Digicash

Murat Osmanoglu

MONEY

Money is the award of succes
Sakıp Sabancı

Money money money!
Napoleon Bonaparte

For a man is rich in proportion to the number of things which he can afford to let alone.
Henry David Thoreau

MONEY

- any item or verifiable record that is generally accepted as payment for goods and services

Its Functions

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- measure of value

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- measure of value
- store of value

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- medium of exchange

Its Properties

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- hard to forge

Barter

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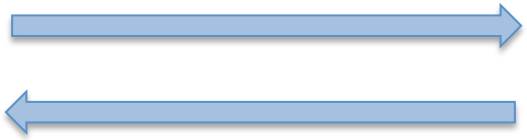

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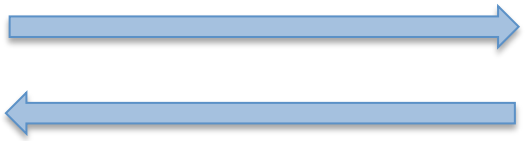

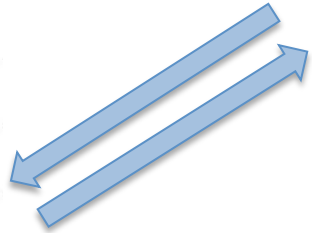

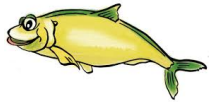

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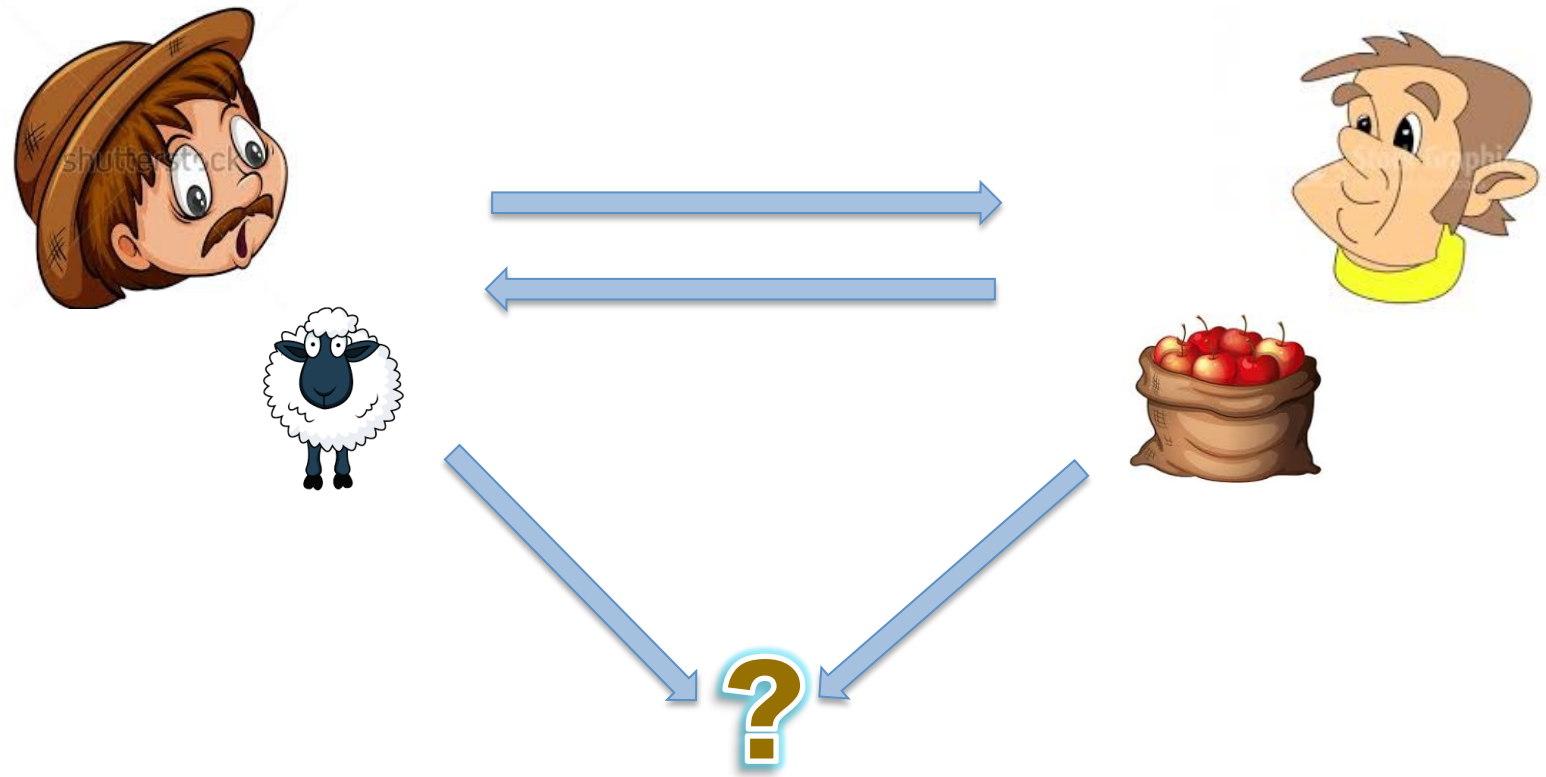

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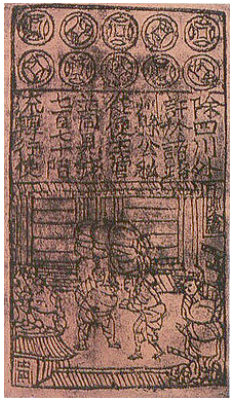

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- first paper money used in A.D 806
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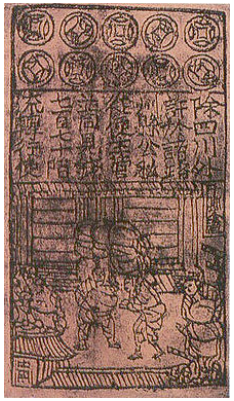

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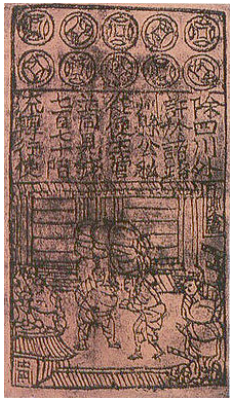

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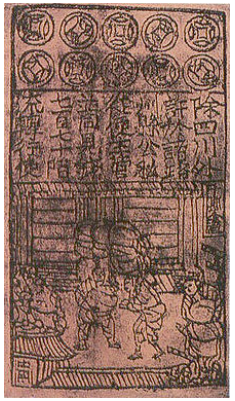

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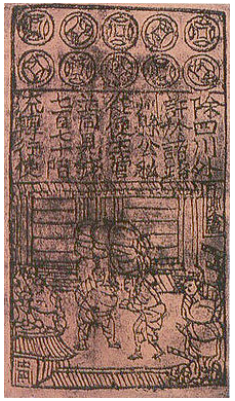

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- limited in supply ✔
- hard to make false ✔

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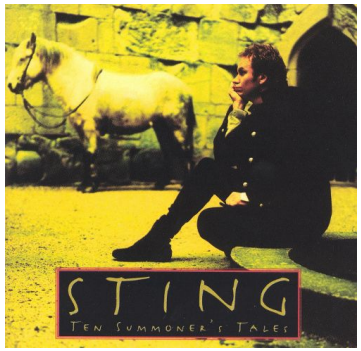
- first secure e-commerce transaction made through NetMarket by Khan in August 1994



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BLIND SIGNATURES FOR UNTRACEABLE PAYMENTS

David Chaum

Department of Computer Science
University of California
Santa Barbara, CA

INTRODUCTION

Automation of the way we pay for goods and services is already underway, as can be seen by the variety and growth of electronic banking services available to consumers. The ultimate structure of the new electronic payments system may have a substantial impact on personal privacy as well as on the nature and extent of criminal use of payments. Ideally a new payments system should address both of these seemingly conflicting sets of concerns.

On the one hand, knowledge by a third party of the payee, amount, and time of payment for every transaction made by an individual can reveal a great deal about the individual's whereabouts, associations and lifestyle. For example, consider payments for such things as transportation, hotels, restaurants, movies, theater, lectures, food, pharmaceuticals, alcohol, books, periodicals, dues, religious and political contributions.

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BLIND SIGNATURE CRYPTOSYSTEMS

The new kind of cryptography will be introduced first in terms of an analogy and then by description of its parts, their use, and the resulting security properties. No actual example cryptosystem is presented.

Basic Idea

The concept of a blind signature can be illustrated by an example taken from the familiar world of paper documents. The paper analog of a blind signature can be implemented with carbon paper lined envelopes. Writing a signature on the outside of such an envelope leaves a carbon copy of the signature on a slip of paper within the envelope.

Consider the problem faced by a trustee who wishes to hold an election by secret ballot, but the electors are unable to meet to drop their ballots into a single hat. Each elector is very concerned about keeping his or her vote secret from the trustee, and each

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  - Payer provides s''(x) to a payee to make a payment

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  - Payee sends s''(x) to bank

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- Bank checks whether x on the list or not and stops if it is
- Bank credits account to payee

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Untraceable Electronic Cash †
(Extended Abstract)

David Chaum[1] *Amos Fiat*[2] *Moni Naor*[3]

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[2] Tel-Aviv University
Tel-Aviv, Israel
[3] IBM Almaden Research Center
650 Harry Road, San Jose, CA 95120

Introduction

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