

# Homework 1

Zhehao Yu

# The development of home computer memory

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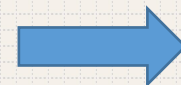
# 1

## The history of memory

**30pin SIMM**  
(1982)



**72pin SIMM**  
(1988-1990)



**EDO DRAM**  
(1991-1995)



**SDRAM**  
(1991-1995)



**Rambus DRAM**



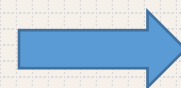
**DDR**



**DDR2**



**DDR3**



**DDR4**

## 2

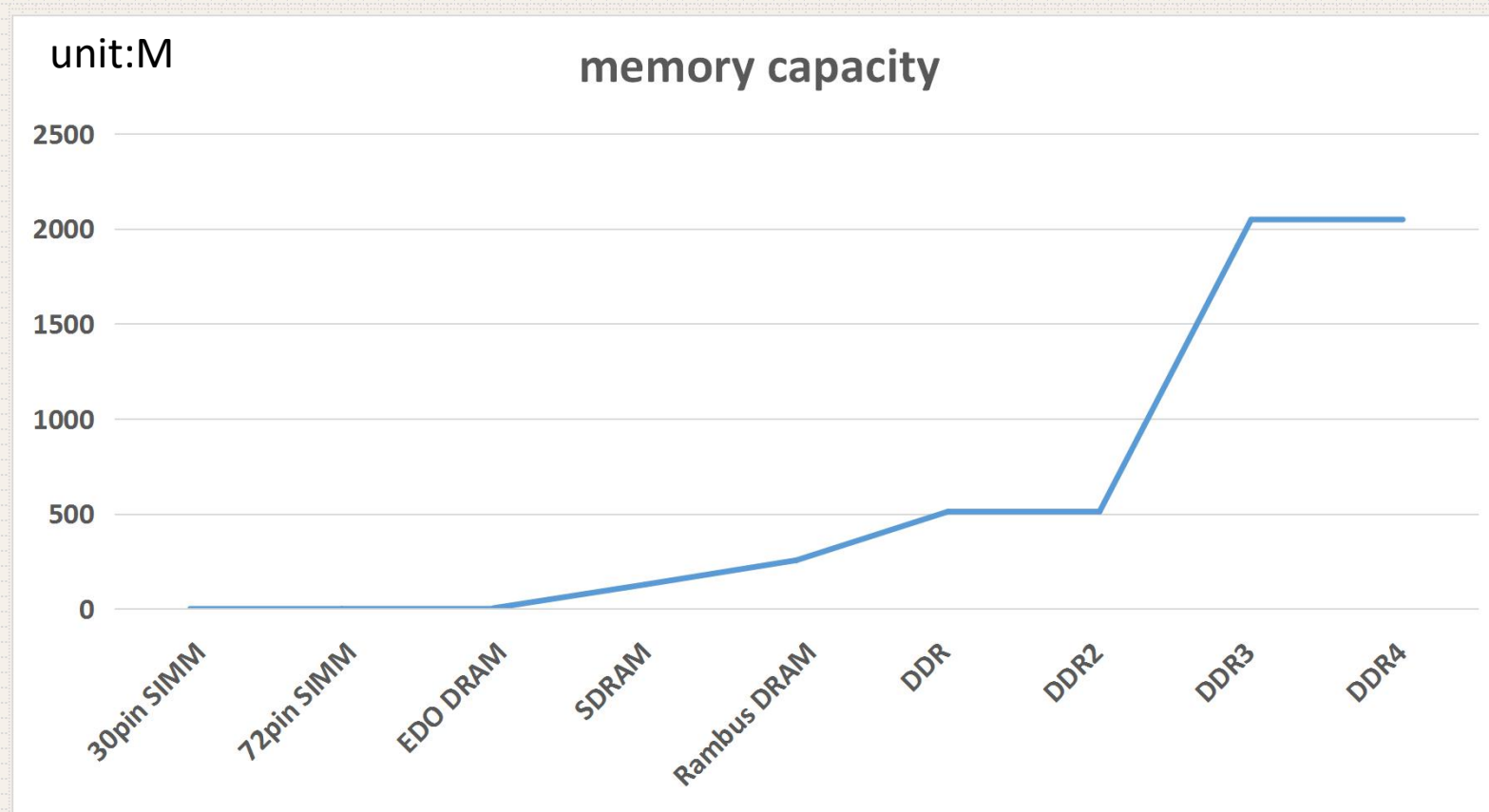
## Main data

<b>memory</b>	30pin SIMM	72pin SIMM	EDO DRAM	SDRAM	Rambus DRAM	DDR	DDR2	DDR3	DDR4
<b>memory capacity</b>	256KB	512KB	4M	128M	256M	512M	512M	2GB	2GB
<b>memory bandwitdth</b>			32bit/s	64bit/s	1064M/s		3.2GB/s		



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## Figure



# Logistic regression

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# 1

## Introduction of the Logistic regression

In statistics, logistic regression, or logit regression, or logit model is a regression model where the dependent variable (DV) is categorical. This article covers the case of a binary dependent variable—that is, where the output can take only two values, "0" and "1", which represent outcomes such as pass/fail, win/lose, alive/dead or healthy/sick. Cases where the dependent variable has more than two outcome categories may be analysed in multinomial logistic regression, or, if the multiple categories are ordered, in ordinal logistic regression. In the terminology of economics, logistic regression is an example of a qualitative response/discrete choice model.

Logistic regression was developed by statistician David Cox in 1958. The binary logistic model is used to estimate the probability of a binary response based on one or more predictor (or independent) variables (features). It allows one to say that the presence of a risk factor increases the odds of a given outcome by a specific factor.

## 2

## Fields and example applications

Logistic regression is used in various fields, including machine learning, most medical fields, and social sciences. For example, the Trauma and Injury Severity Score (TRISS), which is widely used to predict mortality in injured patients, was originally developed by Boyd et al. using logistic regression. Many other medical scales used to assess severity of a patient have been developed using logistic regression. Logistic regression may be used to predict whether a patient has a given disease (e.g. diabetes; coronary heart disease), based on observed characteristics of the patient (age, sex, body mass index, results of various blood tests, etc.).



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## Fields and example applications

Another example might be to predict whether an American voter will vote Democratic or Republican, based on age, income, sex, race, state of residence, votes in previous elections, etc. The technique can also be used in engineering, especially for predicting the probability of failure of a given process, system or product. It is also used in marketing applications such as prediction of a customer's propensity to purchase a product or halt a subscription, etc. In economics it can be used to predict the likelihood of a person's choosing to be in the labor force, and a business application would be to predict the likelihood of a homeowner defaulting on a mortgage. Conditional random fields, an extension of logistic regression to sequential data, are used in natural language processing.