typeface.[1] All are using different typefaces which reflect their brand mood. But in the Bengali language, we have a few fonts to use on the website. Most of the websites are using the same type of font.



Figure 2.2: Bengali website using same font

All websites are using common 5 to 6 fonts that are available. Even you can see two renowned Bengali newspapers are using the same font on their websites. The difference is one just using a regular version, another one is using the bold

version. These existing UNICODE typefaces have some bugs also. Which causes problems in the time of use.



Figure 2.3: Bugs in some existing typeface

After that, I discussed with my advisor - shared my thoughts and he gave me a green signal to start work on that project. After that, I started searching and thinking about what type of typeface I should design. At that time, I had read many articles about design, and the previous day's typesetting, I read a report by Riccardo Olocco whose heading was Linotype Bengali and the digital Bengali typefaces. That helps me know several things about type design. I decided to design a Sans Serif typeface and also decided to develop that typeface in Unicode.

2.1 Why Sans Serif

The main difference between serif and sans serif is sans serif doesn't have serif in it. Simple, Clean lines which have the same width throughout are the characteristics of Serif typefaces. These characteristics of sans serif help to render out more clearly on screen. Which increases the readability and the legibility of the letters to the viewers. For this reason, web designers also prefer using sans serif typeface for on-screen use. Sans's serif typeface gives the feeling of being casual, informal, friendly, Modern, and youthful. So, I decided to design a sans serif typeface in that project.

2.2 Why Unicode

ANSI and UNICODE are the most popular encoding standards. Encoding is the process of transmitting, transforming characters of human language by assigning numbers to the graphical characters. ANSI is an older encoding version compare to UNICODE. ANSI used to use in Windows 95,98 or in much older operating systems. UNICODE is the newer encoding system that is used in today's operating systems. ANSI has around 256 Characters in its encoding process whereas UNICODE has more than one million characters in its encoding. For different languages, ANSI uses different platforms whereas UNICODE uses only one platform for encoding all the language across the globe. So, I decided to develop my typeface in UNICODE encoding.

CHAPTER 3

Selecting Software

For making a font from scratch I have done some background studies about which type of design to do and which software should I use in that process. After that, I made a list of my work and divided them. So, I did not miss any of it. I divide that project into mainly two parts. These are

- Typeface Design
- Font Development

I started with the design part. The Initial design of letters is created on paper. But after that, I have to vectorize those letters to develop them in UNICODE.

3.1 Selecting software for vectorization

There is some popular good quality vector graphics software now available in the market. These are

- Adobe Illustrator
- Corel Draw
- Inkscape
- Affinity Designer



Figure 3.1.1: Adobe Illustrator

Adobe Illustrator: Adobe Illustrator is the market-leading vector graphics software this time. It's a product of Adobe Inc. The development of this software started in 1985 and was released fully in 1987. It was originally developed for Mac Os. But it's now available for both Mac and Windows. Adobe Inc. is constantly updating that software every year and adding new features for the user.[2]



Figure 3.1.2: CorelDraw

CorelDraw: CorelDraw is a vector graphics editor developed by Corel Corporation. It was Initially released in 1989. They originally developed that creative suite for the Windows operating system. But now it is available for Windows, Mac, and Linux also. [3]



Figure 3.1.3: Inkscape

Inkscape: Inkscape is an open-source vector graphics editing software. Inkscape was initially released in 2003 as a code fork of the Sodipodi project. As it is open source it is free for all to use and develop. It's available for Windows, Mac, and Linux. [4]



Figure 3.1.4: Affinity Designer

Affinity Designer: Affinity designer is a vector graphics editor developed by Serif. It is called the most popular alternatives to adobe illustrator. It is compatible with most of the popular file formats like ai, SVG, eps, pdf, PSD. It's available for Windows, Mac Os, and iPad Os. [5]

From all of this, I chose Adobe illustrator for my work. I learned Adobe Illustrator and basic use of CorelDraw on my Visual Arts-related courses. But I mostly worked in Illustrator and it's easy to get help from the community if I face any problem. So, I chose Illustrator for my design part.

3.2 Selecting Software for font development:

After designing there comes the part of developing that typeface so that we can use this on any computer. There is some popular software for developing fonts.

These are

- FontCreator
- FontLab
- FontForge



Figure 3.2.1: FontCreator

FontCreator: FontCreator is the world's most popular font editor software with over 5 million downloads. It's a product of High-Logic. With that, we can create TTF (True Type Font), OTF (Open Type Font), WOFF (Web Open Font Format) format font with that software. Which can be used in Windows, Mac Os, and Linux also. This software is only available for windows. [6]



Figure 3.2.2: Font Lab

Font Lab: Font Lab is another Professional font editor software that is a product of FontLab Ltd Inc. We can create or edit TTF (TrueType fonts), OTF (OpenType Font), variable fonts, color fonts, and web fonts for any Unicode Writing System. This software is available for both Windows and Mac Os. [7]



Figure 3.2.3: FontForge

FontForge: FontForge is a Free and open-source font editor software primarily developed by George Williams. It's open-source software so anyone can develop and use this for free. This software has some powerful features like merging glyphs, auto trace images, and importing them into a font. We can create or edit all most popular formats like TTF (TrueType fonts), OTF (OpenType fonts), WOFF, variable fonts, and some others. [8]

These three are the most used software for font editing and development. But they have some issues also. FontLab has a wide range of tools for work but it has still some rendering issues for Bengali script. Sometimes Ligatures of the Bengali script do not work properly after rendering as a font file with FontLab. FontForge doesn't have that problem but its UI is very complex to work with. FontCreator has some limitations also for other languages but it doesn't have rendering issues for Bengali script and also it has a simple UI to work with. So, from these three I choose FontCreator for editing and developing my Font.

CHAPTER 4

Project Workflow

After finalizing the goal, I started designing letters. The first step is creating a basic style which I will follow in designing every letter of that typeface. Creating your own new style is always a challenging task. It's a trial-and-error process. I tried many many things and came up with several ideas.

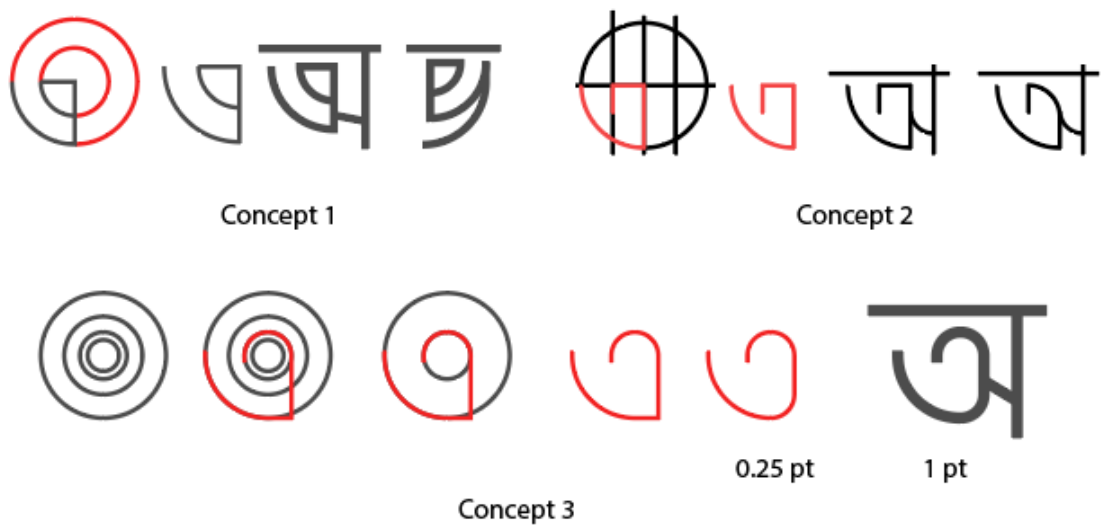
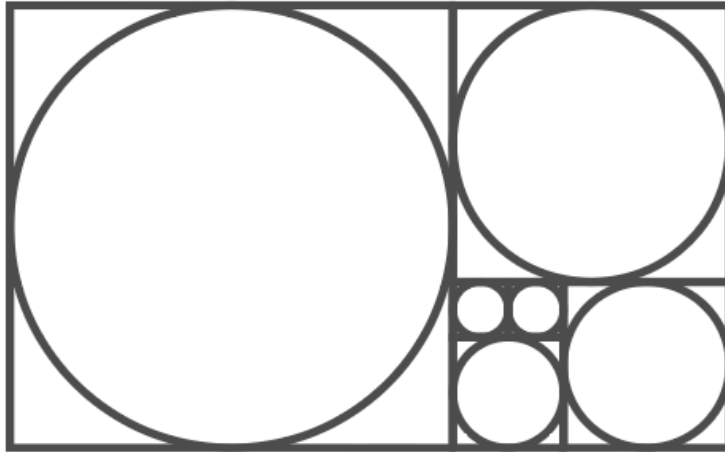


Figure 4.1: Some design concepts of letters

From these three I select the Third concept as it has more legibility. Legibility helps to achieve good readability.

4.1 Explanation of the Concept

I developed the design from the golden ratio circles.



Golden Ratio Circles

Figure 4.1.1: Golden Ratio Circles [9]

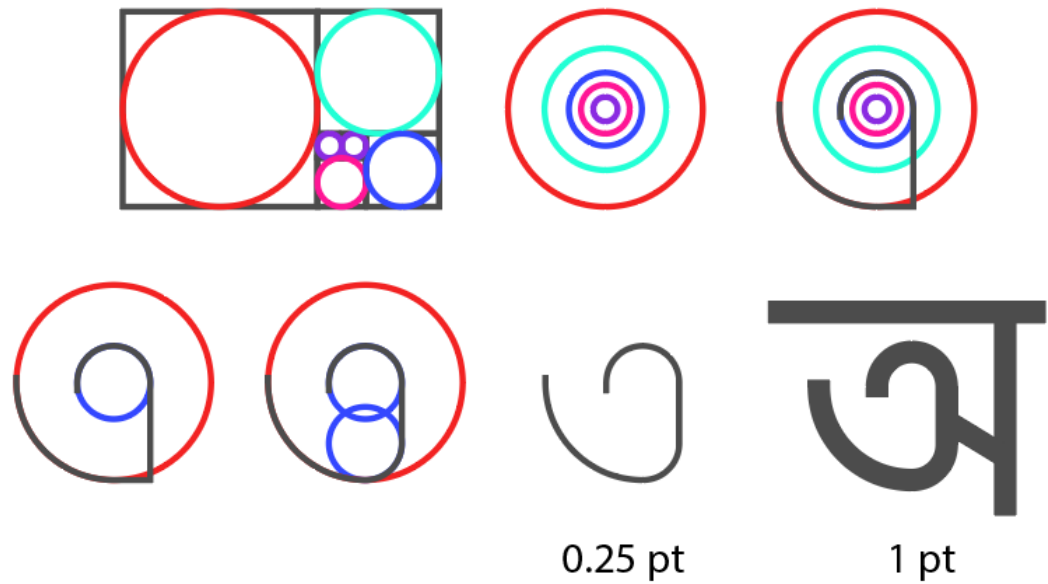


Figure 4.1.2: Letter design from Golden Ratio Circles

I extracted circles from the golden ratio and aligned them centrally. After that I joined the 3rd and 4th circle with a line on the right side. I used that line because in the Bengali Character Architecture we have vertical lines. This vertical line is called a stem. After that, I duplicated the 3rd circle, placed it down, and aligned that with the 5th circle. Then I rounded the corner of the 5th circle and stem joining part according to the roundness of the 3rd circle.

4.2 Designing the Letters

After creating the style, I start designing other letters according to that style. Firstly, I start designing the vowels of the Bengali alphabet. In the Bengali language, we have 11 alphabets. I kept stroke size 1pt for all the characters and .8pt for Matra. I did that for keeping optical similarities in the weight of the characters.

অ আ ঐ ঔ
এ ঐ ঋ ঌ
এ ঐ ও ঔ

Figure 4.2.1: Vowels

They're also used to be two long vowels: "ঋ" ঠ (दीर्घ ऋ dirghô rri, "long rri") and "ॠ" ठ (दीर्घ ॠ dirghô lli), which were removed from the inventory during the Vidyanagar reform of the script due to peculiarity to Sanskrit. Another grapheme called "ॡ" ठ (or ॡ ॡ rôshshô li as it used to be) representing the vocalic equivalent of a dental approximant in Sanskrit but actually representing the consonant-vowel combination ठि /li/ in Bengali instead of a vowel phoneme, was also included in the vowel section but unlike "ঋ", it was recently discarded from the inventory since its usage was extremely limited even in Sanskrit. I also designed them as it is part of history. [10]



Figure 4.2.2: ঋ, ॠ, ॡ - Removed Bengali Vowels

After designing the vowels, I start designing the consonants of Bengali alphabets. In Bengali, we have 39 consonants. I designed them according to the same style

ক খ গ ঘ ঙ চ ছ
জ ঝ ঞ ট ঠ ড ঢ
ণ ত থ দ ধ ন প
ফ ব ভ ম য র ল
শ ষ স হ ড ঢ য়
় ং ঃ ঙ

Figure 4.2.3: Consonants

After designing consonants, I designed the vowel marks of Bangla alphabets

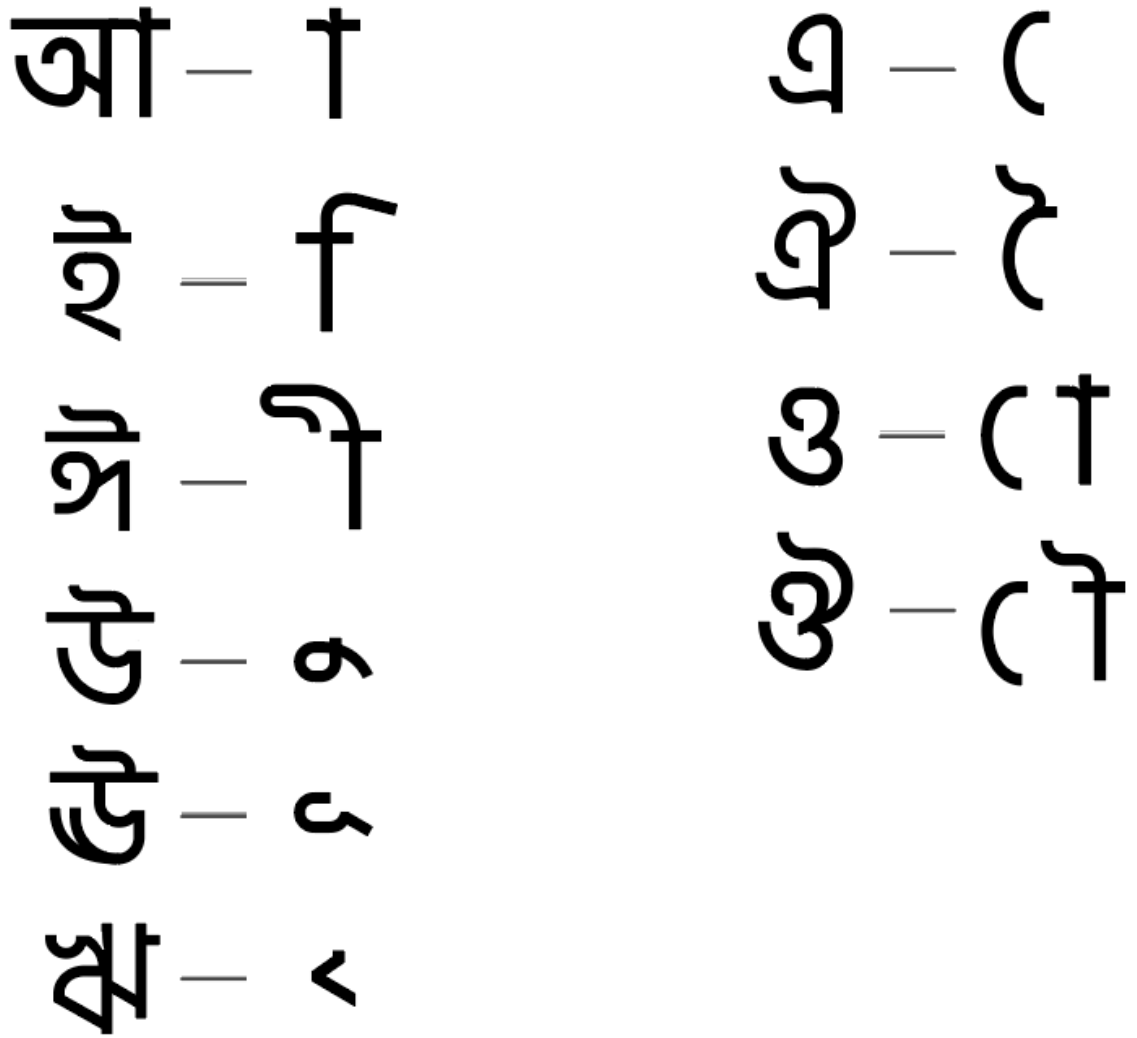


Figure 4.2.4: Attaching vowel signs(কার).

After designing the vowel sign, I started designing the compound letter of the Bangla script. Compared to English, the Bangla script is hard to work with because of its compound letters in that script. When more than one consonant come together and make a new letter it is known as a compound letter(যুক্তবর্ণ) in the Bengali alphabet. In the Bengali alphabet, we have 293 compound letters.

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ক্ক ক্ক্য ক্ক্য ক্ক্য ক্ক্য ক্ক্য ক্ক্য
ক ক্ক ক্ক ক্ক ক্ক ক্ক ক্ক
ক ক্ক ক্ক ক্ক ক্ক ক্ক ক্ক

Figure 4.2.5: Several United Consonants

জ্জ জ্জ্জ জ্জ্জ জ্জ জ্জ জ্জ
 জ্জ জ্জ জ্জ জ্জ জ্জ উ উ উ
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 টা ঠ ঠা ঠ ঠা ডা ডা ডা
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 ত ত ত ত ত ত ত ত
 থা থা দা দা দা দা দা দা
 দা দা দা দা দা দা দা দা
 ধা ধা ধা ঠ ঠ ঠ ঠ

Figure 4.2.6: Several United Consonants

୪ ୪ ୪ ୪ ୪ ୪ ୪ ୪
 ୪ ୪ ୪ ୪ ୪ ୪ ୪ ୪
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 ୪ ୪ ୪ ୪ ୪ ୪ ୪ ୪
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 ୪ ୪ ୪ ୪ ୪ ୪ ୪ ୪
 ୪ ୪ ୪

Figure 4.2.7: Several United Consonants

क का ग गा घ घा च चा ज जा ङ
ण णा त ता थ था व वा म मा श शा ष
ह्य थ थ ग ग्र घ घ च च छ छ ज ज व
ट ट ड ड ण ण त त झ झ व्र व्र ंस थ
द द ध ध ष ष न न प प फ फ व
ड ड म म य य ल ल श श ष ष स स ह
ह्य टा

Figure 4.2.8: Several United Consonants

After Designing Bengali United Consonants, I designed basic English characters and Numerical digits.

<u>Uppercase Letter</u>	<u>Lowecase Letter</u>
A B C D E F G	a b c d e f g
H I J K L M N	h i j k l m n o
O P Q R S T U	p q r s t u v
V W X Y Z	w x y z

Numerical Digit

0 1 2 3 4
5 6 7 8 9

Figure 4.2.9: English Uppercase, Lowercase letters, and Numerical Digits

4.3 Font Development

For developing the font, I used FontCreator. After opening FontCreator I take a new Project and it automatically gives a Latin font script to work with. We can make an English font with that from here.

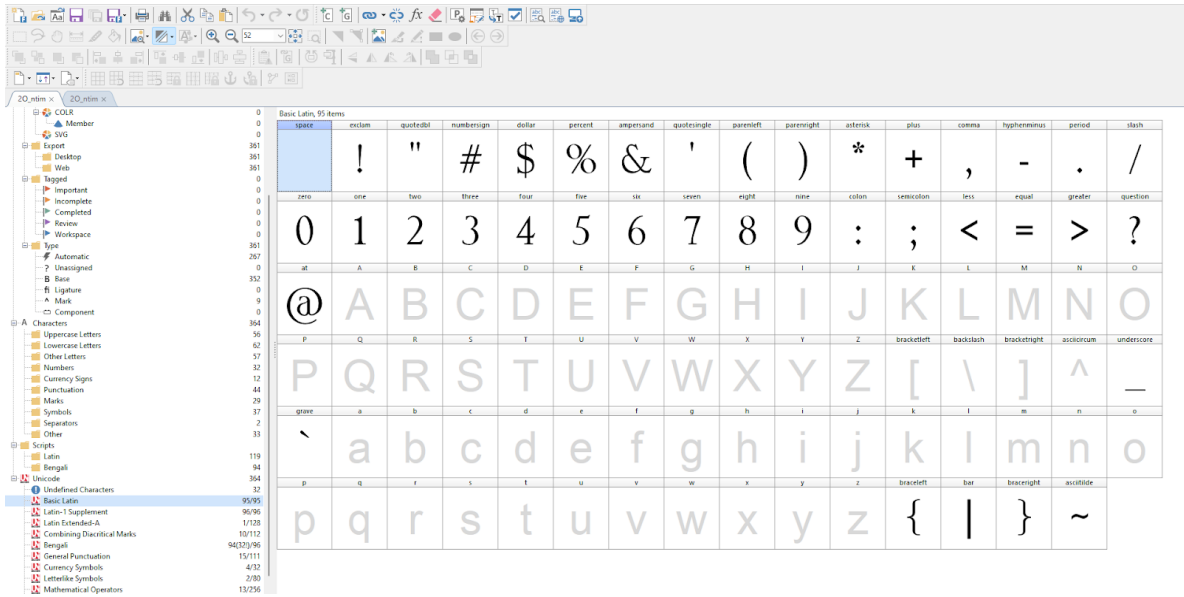


Figure 4.3.1: User Interface of FontCreator

As my plan is to create a multilingual typeface. So, I imported all the basic Latin characters that I designed into that project file. In FontCreator I double-clicked over the glyph and opened it. After that, I copied them one by one from the illustrator and pasted them in the character glyph by pressing Ctrl + V. After that, I adjusted them according to cap height and baseline. The importing process is the same for all the characters.

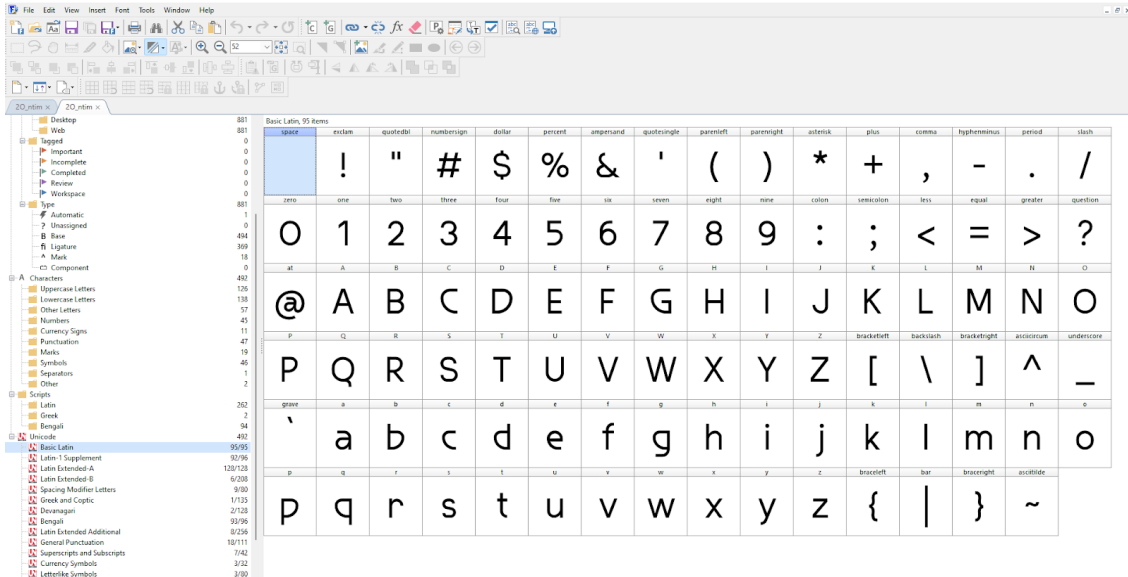


Figure 4.3.2: Imported basic Latin characters

But FontCreator doesn't have a preloaded script for the Bengali language. So, firstly add to my project file from the "Add Script" Option.

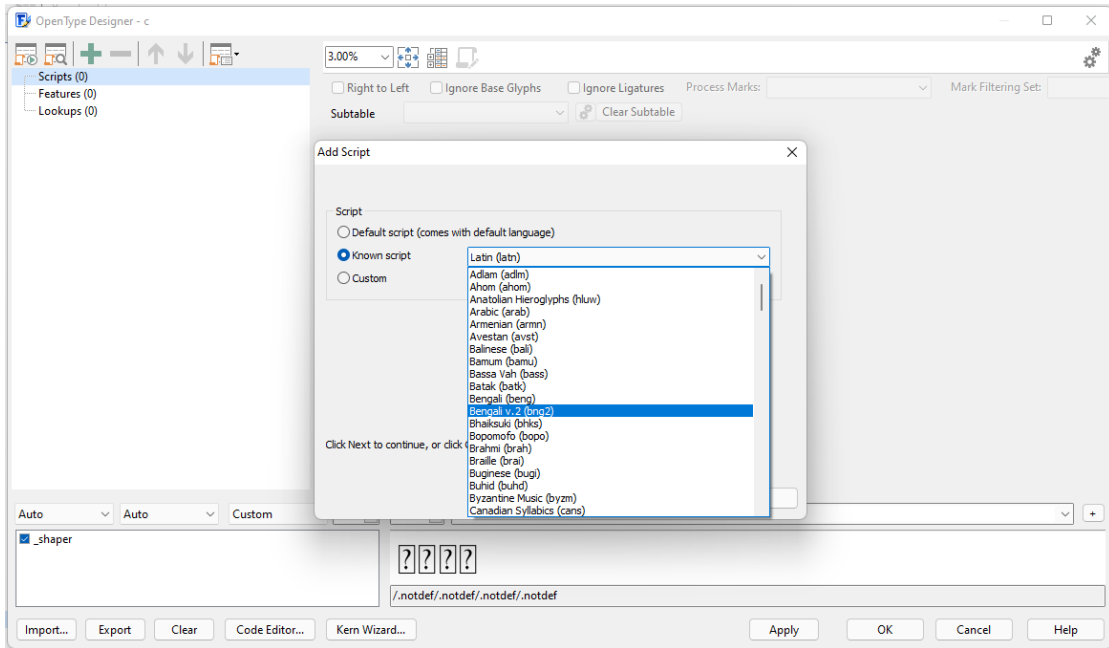


Figure 4.3.3: Adding Bengali Script

Then I added the basic Bengali Unicode characters to my project. I find Bengali Unicode character block code point from Wikipedia.

Bengali	
Range	U+0980..U+09FF (128 code points)
Plane	BMP
Scripts	Bengali
Major alphabets	Bengali, Assamese
Assigned	96 code points
Unused	32 reserved code points
Source standards	ISCII
Unicode version history	
1.0.0 (1991)	89 (+89)
4.0 (2003)	90 (+1)
4.1 (2005)	91 (+1)
5.2 (2009)	92 (+1)
7.0 (2014)	93 (+1)
10.0 (2017)	95 (+2)
11.0 (2018)	96 (+1)
Note: ^[1] ^[2]	
ব্বি→ব্বি	This article contains Indic text . Without proper rendering support, you may see question marks or boxes, misplaced vowels or missing conjuncts instead of Indic text.

Figure 4.3.4: Bengali (Unicode block) [11]

For adding Bengali Unicode character blocks to my project file, I added them from the Insert Characters option from FontCreator.

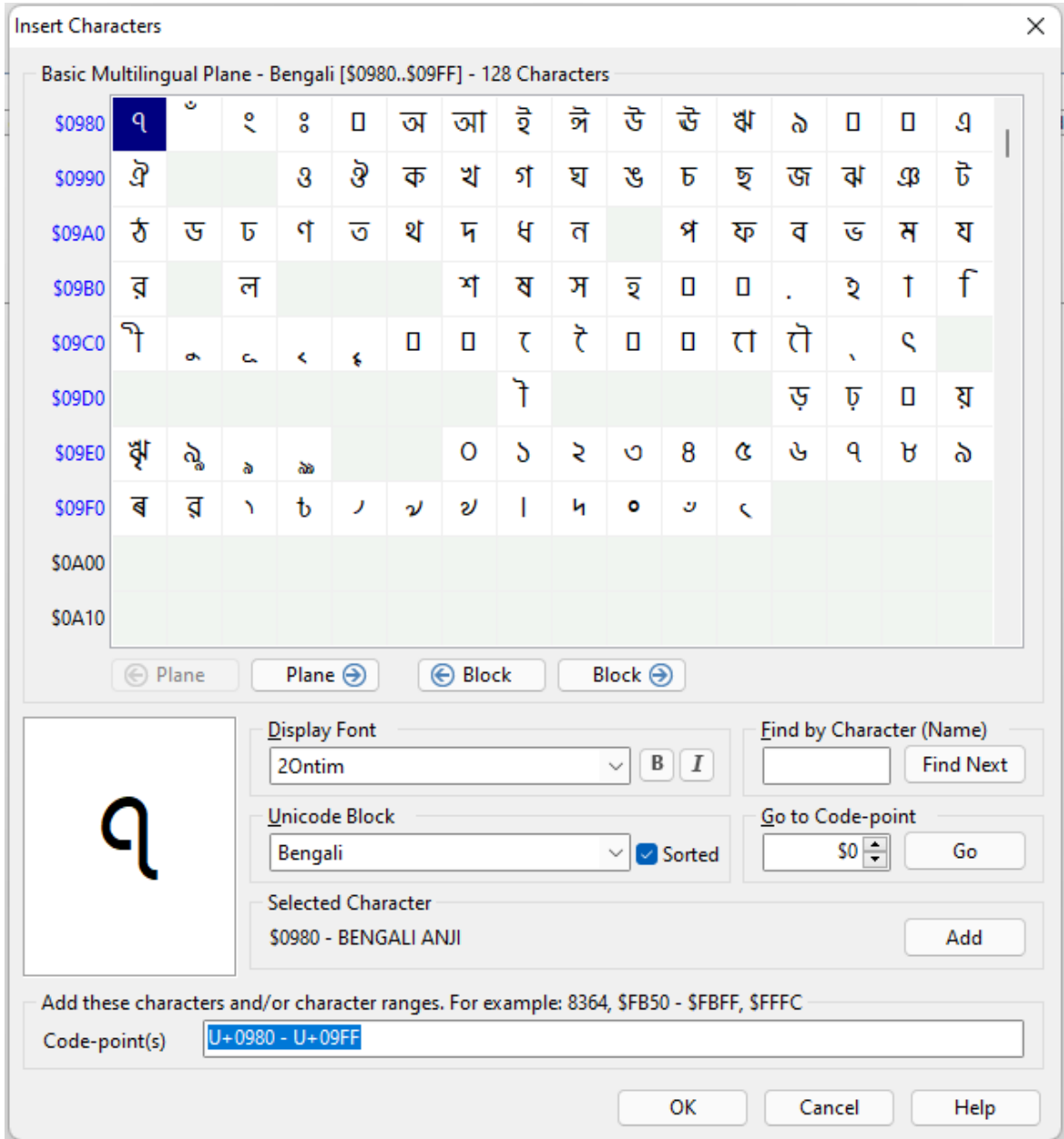


Figure 4.3.5: Inserting Unicode Characters

After that, I import those characters to my project file according to their Unicode block.

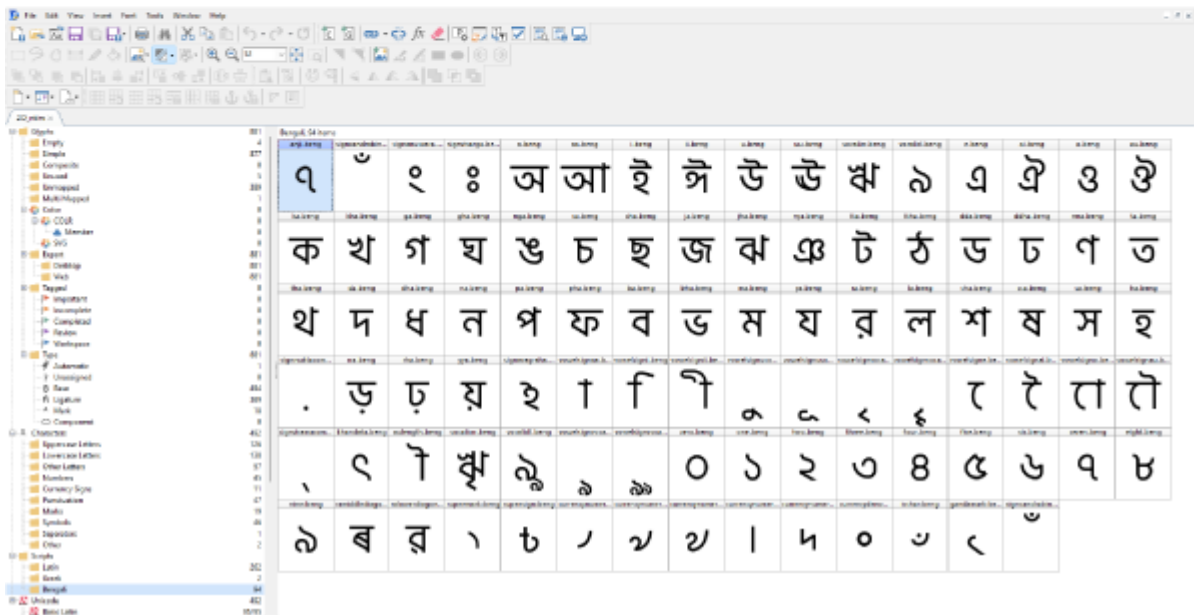
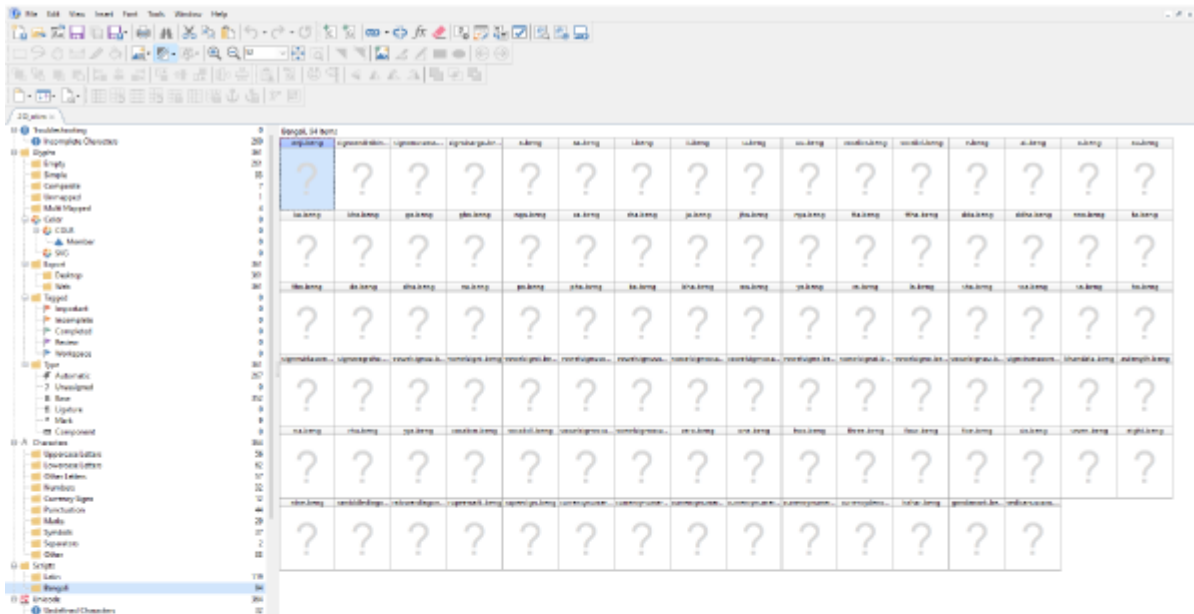


Figure 4.3.6: Importing and pasting Characters

Only adding Unicode character blocks is not enough for making a Bengali Unicode font. Bengali is a complex script compared to English. We have United Consonants in the Bengali language.

So, I added the United consonant as Glyph in my project file. I insert and placed all the united consonant characters that I designed previously.

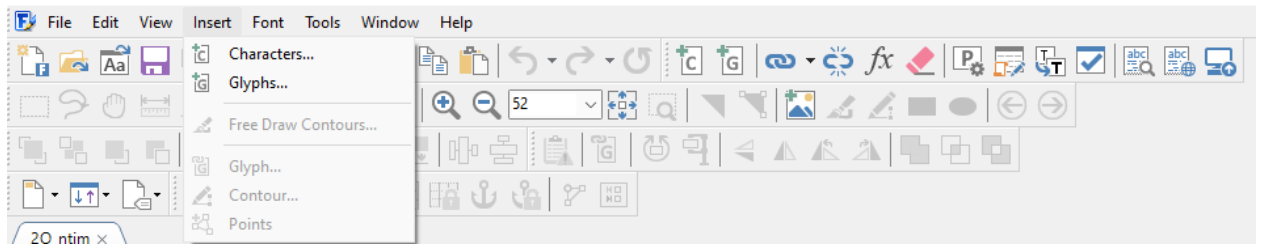


Figure 4.3.7: Inserting Glyph

bnNG_MA	bnTT_MA	bnDD_MA	bnNN_MA	bnT_MA	bnD_MA	bnDH_MA	bnN_MA	bnP_MA
ঞ	ঠ	ড	ঢ	ণ	ত	থ	দ	ধ
bnT_LA	bnP_LA	bnPH_LA	bnB_LA	bnBH_LA	bnM_LA	bnL_LA	bnSH_LA	bnS_LA
ভ	ঞ	ঠ	ড	ঢ	ণ	ত	থ	দ
bnKH_RA	bnG_RA	bnGH_RA	bnNG_RA	bnC_RA	bnCH_RA	bnJ_RA	bnJH_RA	bnNY_RA
ঙ	ঐ	঑	঒	ও	ঔ	ক	খ	গ
bnN_RA	bnP_RA	bnPH_RA	bnB_RA	bnBH_RA	bnM_RA	bnSH_RA	bnS_RA	bnSS_RA
ব	ঐ	঑	ব	ভ	ষ	শ	স	ষ
bnNG_GH_RA	bnC_CH_RA	bnK_TT_RA	bnNN_TT_RA	bnTT_TT_RA	bnN_TT_RA	bnL_TT_RA	bnSS_TT_RA	bnS_TT_RA
ঙ	ঞ	ঠ	ড	ঢ	ণ	ত	থ	দ
bnP_TTA_RA	bnS_T_RA	bnN_TH_RA	bnG_D_RA	bnD_D_RA	bnN_D_RA	bnB_D_RA	bnM_D_RA	bnL_D_RA
ঐ	ঐ	঑	঒	ও	ঔ	ক	খ	গ

Figure 4.3.8: Importing United Consonant in the Glyph

bnM_MA	bnL_MA	bnSH_MA	bnS_MA	bnSS_MA	bnH_MA	bnK_germandb...	bnK_LA	bnG_LA
শ	ল	শ	স	ষ	ক্ষ	ক্ষ	ক	গ
bnH_LA	bnS_K_LA	bnM_P_LA	bnS_P_LA	bnNG_K_SSA	bnK_u11032	bnN_u11032	bnP_u11032	bnK_RA
হ	ক	ক্ষ	ক্ষ	ক্ষ	ক	ব	প	ক
bnTT_RA	bnTTH_RA	bnDD_RA	bnDDH_RA	bnNN_RA	bnT_RA	bnTH_RA	bnD_RA	bnDH_RA
ট	ঠ	ড	ঢ	ণ	ত	থ	দ	ধ
bnY_RA	bnL_RA	bnH_RA	bnK_germandb...	bnJ_NY_RA	bnNG_K_RA	bnSS_K_RA	bnS_K_RA	bnS_KHA_RA
য	ল	হ	ক্ষ	ক্ষ	ক	ক	ক	ক্ষ
bnNN_TTH_RA	bnSS_TTH_RA	bnNN_DD_RA	bnN_DD_RA	bnL_DD_RA	bnNN_DDH_RA	bnK_T_RA	bnN_T_RA	bnP_T_RA
থ	থ	দ	দ	দ	দ	ক	ক	ক
bnN_DH_RA	bnM_P_RA	bnSS_P_RA	bnS_P_RA	bnL_PH_RA	bnS_PH_RA	bnM_PH_RA	bnM_B_RA	bnD_BH_RA
ক	ক্ষ	ক্ষ	ক্ষ	ক্ষ	ক্ষ	ক্ষ	ক্ষ	দ

Figure 4.3.9: Importing United Consonant in the Glyph

bnB_BH_RA	bnM_BH_RA	bn_BH_RA	bnK_BA	bnKH_BA	bnG_BA	bnC_BA	bnCH_BA	bnJ_BA
ব্ৰ	ম্ৰ	ব্ৰ	ক্	খ্	গ্	চ্	ছ্	জ্
bnB_BA	bnM_BA	bnL_BA	bnSH_BA	bnSS_BA	bnS_BA	bnH_BA	bnK_germandb...	bnC_CH_BA
ব্ব	ম্ব	ল্ব	শ্ব	ষ্ব	স্ব	হ্ব	ক্	চ্
bnK_TTA_ml	bnTT_TTA_ml	bnNN_TTA_ml	bnN_TTA_ml	bnL_TTA_ml	bnSS_TTA_ml	bnP_TTA_ml	bnS_TTA_ml	bnTT_BA_ml
ক্টি	ট্টি	টি	ল্টি	ল্টি	ষ্টি	প্টি	স্টি	ত্টি
bnTTHA_ml	bnNN_TTHA_ml	bnN_TTHA_ml	bnSS_TTHA_ml	bnTTH_RA_ml	bnNN_TTH_RA...	bnTTA_ml	bnK_TTA_ml	bnTT_TTA_ml
ক্টি	ষ্টি	ষ্টি	ষ্টি	ষ্টি	ষ্টি	টি	ষ্টি	টি
bnK_TT_RA_ml	bnTT_TT_RA_ml	bnNN_TT_RA_ml	bnN_TT_RA_ml	bnL_TT_RA_ml	bnSS_TT_RA_ml	bnS_TT_RA_ml	bnTTHA_ml	bnTTH_RA_ml
ক্টি	ষ্টি	ষ্টি	ষ্টি	ষ্টি	ষ্টি	ষ্টি	ষ্টি	ষ্টি
bnSHA_mU	bnHA_mU	_842	bnJ_RA_mU	bnD_RA_mU	bnM_RA_mU	bnN_D_RA_mU	bnBH_RA_mU	bnL_GA_mU
শ্	হ্	ৰ্	জ্	ড্	ম্	ন্	হ্	ল্

Figure 4.3.10: Importing United Consonant in the Glyph

bnTT_BA	bnNN_BA	bnDD_BA	bnT_BA	bnTH_BA	bnD_BA	bnDH_BA	bnN_BA	bnP_BA
ট	থ	ড	ত	থ	দ	ধ	ন	প
bnJ_J_BA	bnT_T_BA	bnS_T_BA	bnD_D_BA	bnD_DH_BA	bnN_DH_BA	bnN_T_BA	bnN_D_BA	bnTTA_ml
জ	ত	স	দ	ধ	ন	ত	দ	টি
bnTT_MA_ml	bnTT_RA_ml	bnK_TT_RA_ml	bnTT_TT_RA_ml	bnNN_TT_RA_ml	bnN_TT_RA_ml	bnL_TT_RA_ml	bnSS_TT_RA_ml	bnS_TT_RA_ml
ঘি	ঢ়ি	ক্ৰি	ট্ৰি	ট্ৰি	ট্ৰি	ট্ৰি	ট্ৰি	ট্ৰি
bnNN_TTA_ml	bnN_TTA_ml	bnL_TTA_ml	bnSS_TTA_ml	bnP_TTA_ml	bnS_TTA_ml	bnTT_BA_ml	bnTT_MA_ml	bnTT_RA_ml
ণী	ণী	ণী	ণী	ণী	ণী	ণী	ণী	ণী
bnNN_TTHA_ml	bnN_TTHA_ml	bnNN_TTH_RA_...	bnSS_TTHA_ml	bnP_TA_ml	bnSH_TA_ml	bnG_DHA_ml	bnP_T_RA_ml	bnGA_mU
ণী	ণী	ণী	ণী	ণী	ণী	ণী	ণী	ও
bnS_RA_mU	bnS_LA_mU	bnJ_RA_mUU	bnD_RA_mUU	bnM_RA_mUU	bnN_D_RA_mUU	bnBH_RA_mUU	bnS_LA_mUU	bnS_RA_mUU
ফ	ফ	ফ	ফ	ফ	ফ	ফ	ফ	ফ

Figure 4.3.11: Importing United Consonant in the Glyph

Added United consonants will not work if I don't add them as a feature in the script. United consonants are the sum of multiple consonants. In here one consonant adds with another consonant, so I also have designed and added Half Form of all consonants in the project. In United Consonants, the consonants are connected with "Hasanta".



Figure 4.3.12: Hasanta [12]

In Bengali "Hasanta" is used to suppress the underlying vowel of a consonant. As a result of the use of hasanta, the vowel is not associated with that consonant, so it is called dead consonant. This type of consonant can combine with other

consonants to form a consonant. These features also help us to link with the United Consonants we designed in our designed part.

We have Above Base Mark, Below Base Mark, Half Forms, Ref Forms, Pre-Base Substitutions in the Bengali Language. In the Font script, we have to include them all as features. Otherwise, it will not work perfectly when we type with that font.

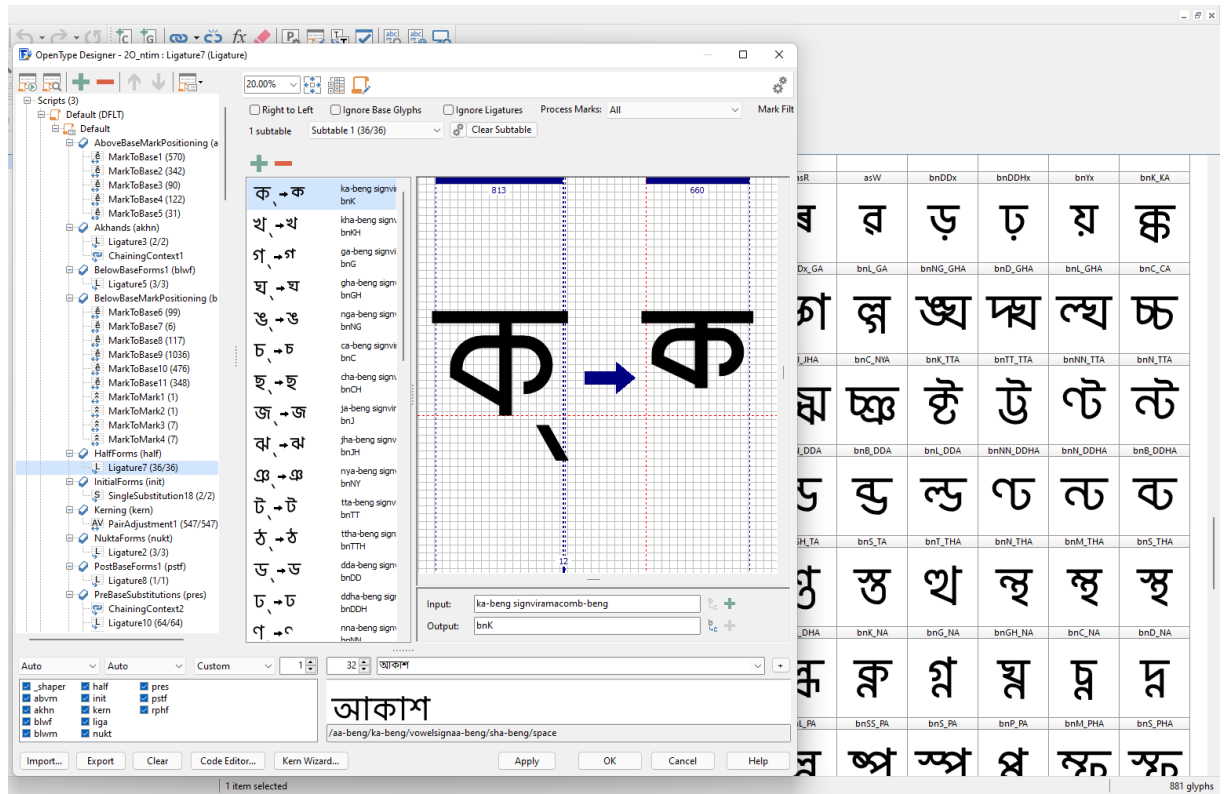


Figure 4.3.13: Bengali Characters Half form

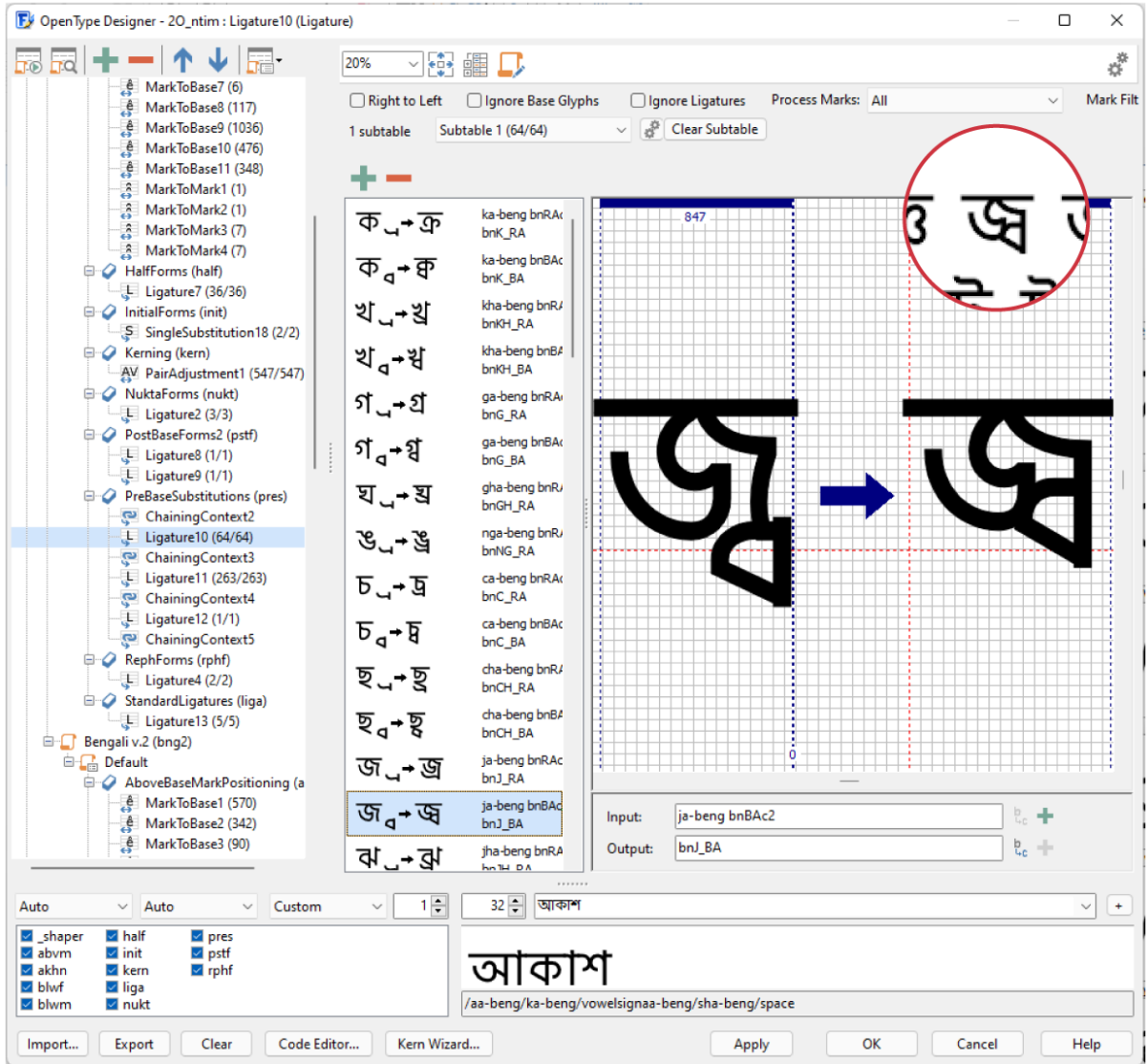


Figure 4.3.14: Pre-Base Substitutions

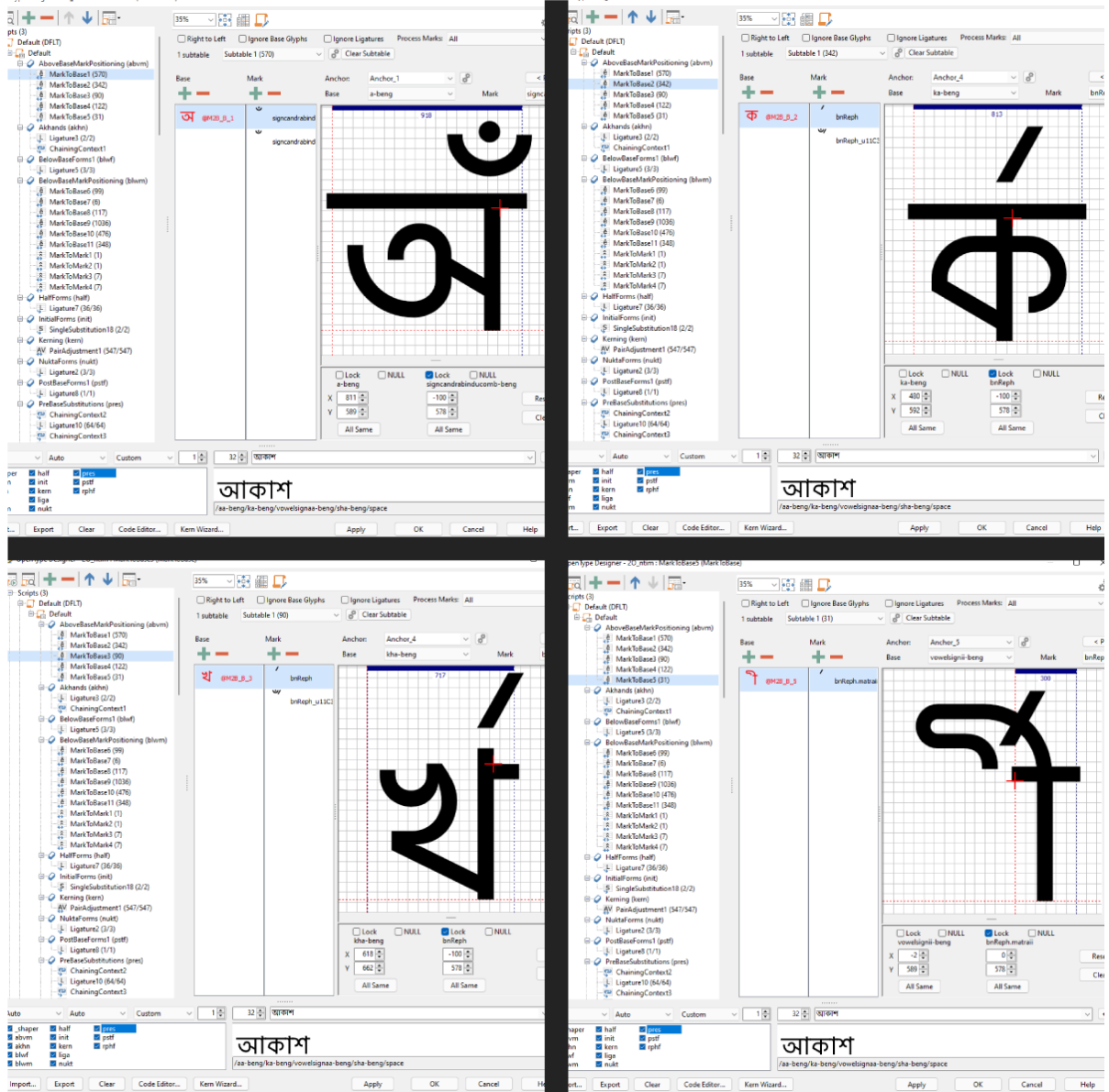


Figure 4.3.15: Feature added in Script

I also created some classes with several characters to work easily. All Characters of the same class follow the same command in that. So, adjusting their behavior becomes easy in time of working with anchor points.

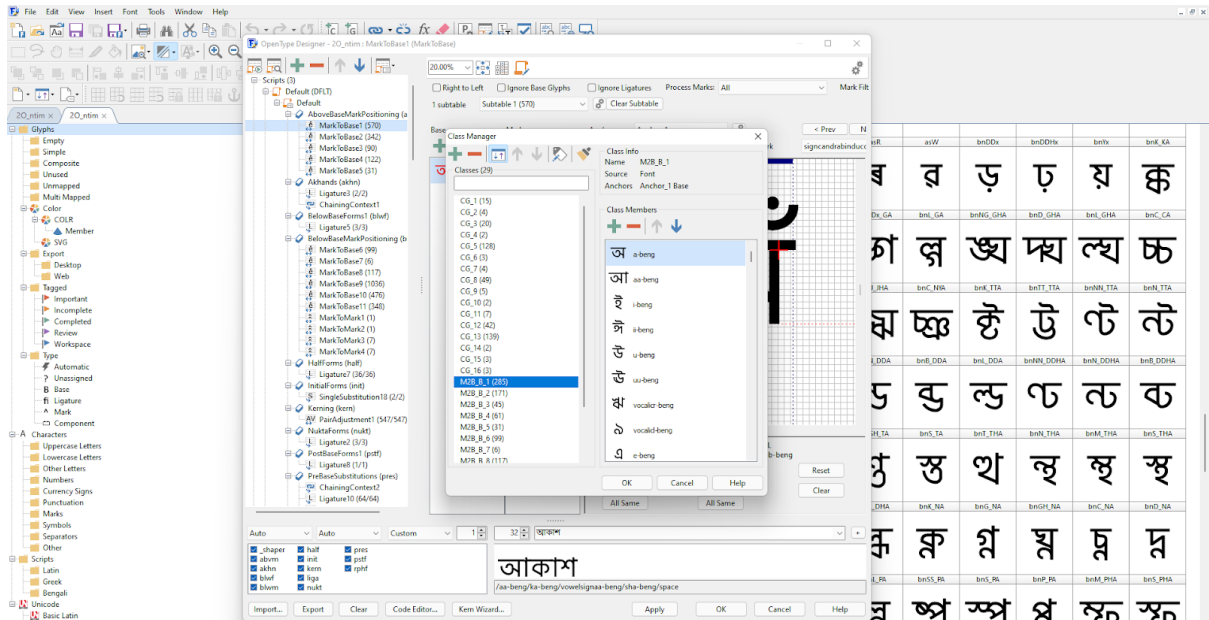


Figure 4.3.16: Creating Classes

In Bengali, we have Vowel Sign(কার). These sign sums with a consonant and creates a new form. For maintaining those sums with consonants at the perfect place I used anchor point.

क → का कि की कु कू
के क् कै को कौ

Figure 4.3.17: Consonant sums with vowel sign(example)

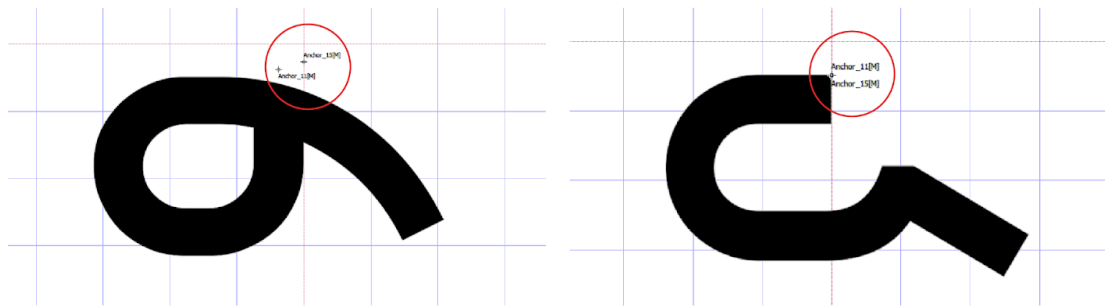


Figure 4.3.18: Anchor point

I placed the same anchor point for similar position-oriented signs. So that I can control their position easily.

In Bengali Chandrabindu and Reph's position is above the character. I also added anchor points for those characters. So, I can control where the position would be when it will show above any character.

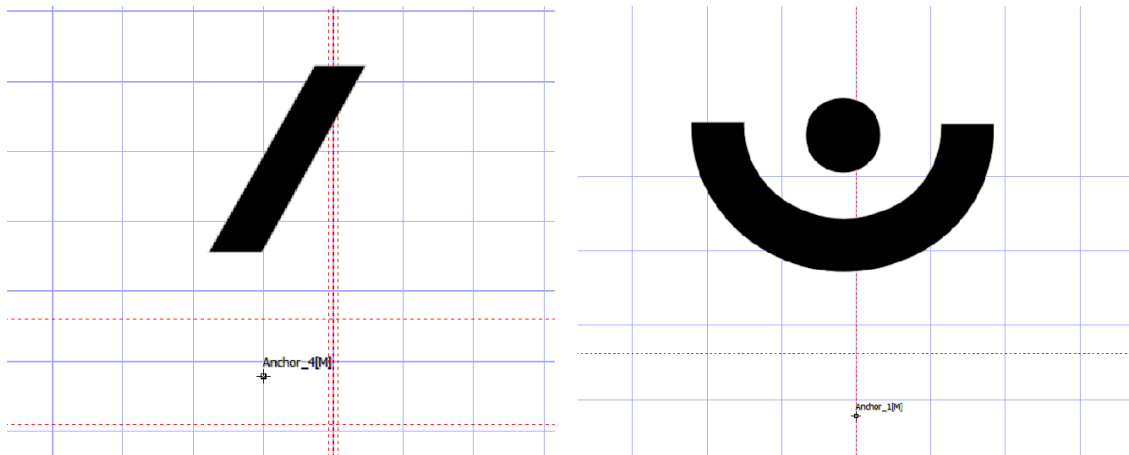


Figure 4.3.19: Anchor Point position for Reph and Chandrabindu

I added above the base feature in the script so that it works in time of typing with that typeface.

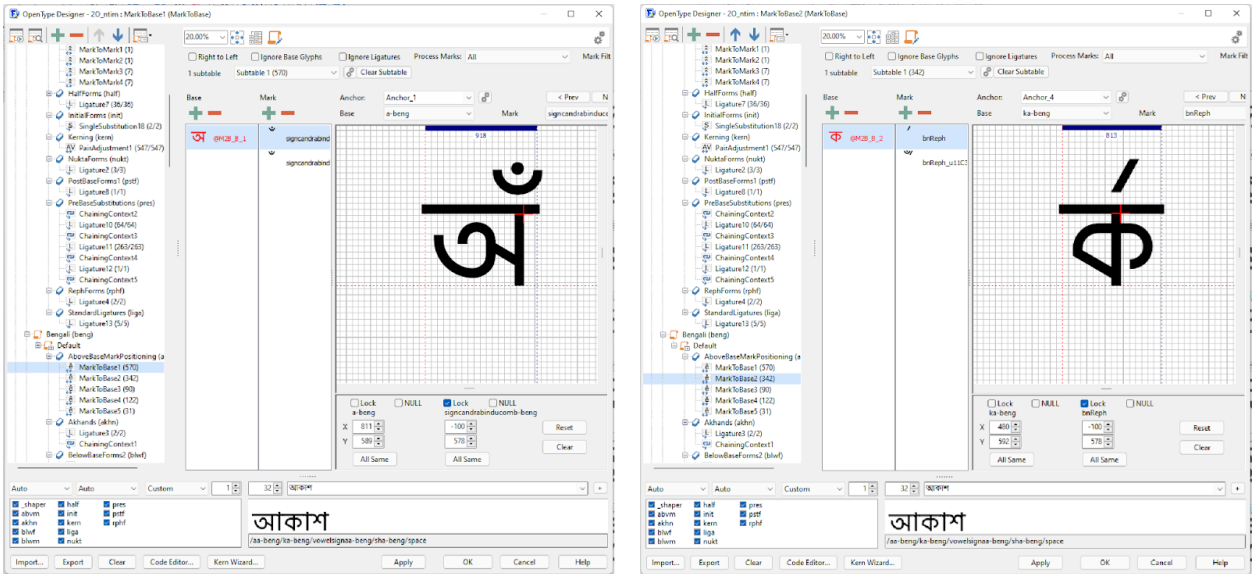


Figure 4.3.20: Above the base feature added in the script

4.4 Kerning

After doing all these things here comes the last and highly important part of developing. Which is adjusting the kerning for all the letters. Kerning is the process of adjusting the space between letters. In that part, I set the space around the character or created a space so that one letter can sit beside another or pair with one another and it doesn't look bad. Kerning takes a lot of time. There is no such tool that can do kerning perfectly. For English, there are some tools available but for Bangla, it has to be done by hand. I adjusted the kerning of the all characters according to my optical satisfaction.

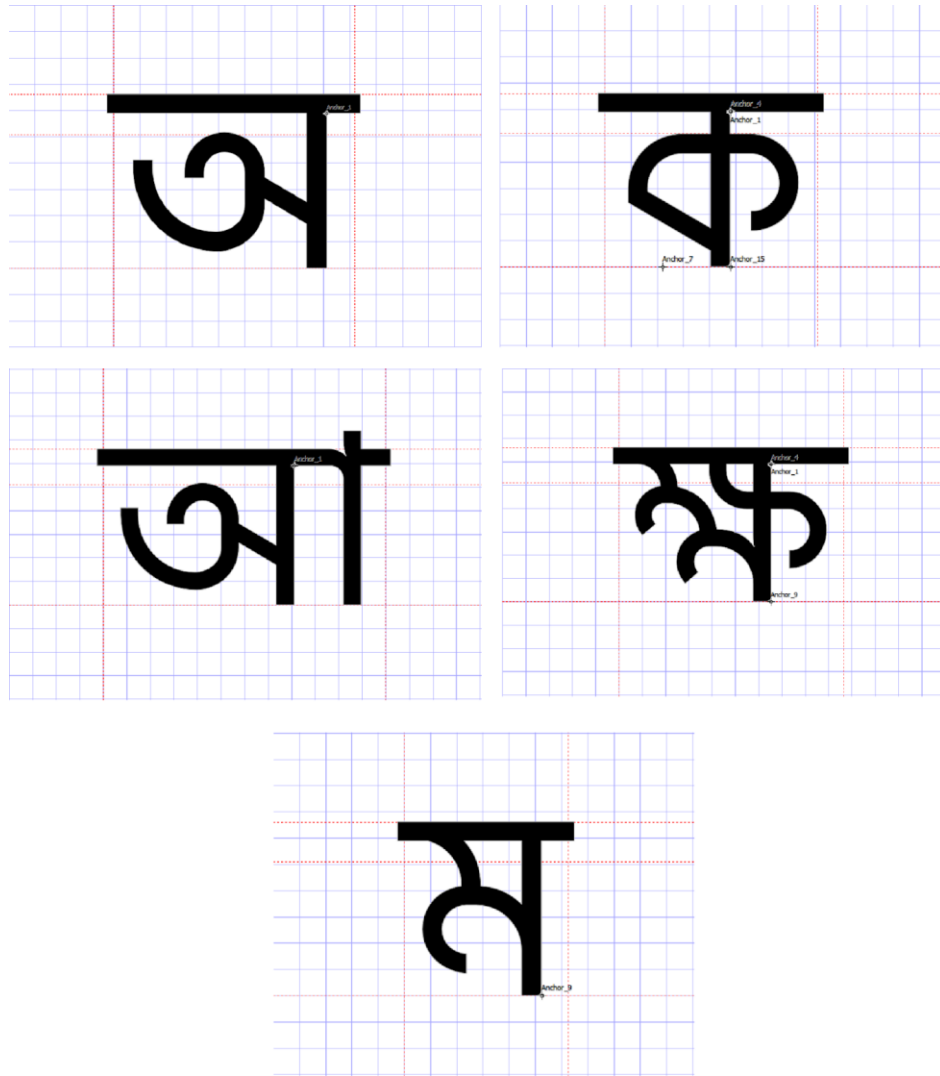


Figure 4.4.1: Kerning in Bengali(Example)

আমার সোনার বাংলা

Figure 4.4.2: Kerning in Bengali (Example)

I also adjusted the kerning for the English characters also. I also adjusted them according to my optical satisfaction.

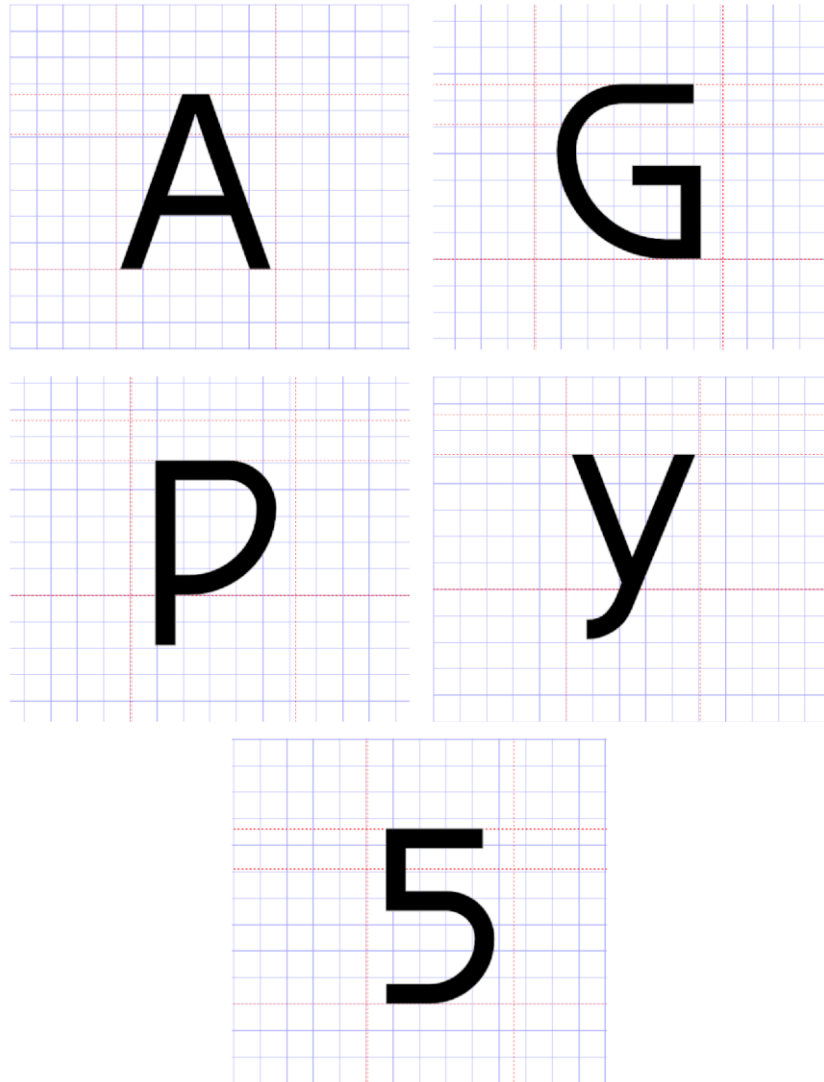


Figure 4.4.3: Kerning example of English character

A quick brown fox

Figure 4.4.4: Kerning in English (Example)

4.5: Exporting Typeface

After doing kerning the last thing to do was exporting the typeface. I exported the typeface as desktop font and also export as a web font. With this my main journey with that project ended. After that I tested that typeface several time and solved some bug also.

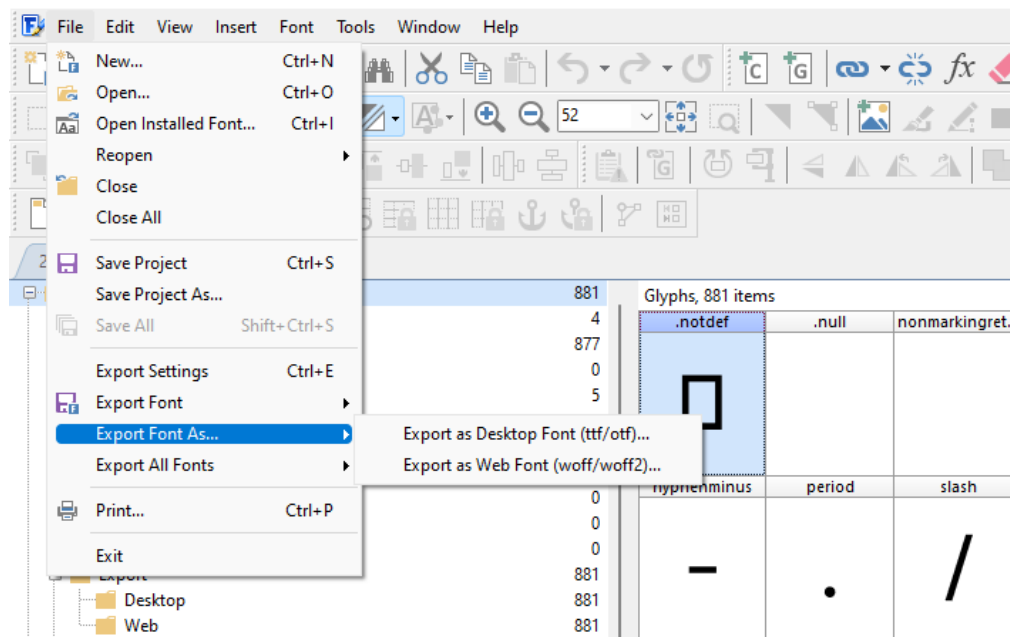


Figure 4.4.5: Exporting Typeface

CHAPTER 5

Discussion

In that project, I designed and developed a San's Serif multilingual typeface. The motive behind that project was to create a typeface which can be used in Website and also can use in design or Visual Communication. In time of design & development I designed and added some characters which are out of use now a days. So, when anyone will read article about those can also see the character on web. In some Bengali I find some problem in time of use and in time of research. After developing my typeface, I tested it several times and tried to keep it as error-free as possible.

Bugs in some existing typeface



Solved in Ontim



Figure 5.1: Solved some known Bugs in my project

CHAPTER 6

Conclusion

This project is an initiative to minimize the shortage of good-quality fonts. This can be used on Websites and in print also. And it will provide our web developer with an option to explore and experiment. As this typeface will be under an open font license it will be free for all to use. I am also trying to publish it in google font library. Google font library is the largest open source font library in today's world. Which will be beneficial for everyone.

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