SIGNATURE CREATION USING ALPHABETS, NUMBERS AND COLOURS

HP INC
Signature creation using alphabets, numbers and colours

Abstract

Algorithm to create signature based on name which could be including alphabets, numbers and colours.

Lot of colours to choose from each individual alphabet– A game for generating signatures, that could be a random or a unique signature.

Creating signature for self to be used in Documents, in the header or footer or embossed in the middle of the paper while printing.

The signature could be unique or random based on the colour(s) selected against each alphabet.

Problem Statement

There are multiple solutions available where to print an image as watermark or on other areas like header or footer on every page coming out of the printer.

The generated signature file is either saved as a png/jpeg file on the printer system memory or a method to generate image.

There are no techniques defined, where there is a unique way to define a self-derived signature based on the name of the person or use a combination of alphabets, numbers and colours. This signature can be used as signature on the documents being printed from customer printer.

This approach can also be used to generate future passwords which includes colour as another component apart from alphabets, numbers and special characters.

Solution

A unique way of generating signature on printers or devices with Windows/Linux/Mac OS and having that signature on every document that is printed from that printer. The signature being watermarked or printed as header or footer.

Infinity choices and ability to generate infinity signatures based on the combination of alphabets, numbers and colours.

Figure 1: A sample UI created to demonstrate how signatures could be generated.

As alphabets or numbers are typed in the box (as in the UI), the colours corresponding to the alphabets are highlighted for the user to pick, to create their signature. The FIGURE 1 UI is showing only 2 colours per alphabet, in actual there are many colours for each alphabet for user to select from.
Figure 2 shows highlighting the colours as per the alphabets selected by the user.

May be a dropdown menu for each colour for better representation, could be incorporated for real implementation.
As in Figure 3: “Create Signature” button is clicked, 3 different signature patterns can be generated, with each alphabet written with that selected colour are:

1. Lift shifted or
2. Superimposed on top of each other (no shift Signature in figure 3) or
3. Right shifted.

The options of having the generated signatures being left shift or superimposed on top of each letter or right shift is the choice the user can have to have their signature.

When superimposed, meaning each letter written on top of another, there is likelihood of some alphabet not visible as the other letter might cover the previous letter, as an example, O will be completely invisible when the next coming letters has either Q or B etc.

The left shifting or right shifting will help in having uniqueness of every alphabet or numerical value.
Figure 4 shows the algorithm to generate the alphabet or number based on the selected alphabet or number in the sequence of the typed alphabets or numbers from left to right.

To generate “Q” for e.g. the segments 1, 2, 3, 4, 5, 6, 7, 24 are drawn as in FIGURE 4 with selected colour for Q.

To generate “1” for e.g. the segments 12, 18, 4, 5 as in FIGURE 4 are drawn with the selected colour or if there is no colour for the corresponding number(s) then drawn with a default colour as programmed.
Advantages

- This design has potential uniqueness of combining colour to the current existing passwords which we are currently doing with a combination of alphabets, numbers and special characters.
- An application on laptops/Desktops with different operating systems, to generate a kind of signature against their names with colours.
- May be in future, these signatures could replace bar codes.

Next Steps

With Quantum computers able to compute what generic computers of today are not able to compute, it is said that current encryption methods would become obsolete.

Adding colour as another dimension to current security features/passwords enhances the security and decryption much harder.

There is huge potential to create future encryption and generating passwords adding colours as another dimension for creating the hashes.

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