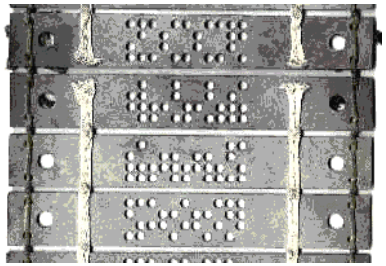
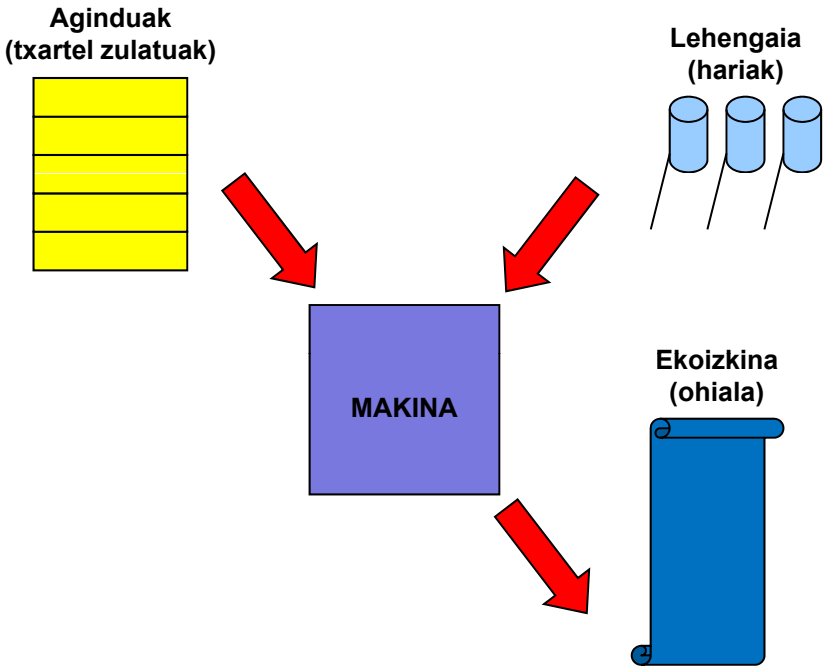
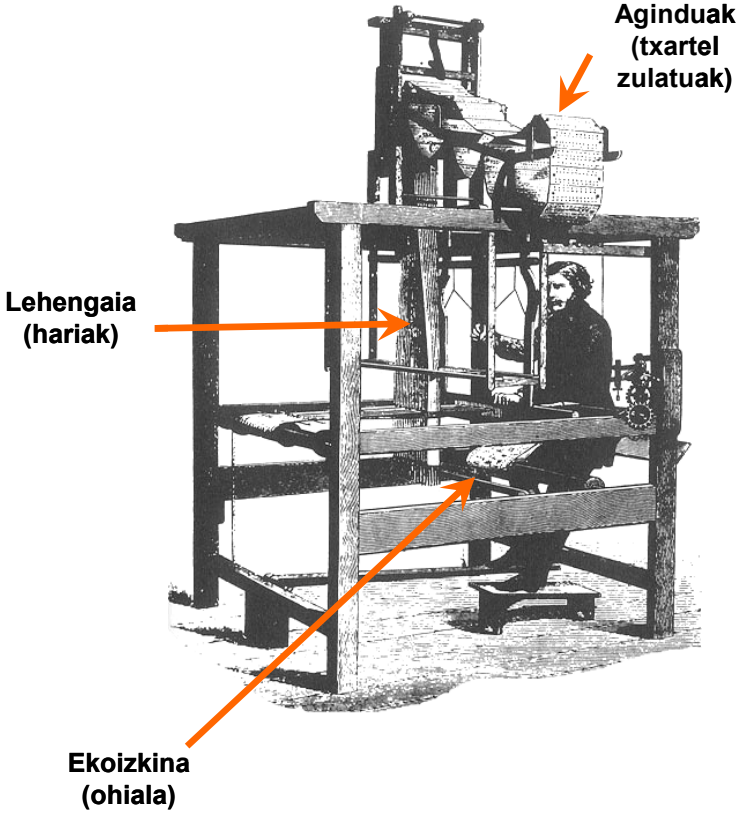
Aginduak burutzen dituzten makinak



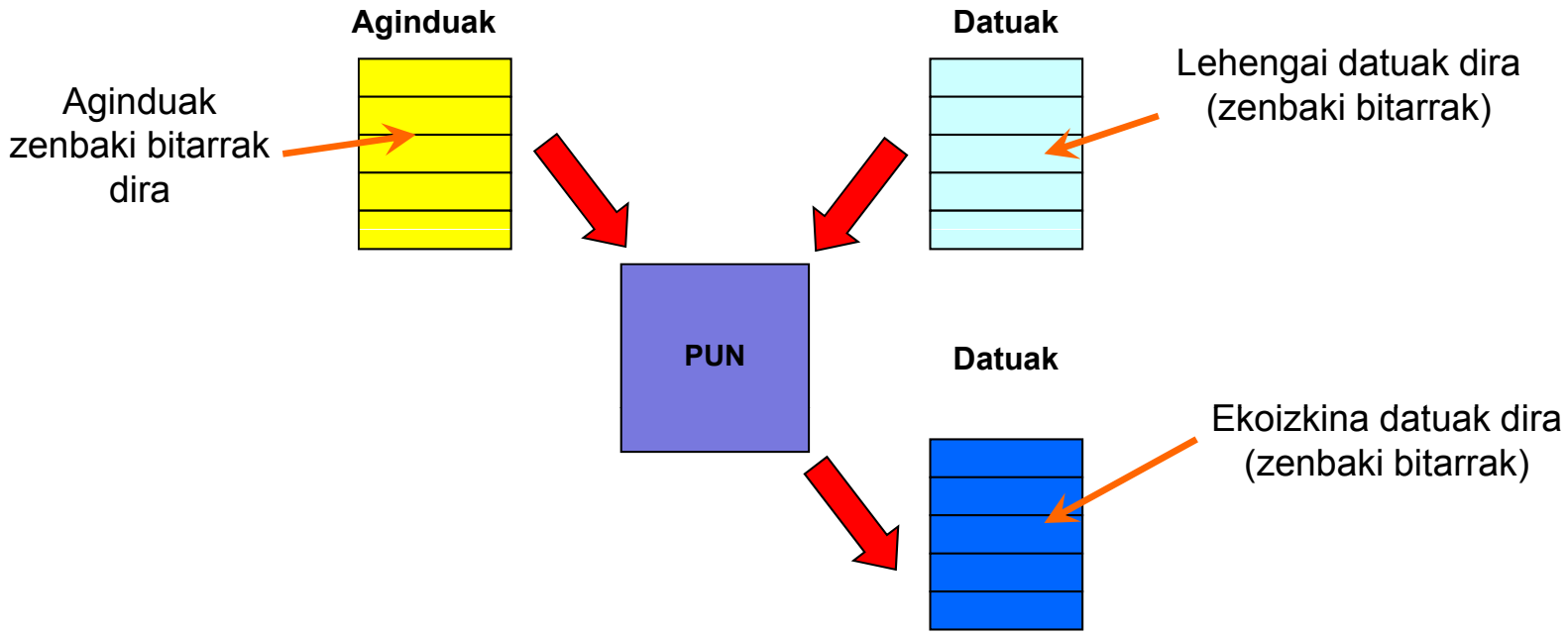




Aginduak burutzen dituzten makinak

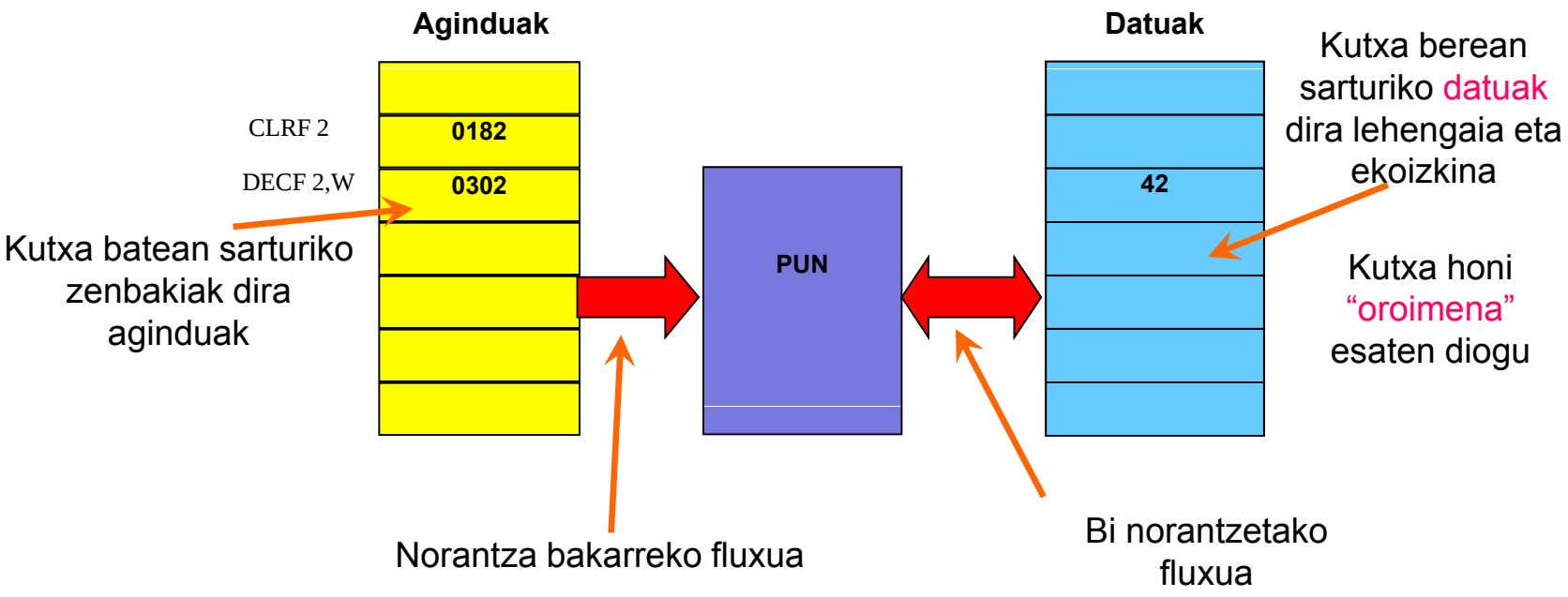
Ordenagailuak:

Makina elektronikoak



Arkitekturak

Harvard Arkitektura

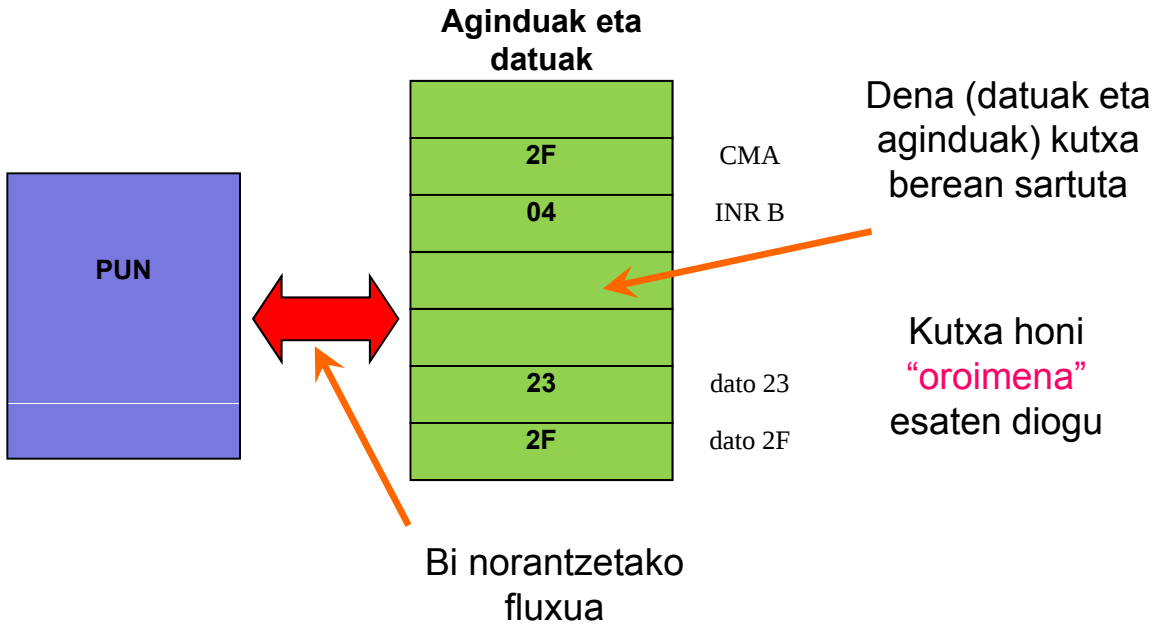


Howard Aiken

Harvard University

Arkitekturak

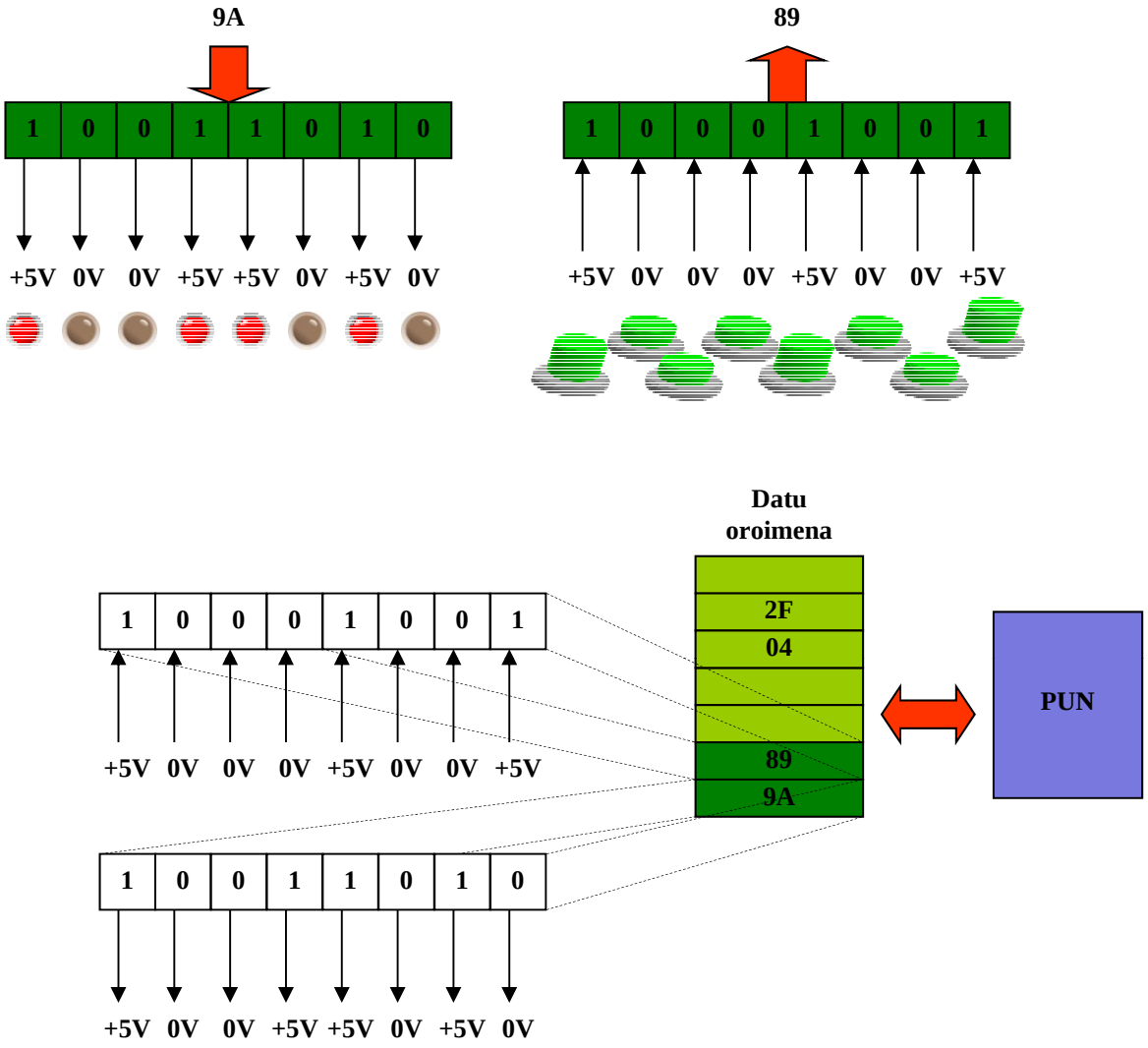
Von Neumann arkitektura



John von Neumann

University of Pennsilvania

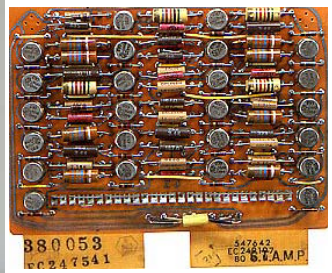
Portuak

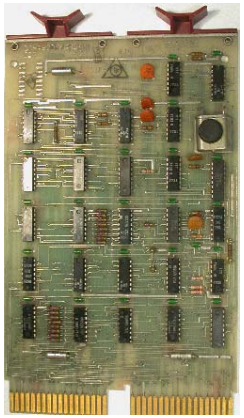


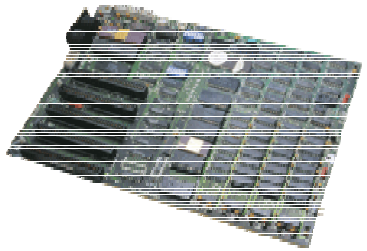
Oroimeneko eremu bereziek, kanpora kablez lotuek, mundu errealari eragiten diote

Eremu horiei "portuak" esaten diegu

Ordenagailuen bilakaera: teknologia - PUN

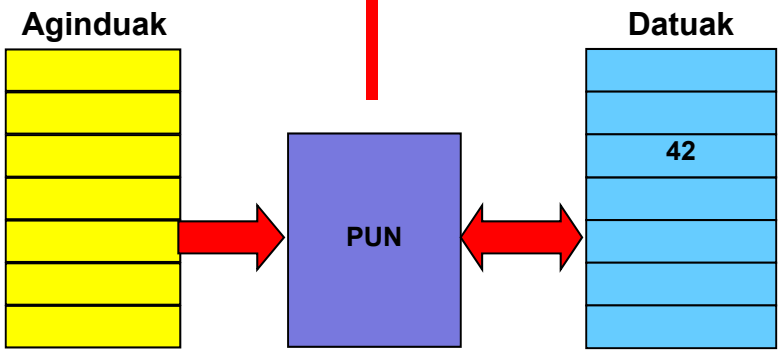




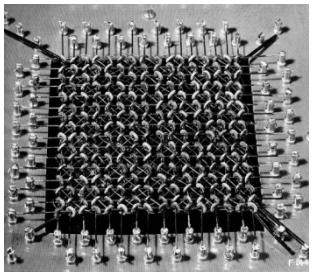


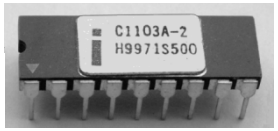
Balbulak Transistoreak Z. integratuak Mikroprozesadoreak System on Chip

1950 1960 1970 1980 1990 2000 2010



Ordenagailuen bilakaera: oroimenak





Paperezko zinta

Zinta magnetikoa

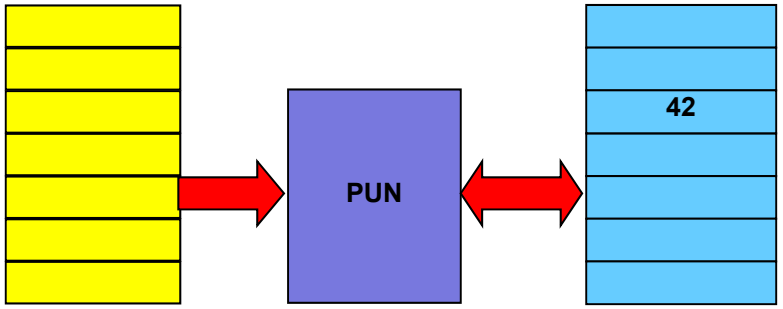
Disko magnetikoak

Ferrita-nukleoezko oroimena

Erdieroalezko oroimena

Oroimen-moduluak

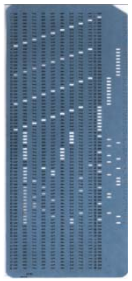
1950 1960 1970 1980 1990 2000 2010



Arkitekturak: sarrera-irteeren bilakaera

Tresna beraren bi tankerak dira teletipoa eta terminala (hyperterminala da egungo tankera)

Hautatzaileak eta argiak



Txartel zulatuak

Teletipoa (Teletype)

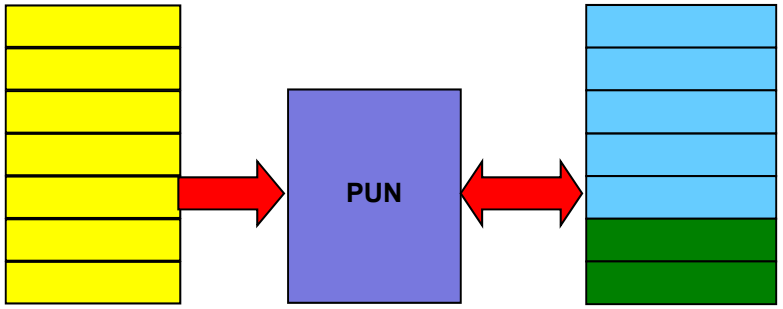
Terminalak (VT-100)

Irudi-terminalak (Tektronix 4010)

Sagua

Ukipen pantailak

1950 1960 1970 1980 1990 2000 2010



Ordenagailuen bilakaera: sistemak

Lehenengoak, balbulezkoak

Transistorezkoak

Zirkuitu integratuezkoak (indarretxe nuklearren % 80ak oraindik erabiltzen dute PDP11)

Idazmahaiko lehenengo ordenagailuak

Olivetti 101

Lehenengo norberaren ordenagailuak

Lehenengo tresna-anitz: ordenagailua, irratia, telefonoa …

Eniac

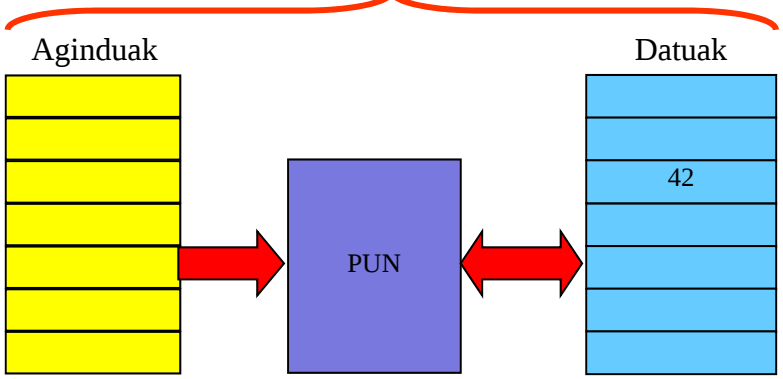
IBM 7090

Digital PDP11

IBM-PC

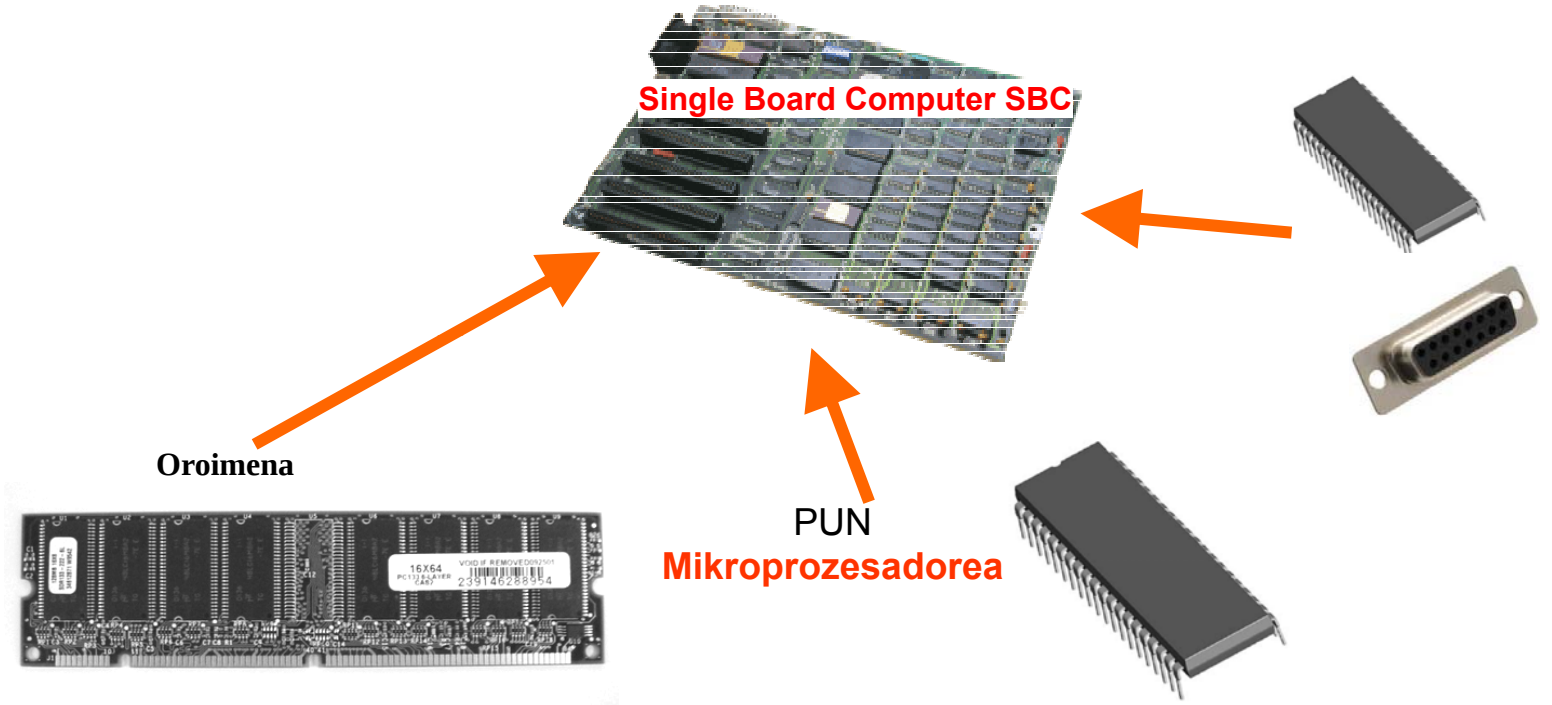
Apple iPhone

1950 1960 1970 1980 1990 2000 2010



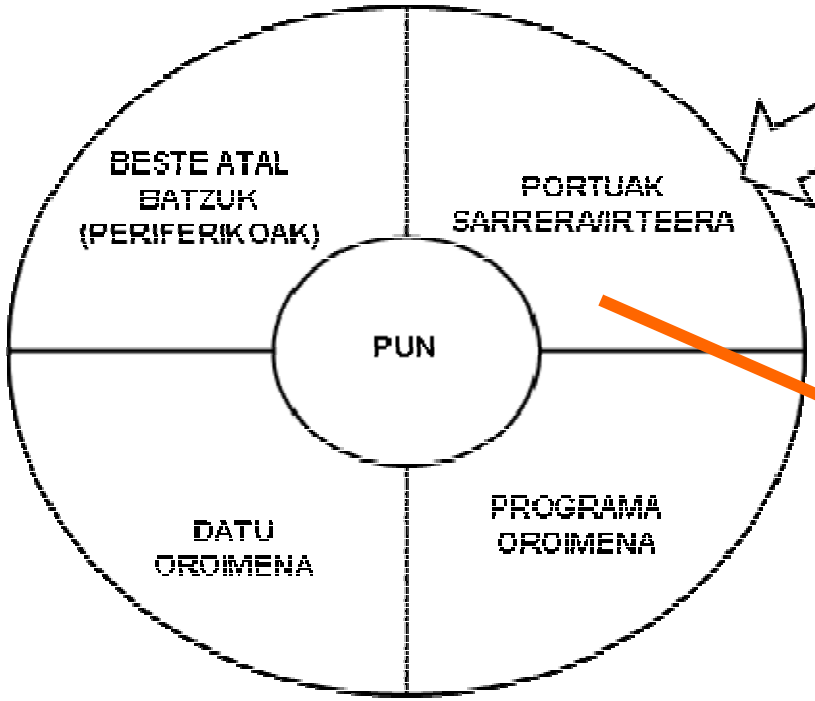
Mikroprozesadoreak, mikrokontroladoreak eta SoC

Gaur egun, portuak, oroimenak eta mikroprozesadoreak SBC plaka batean konbinatuz sortzen dituzte ordenagailuak

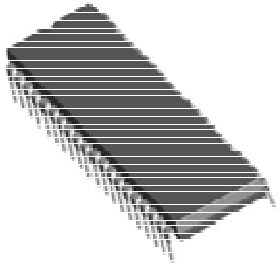


Mikroprozesadoreak, mikrokontroladoreak eta SoC

Oso aplikazio berezi batzuek oroimen eta portu gutxi behar dute; horiek integratu ahal dituzte mikrokontroladoreek

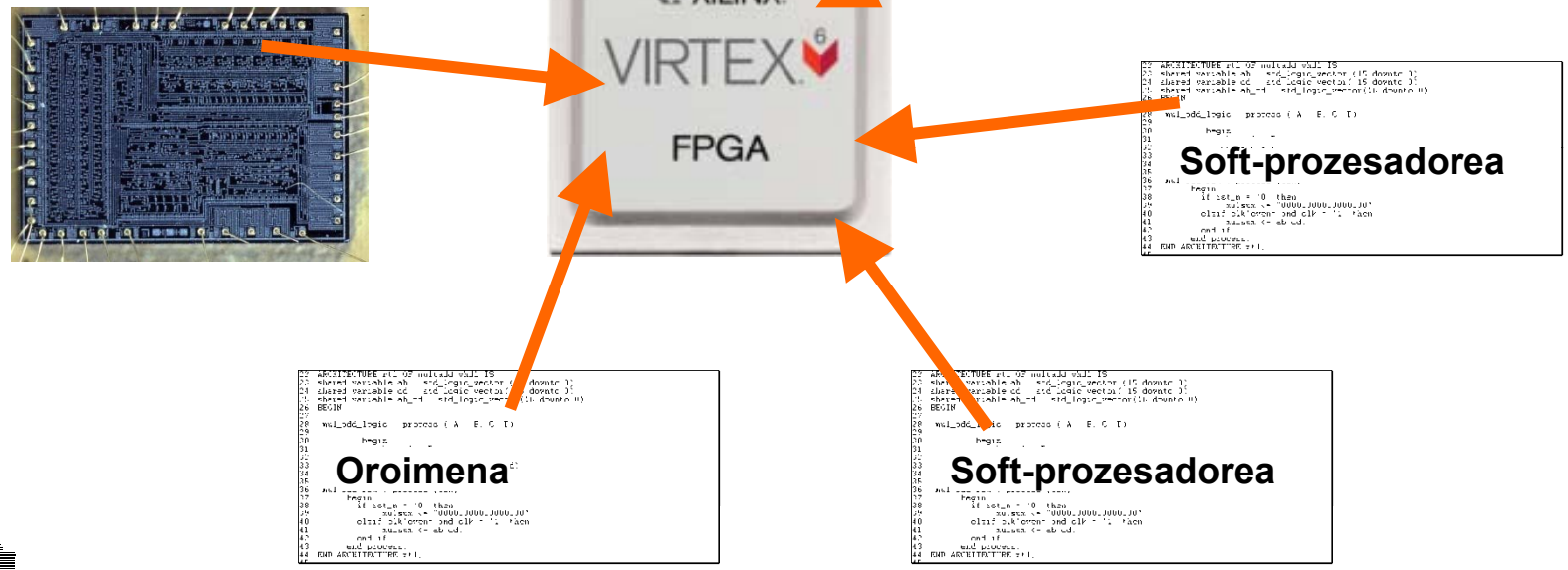


PUN+oroimena+portuak
Mikrokontroladorea



Mikroprozesadoreak, mikrokontroladoreak eta SoC

FPGA gailuetan sortzen dituzte oso ahalmen handiko aplikazio batzuk, batez ere, telekomunikazioetan eta prozesatze aurreratuan; FPGA horietan integratzen da sistema osoa: System-on-Chip



PUN eta prozesadoreak

PUN eta prozesadorea bereizi behar ditugu.
PUNak adierazten du zein hizkuntzatan hitz egiten duen sistemak.

Prozesadorea	PUN	Mota	Arkitektura	Ekoizlea
PDP-11/20	KA11	Minikonputagailu	Von Neumann	Digital Equipment Corp.
PDP-11/34	KA11	Minikonputagailu	Von Neumann	Digital Equipment Corp.
i80C88	x86	Mikroprozesadore	Von Neumann	Intel
i80C86	x86	Mikroprozesadore	Von Neumann	Intel
PIC16F873	PIC16	Mikrokontroladore	Harvard	Microchip
PIC16F874	PIC16	Mikrokontroladore	Harvard	Microchip
i80C51	8051	Mikrokontroladore	Harvard	Intel
MCS1200Y	8051	Mikrokontroladore	Harvard	Texas Instruments