Abstract

CAPTCHA is a technology which has its base in a test called the Turing Test. Alan Turing, proposed this test as a way to examine whether or not machines can think or appear to think like humans. The main purpose of a CAPTCHA is to block form submissions from spam bots—that is automated scripts. Various types of CAPTCHAs are used, which mostly requires users to enter the strings of characters that appear in distorted form on the screen. These types of distorted stings are unable to understand by bots but human can. The CAPTCHA types are either text based or image based. In this paper, a new color based CAPTCHA is described, which provides color based images to human and human will answer to interrogator with color name or so on the question asked during turing test. These colored images can have single color image, more than one color image or it can have images with objects (like monitor, car, flower etc). For these types of questions, the computer machine will be unable to answer and it means unable to break CAPTCHA. This paper describes in detail the proposed CAPTCHA technology principle, method of implementation, variations and comparison of the accuracy rates. We conducted various experiments to measure the viability and usability of this CAPTCHA approach. An accuracy of 100%, 95% and 90% is observed with single color, multi color and color image based CAPTCHAs respectively.
Design and Comparison of Advanced Color based Image CAPTCHAs

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**Index Terms**

Computer Science  
Security

**Keywords**

CAPTCHA  Image Processing  Spam  Automated Attacks  Character Recognition

Usability

Automated program