EXHAUSTIVE SEARCH PATTERN CREATION

-- Algorithm --

Search backward from element for first prefix match, augment with next preference suffix alphabet

-- Example 1 --

Alphabet A in {0,1} : |A| = 2
Pattern Length N = 2
String S : |S| = |A|^N + N - 1 = 2^2 + 2 - 1 = 5
Preference Order: 1 > 0
Start: 00

```
0    00        2    11
1    01        3    10
```

S := 00110

-- Example 2 --

Alphabet A in {A,C,G,T} : |A| = 4
Pattern Length N = 3
String S : |S| = |A|^N + N - 1 = 4^3 + 3 - 1 = 66
Preference Order: T > G > C > A
Start: AAA

```
0    AAA    8    TCT    16   TGC    24   GTC    32   AGT    40   GGG    48   CCG    56   GAA
1    AAT    9    CTT    17   GCT    25   TCC    33   GTA    41   GGC    49   CGC    57   AAC
2    ATT    10   TTA    18   CTG    26   CCT    34   TAC    42   GCG    50   GCA    58   ACC
3    TTT    11   TAT    19   TGA    27   CTC    35   ACT    43   CGG    51   CAG    59   CCC
4    TTG    12   ATG    20   GAT    28   TCA    36   CTA    44   GGA    52   AGA    60   CCA
5    TGT    13   TGG    21   ATC    29   CAT    37   TAA    45   GAG    53   GAC    61   CAC
6    GTT    14   GGT    22   TCG    30   ATA    38   AAG    46   AGC    54   ACG    62   ACA
7    TTC    15   GTG    23   CGT    31   TAG    39   AGG    47   GCC    55   CGA    63   CAA
```

S := AAATTTGTTCTTATGGTGCTGATCGTCCTCATAGTACTAAGGGCGGAGCCGCAGACGAACCCACAA