The aim of this big data project was to create visual art from the genetic information obtained from a 23andMe genetic data sample. The raw data that we used contained almost 600,000 single nucleotide polymorphisms (SNP) which are variants at certain points in the genome in different individuals. The individual nucleotides were converted to a binary value as shown below in *figure 1*. Then the binary values were casted to integer values between \_\_\_\_ and \_\_\_\_. These values are then used to randomly direct the building of a fractal tree using Java. The end goal is to have a tree that is unique to each individual with leaf shape, leaf color, flower shape, flower color, general tree shape, etcetera, determined by the genetic code of the individual. p

|  |  |
| --- | --- |
| A | 00 |
| T | 01 |
| C | 10 |
| G | 11 |
| AA | 0000 |
| AT | 0001 |
| AC | 0010 |
| AG | 0011 |
| TA | 0100 |
| TT | 0101 |
| TC | 0110 |
| TG | 0111 |
| CA | 1000 |
| CT | 1001 |
| CC | 1010 |
| CG | 1011 |
| GA | 1100 |
| GT | 1101 |
| GC | 1110 |
| GG | 1111 |

Figure : Nucleotides and Binary Values