CAPTCHA CODE

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Agenda

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- Types of CAPTCHA
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Definition

CAPTCHA stands for

"**C**ompletely **A**utomated **P**ublic **T**uring Test to tell **C**omputers and **H**umans **A**part**"**

A program that can tell whether its user is a human or a computer.

Need of CAPTCHA

The progress of Internet, Web security has become an important issue. There are too many malicious threats across the Internet. One such threat is the Bot.

A Bot is a malicious program which has the capability to run automated tasks over the network and thus creating problem in the network.

CAPTCHA is one such shield which can be used as a protection from these malicious programs like Bot.

Types of CAPTCHAs

- Text based
  - Gimpy
  - Gimpy-r
  - Simard's
- Image based
  - Bongo
  - Pix
- Audio based

Text based

Text based CAPTCHAs is a very simple to implement. It is very effective and requires a large question bank of the words, alphabets and numbers.

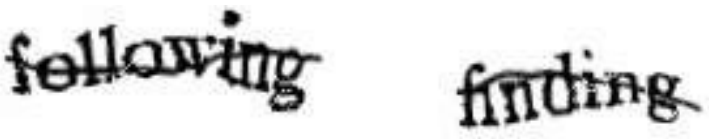
Text Based CAPTCHAs

Gimpy

--Pick a word or words from a small dictionary.

--Distort them and add background.

Example



Text Based CAPTCHAs

Gimpy-r

--Pick random letters.

--Distort them, add background.

Example

Text Based CAPTCHAs

Simard's

-- Pick random letters and numbers.

-- Distort them and add arcs.

Example

Image Based CAPTCHAs

Image-based CAPTCHAs are challenge-tests in which the users have to guess those images that have some similarity.

Image Based CAPTCHAs

- Bongo
  - Display two series of blocks.
  - User must find the characteristic that sets the two series apart.
  - User is asked to determine which series each of four single blocks belongs to.

Image Based CAPTCHAs

Example

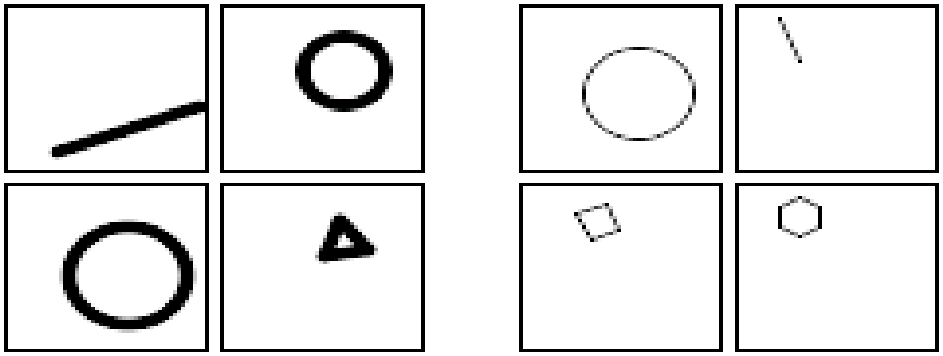


Image Based CAPTCHAs

- PIX
  - Create a large database of labeled images.
  - Pick a concrete object.
  - Pick some images of the object from the images database.
  - Distort the images.
  - Ask the user to pick the object for a list of words.

Image Based CAPTCHAs

Example

The Images need to be randomly distorted

Audio Based CAPTCHAs

Audio-based CAPTCHAs are based on the sound-based systems. These CAPTCHAs are developed for visually disabled users.

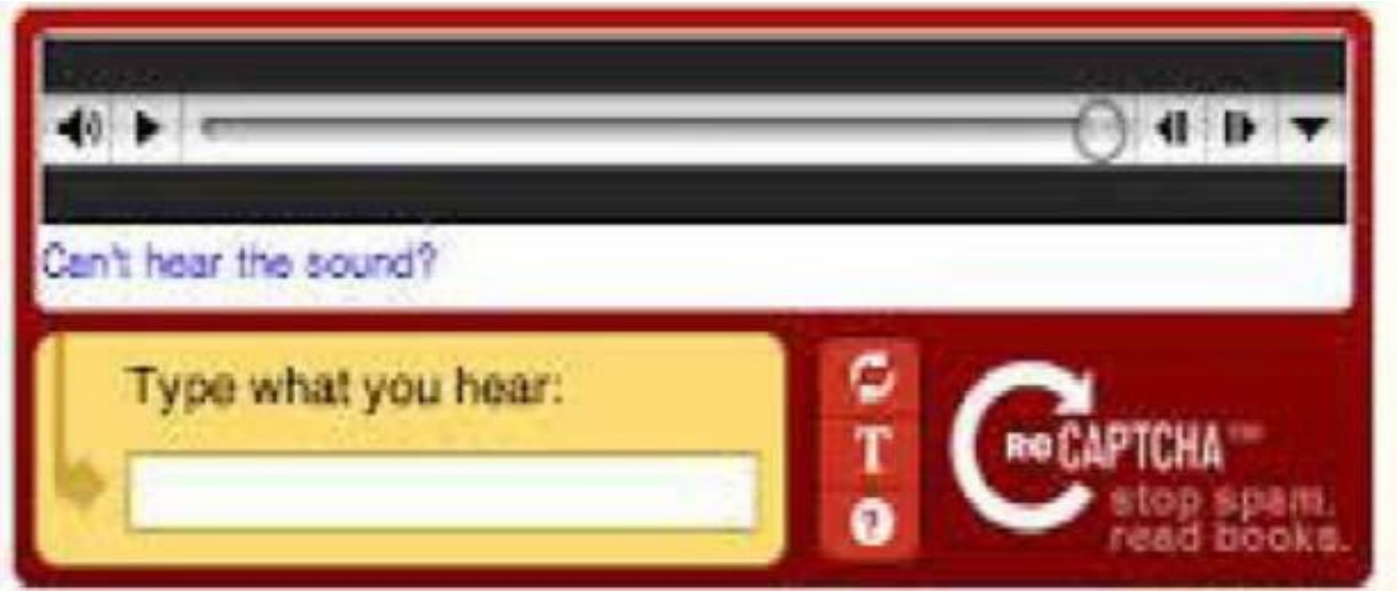
In this type of CAPTCHA, first the user listens and after that submits the spoken word.

Audio Based CAPTCHAs

- Pick a word or a sequence of numbers at random.
- Render them into an audio clip using a TTS software.
- Distort the audio clip.
- Ask the user to identify and type the word or numbers.

Audio Based CAPTCHAs

Example



Drawbacks

1. **Text based CAPTCHA**

1. In text images, user has some problem to identify the correct text or characters.
    i. Multiple fonts.
    ii. Font size.
    iii. Blurred Letters.
    iv. Wave Motion.
2. It can be easily identified by OCR techniques.

Drawbacks

2. **Images based CAPTCHA**

Some users face problem of image identification who have low vision or due to blurring of images.

Drawbacks

3. **Audio based CAPTCHA**

1. It is available in English therefore end user must have a comprehensive English vocabulary.

2. Character that have similar sound.

Applications

1. **Registering the web forms**: There are many sites on the Internet which provide free registration to avail their services. But they are affected to web bots. It may come into the form of scripts which can register thousands of email accounts on the internet, thus wasting the precious space of web.

Applications (Cont.)

2. **Online polling sites:** These sites takes user's response or feedback in the form of questionnaires. To ensure that only human makes the response they make use of CAPTCHA.

3. **E-Ticketing.**

Applications (Cont.)

4. **Preventing E-mail spam.**

Conclusion

1. CAPTCHAs are an effective way to counter bots & reduce spam.

2. They help advance AI knowledge.

3. Some issues with current implementations represent challenges for future improvements.

References

http://www.captcha.net

http:// www.alipr.com/captcha

Thank You