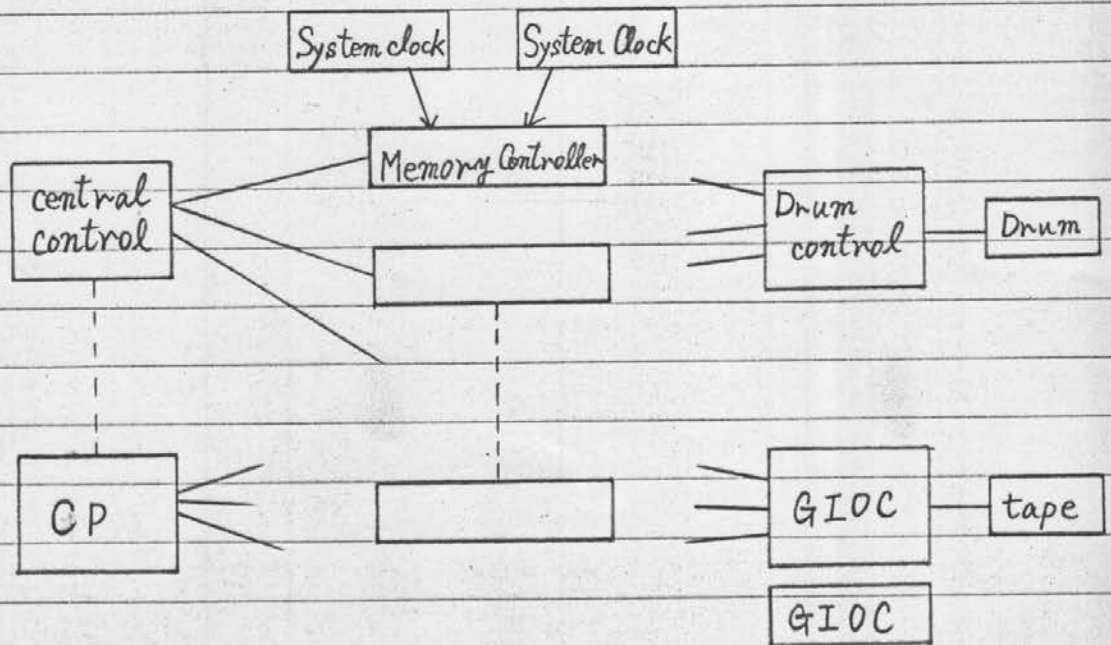
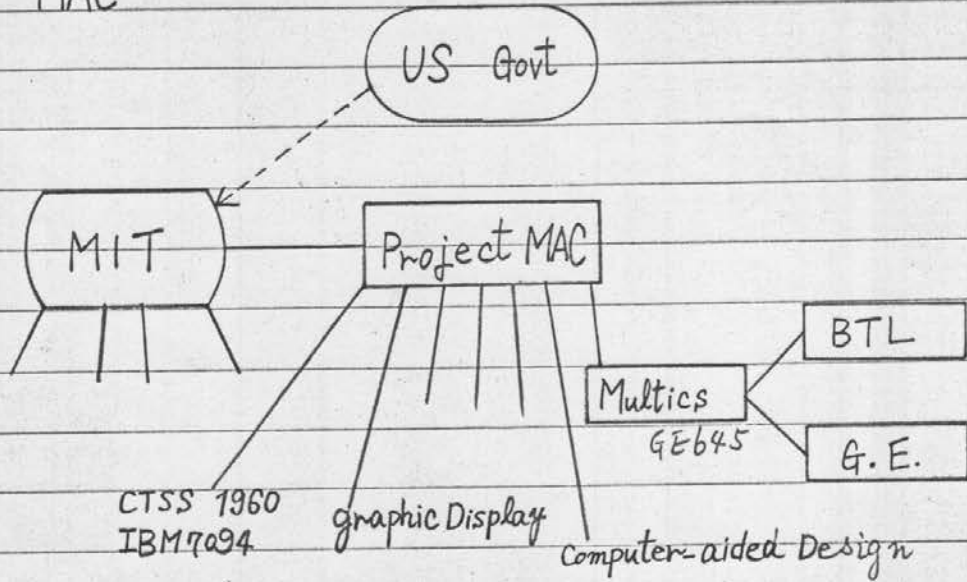
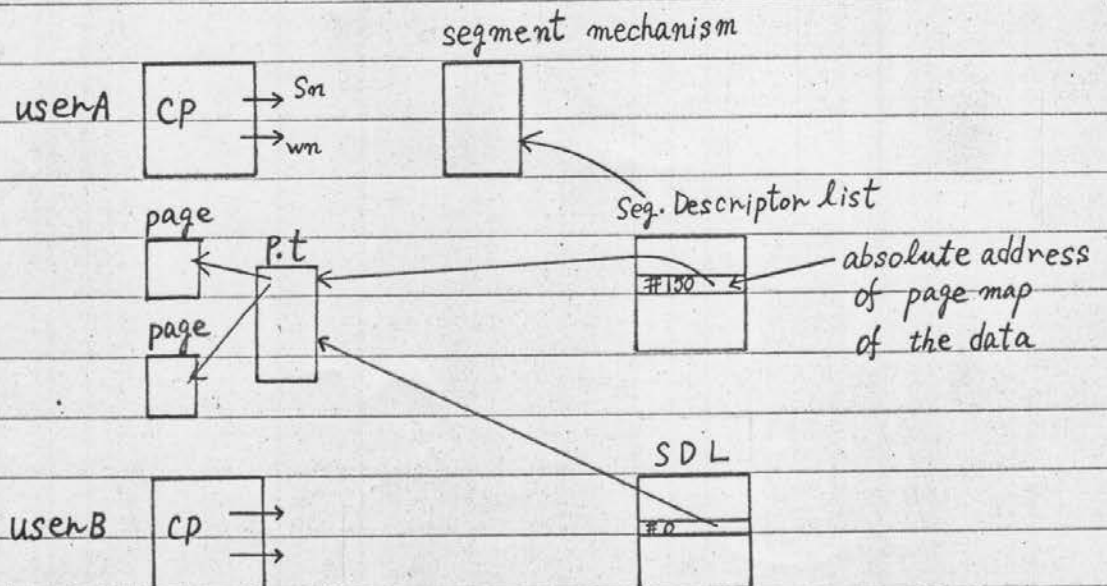
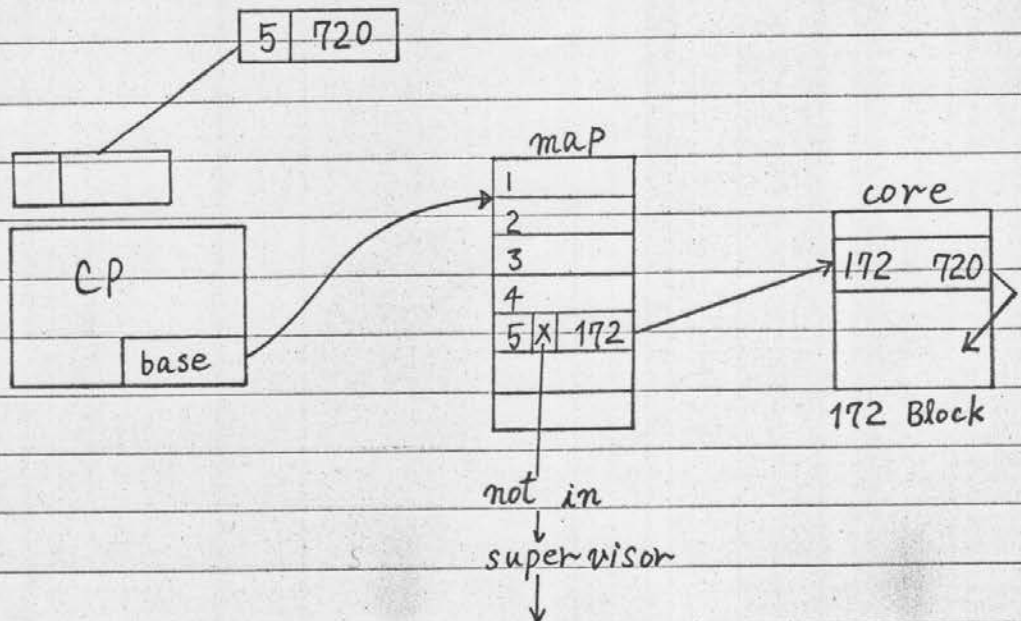
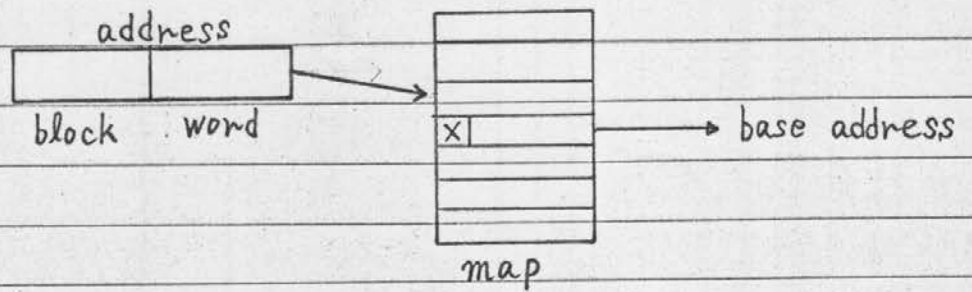


Pictures on Lectures

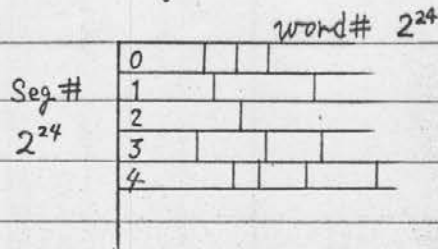
by J. H. Saltzer

Project MAC



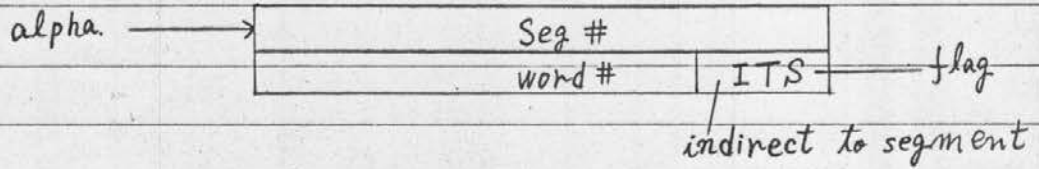


Two-dimensional address space

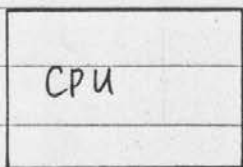


Indirect address

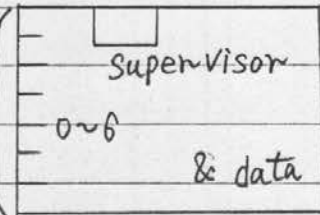
LDA alpha, *



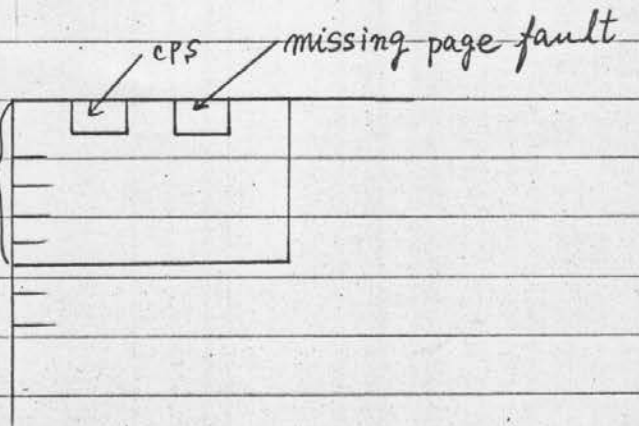
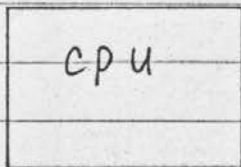
user #1

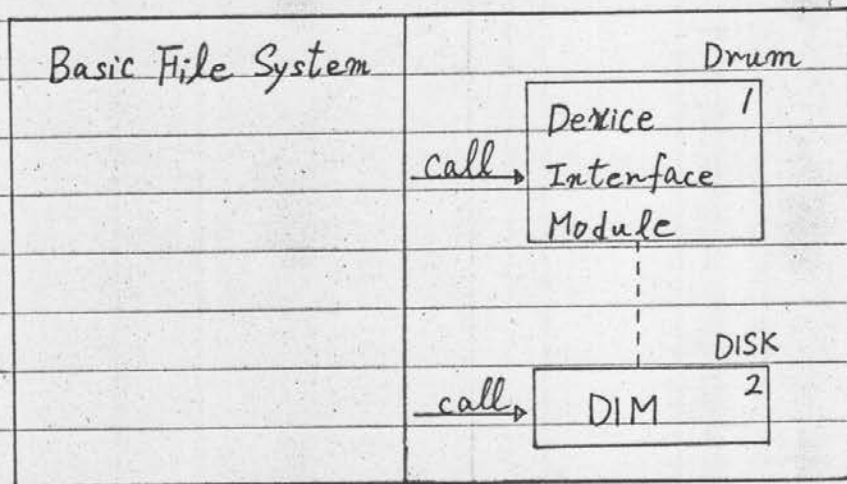
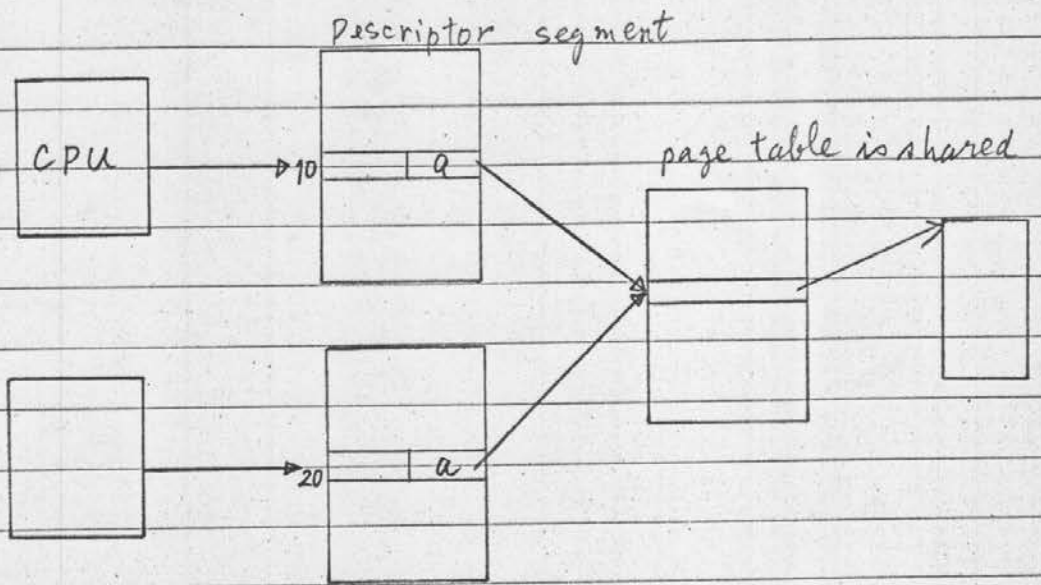


Cp scheduler

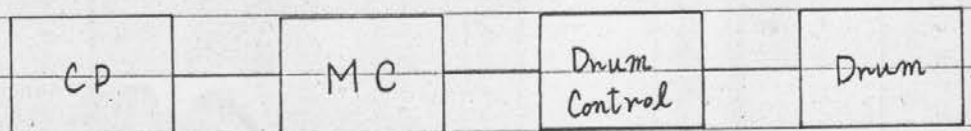


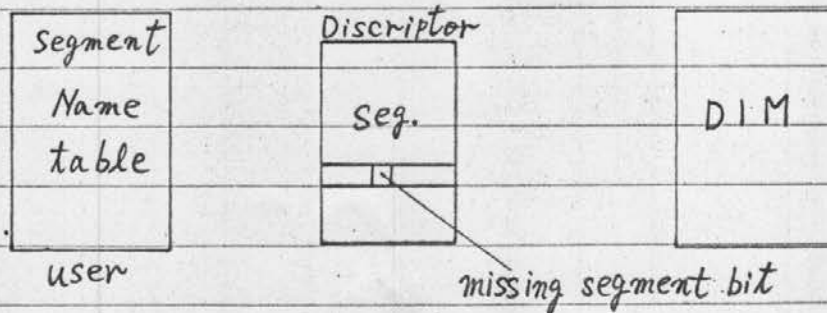
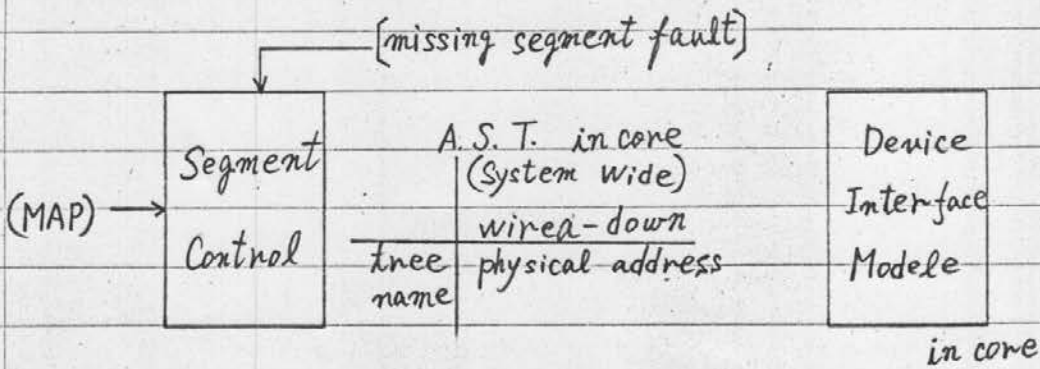
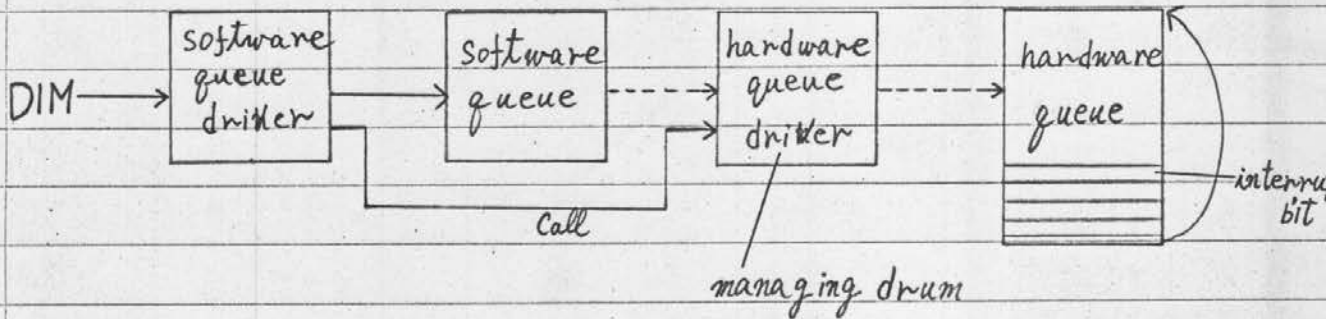
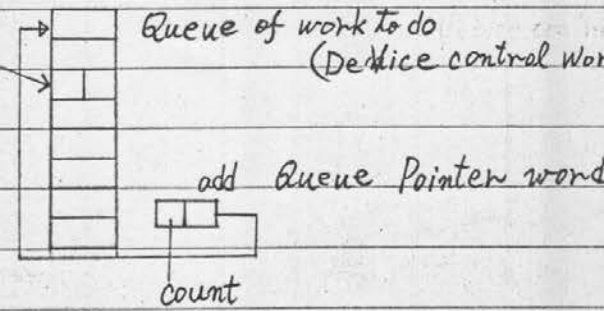
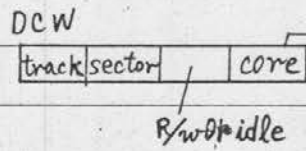
user #2





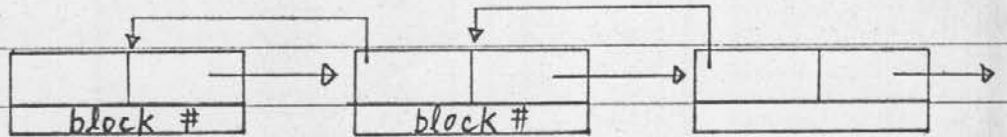
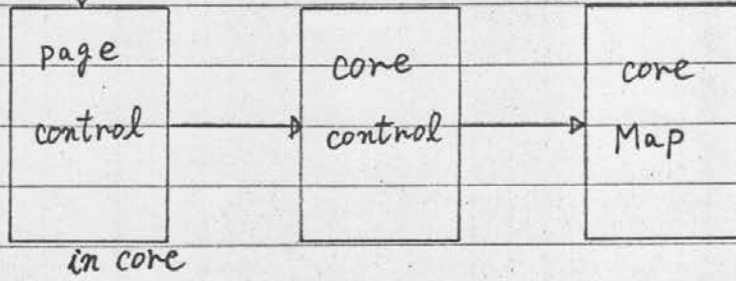
Hardware



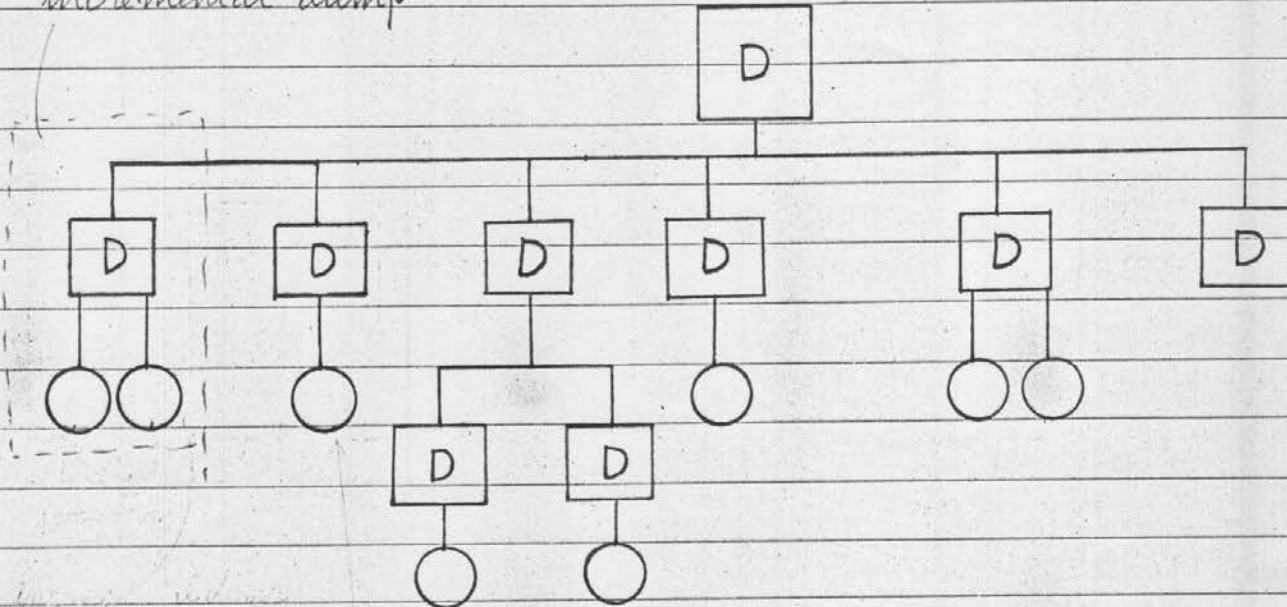


seg#	tree name	physical address
------	-----------	------------------

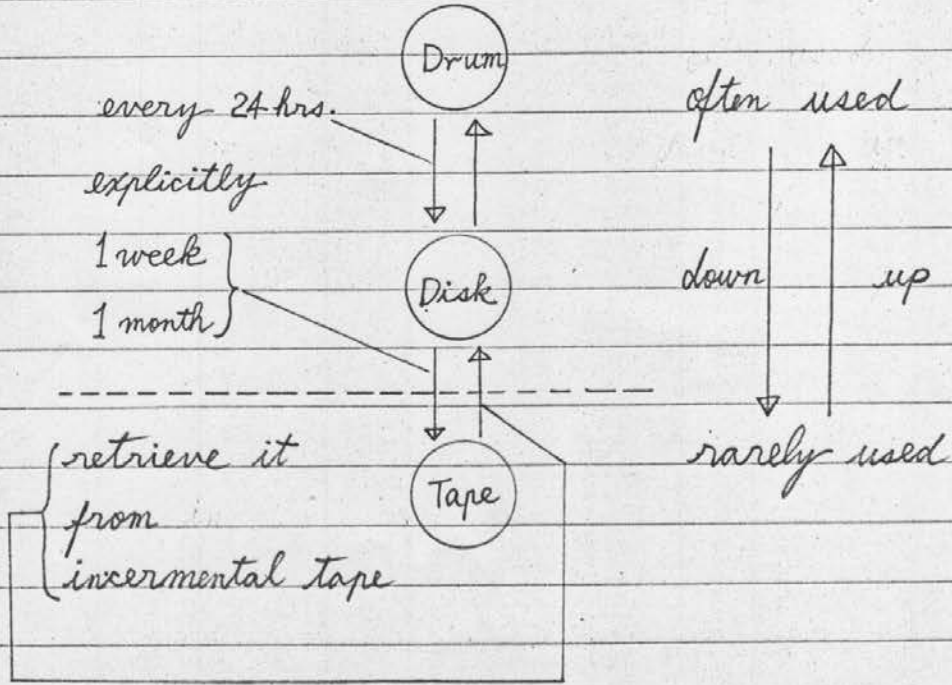
(missing page fault)



incremental dump

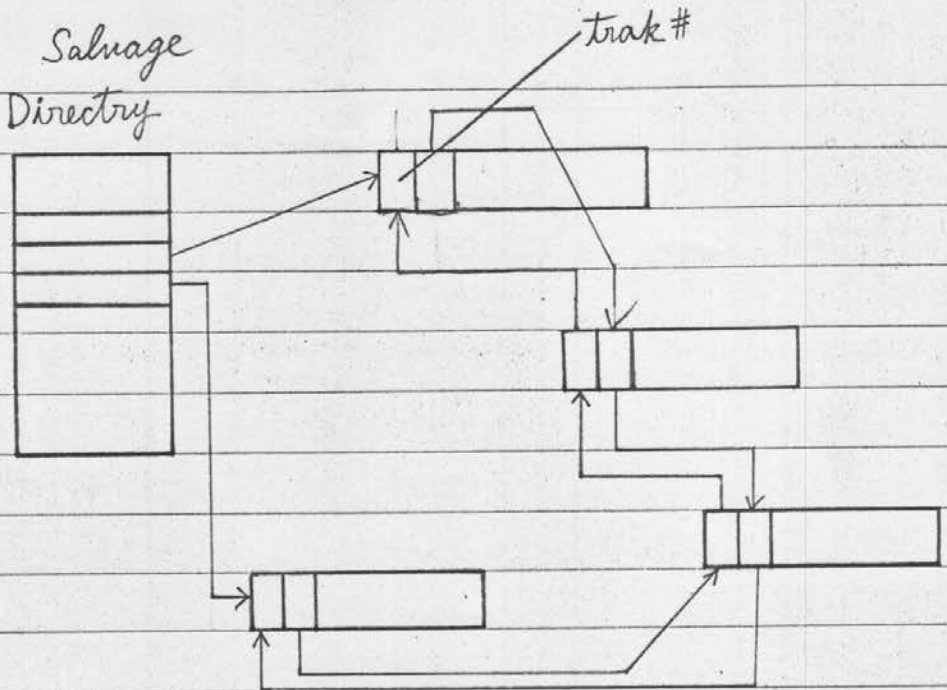


Multi-level Algorithm

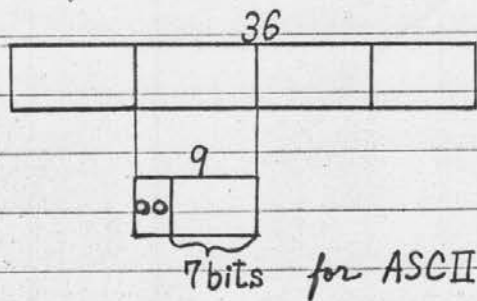


A. 7094 Salvage

Directory



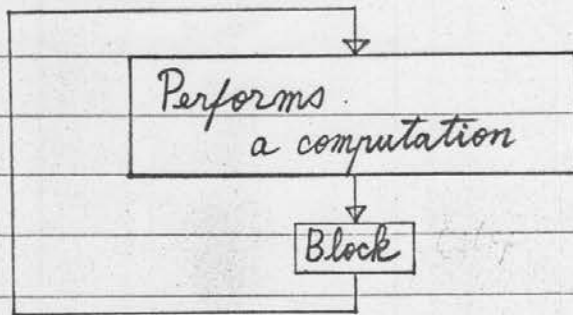
B. Hierarchy Diagram



Pseudo Proc.

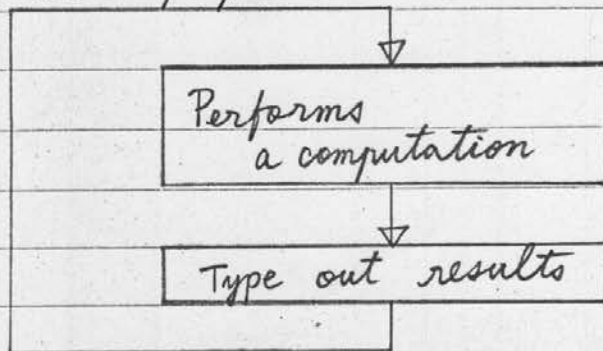
supervisor seg.

Private
2-dim.
memory



Situation:
Block - to stop process

single;

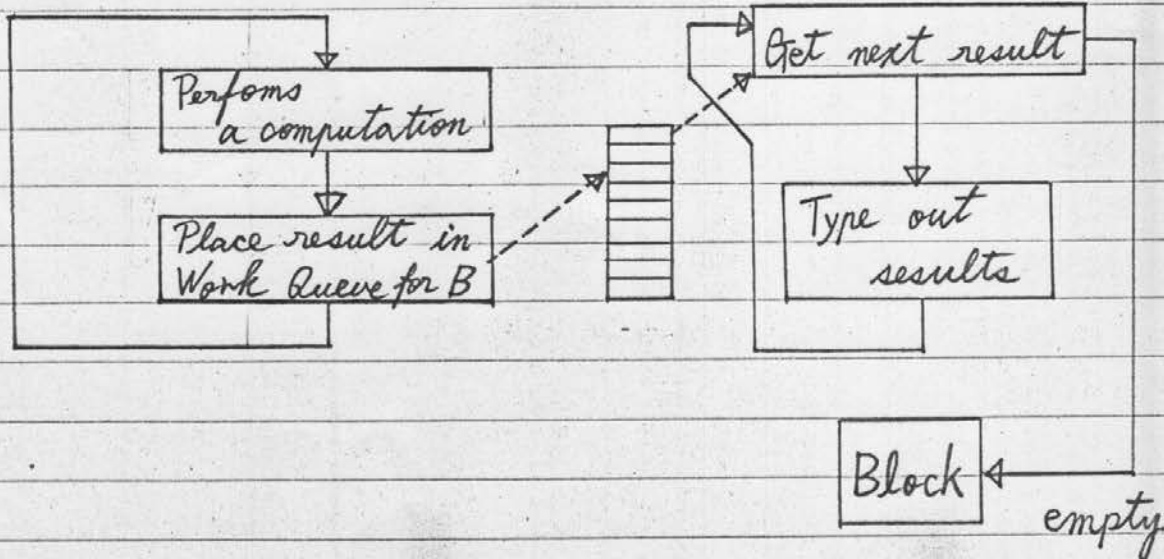


single process
single process

two process;

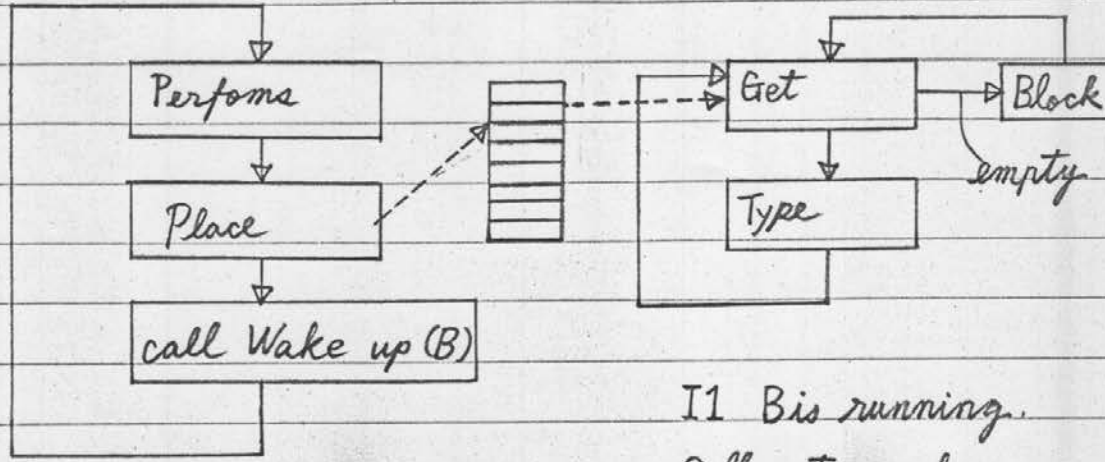
"A"

"B"



"A"

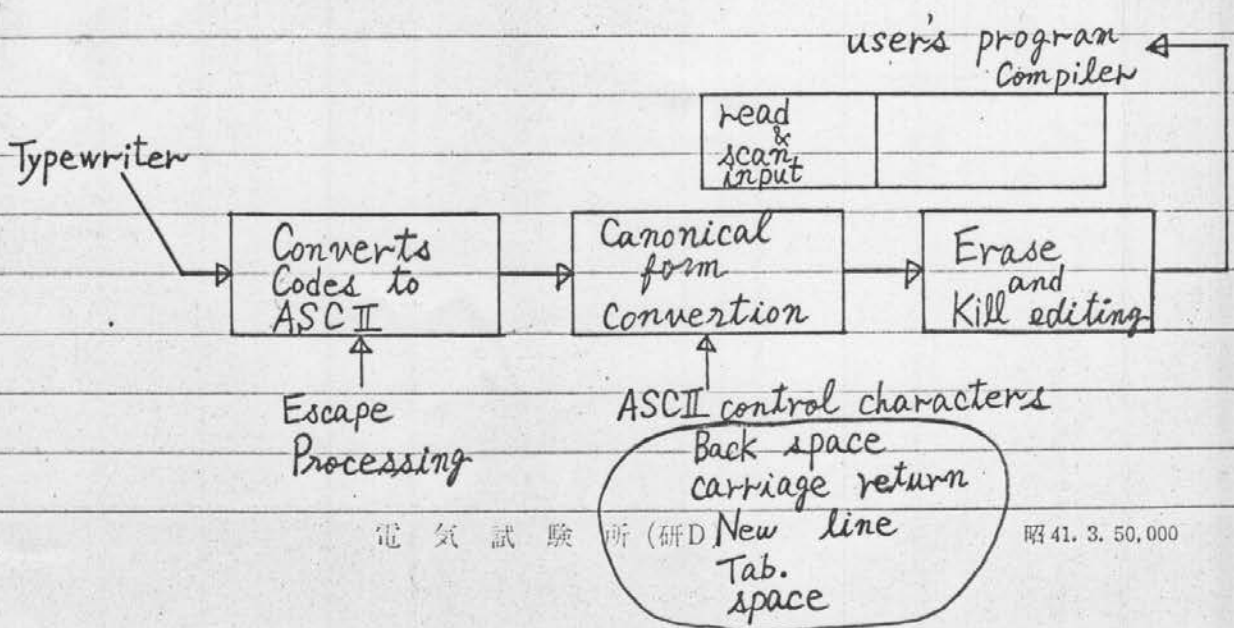
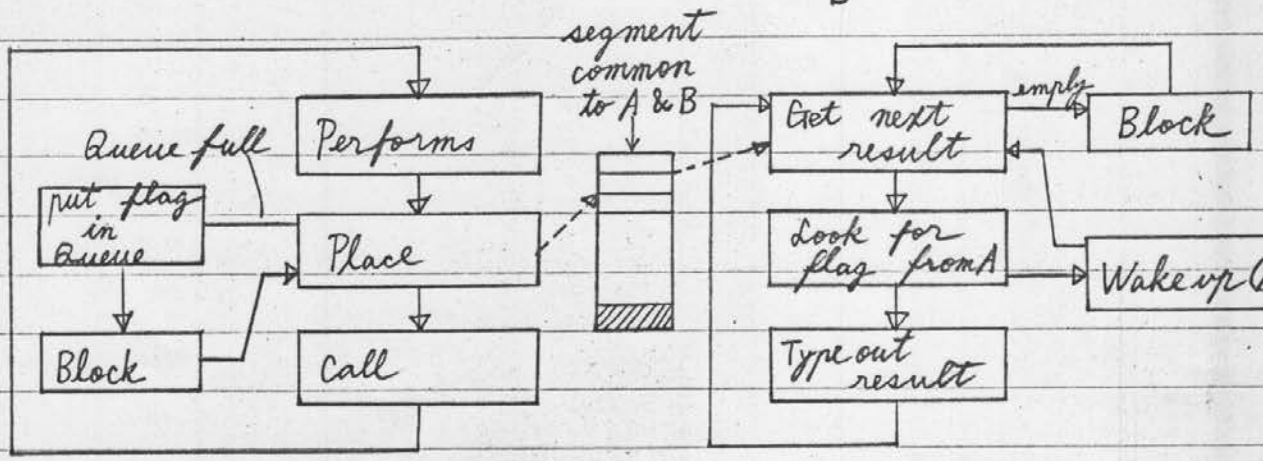
"B"

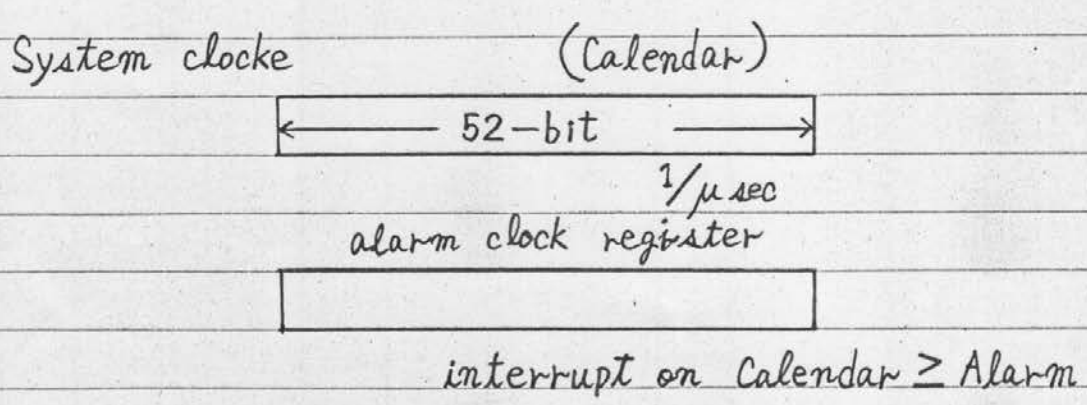
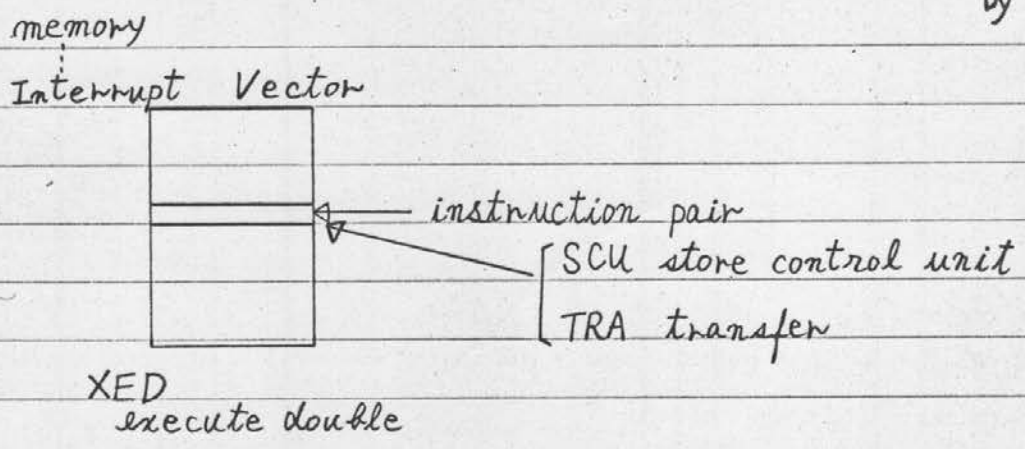
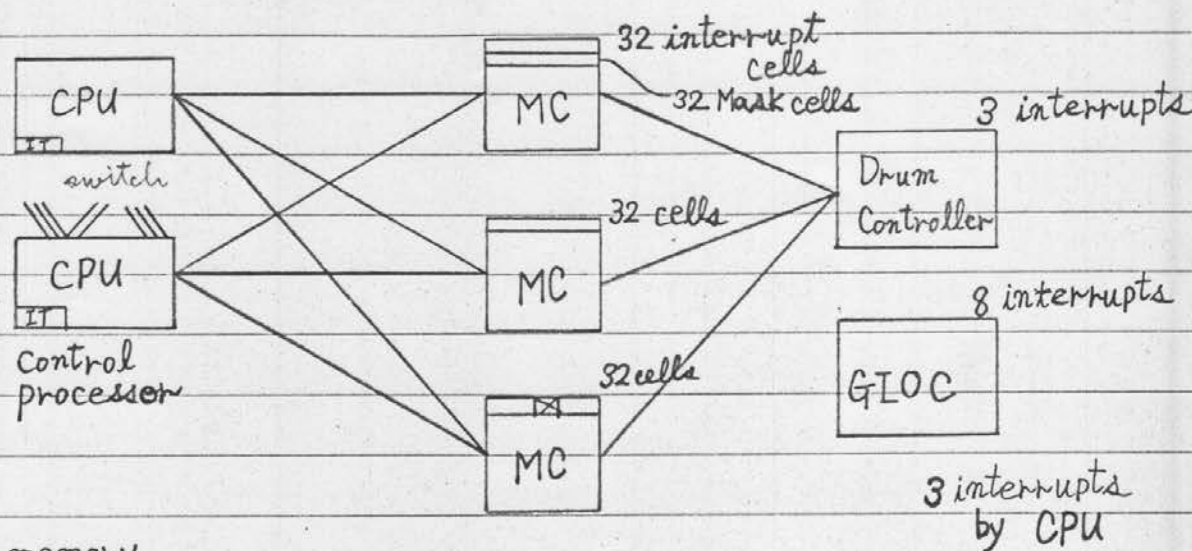


I1 Bis running.
 Calls to wake up are ignored.

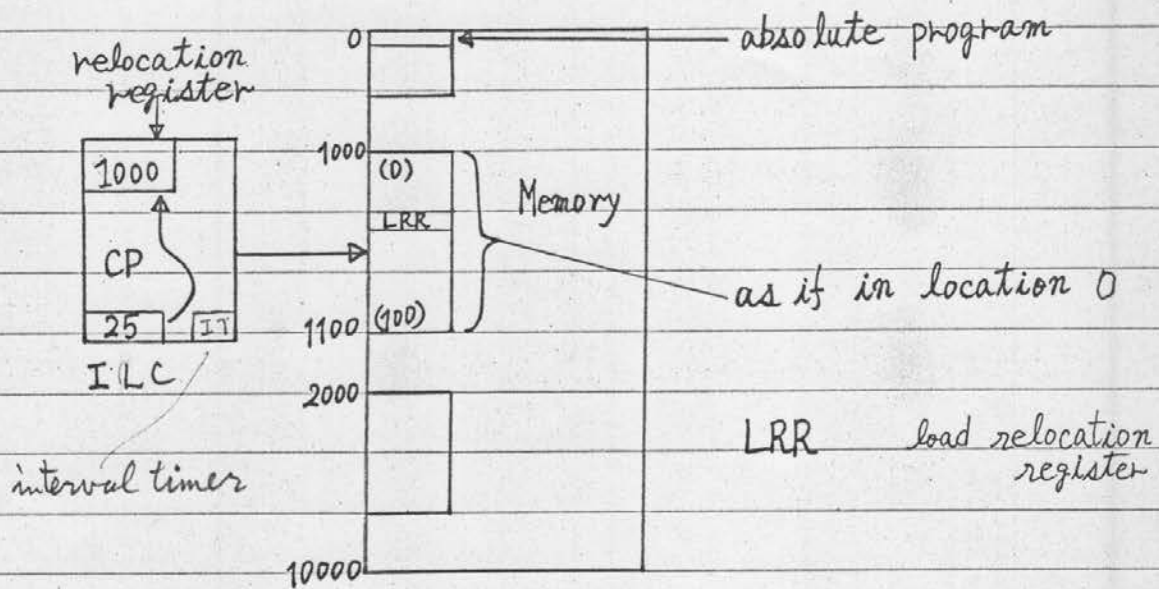
"A"

"B"



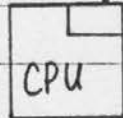


Address Space Switching

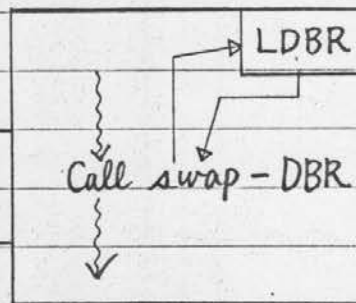


Process A

descriptor base register



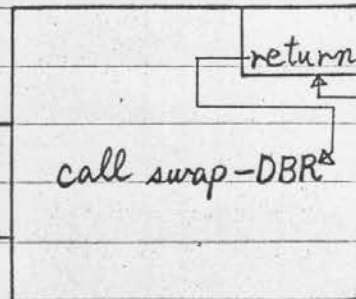
des. seg.



share some segment

Process B

desc. seg.



Swap-D

Process Table & stack

Process #	DBR value	stack pointer

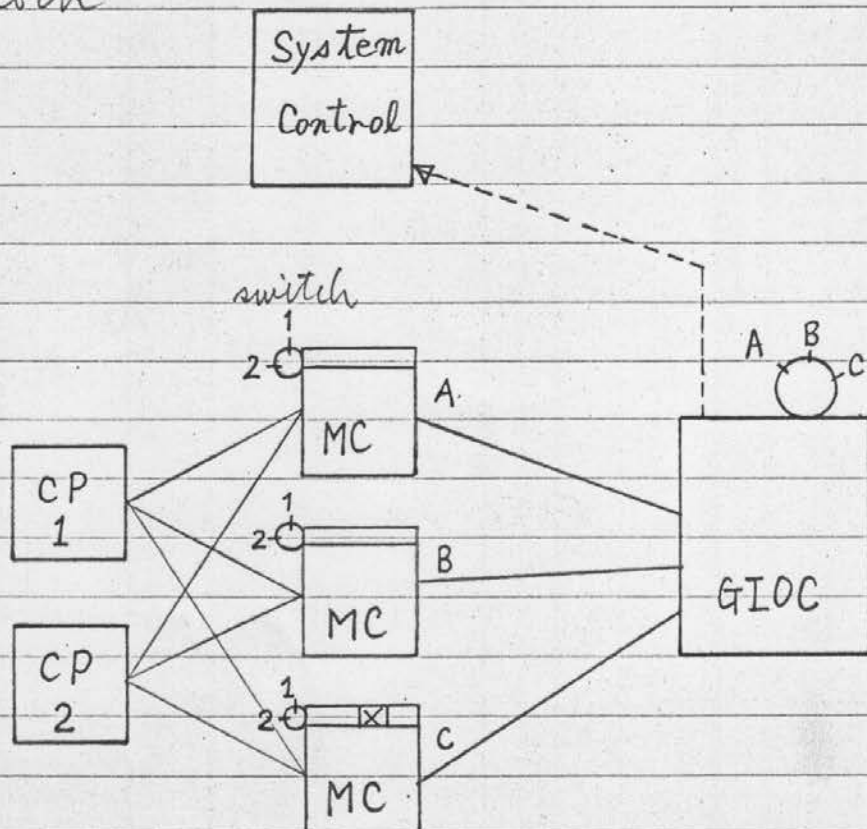
Process

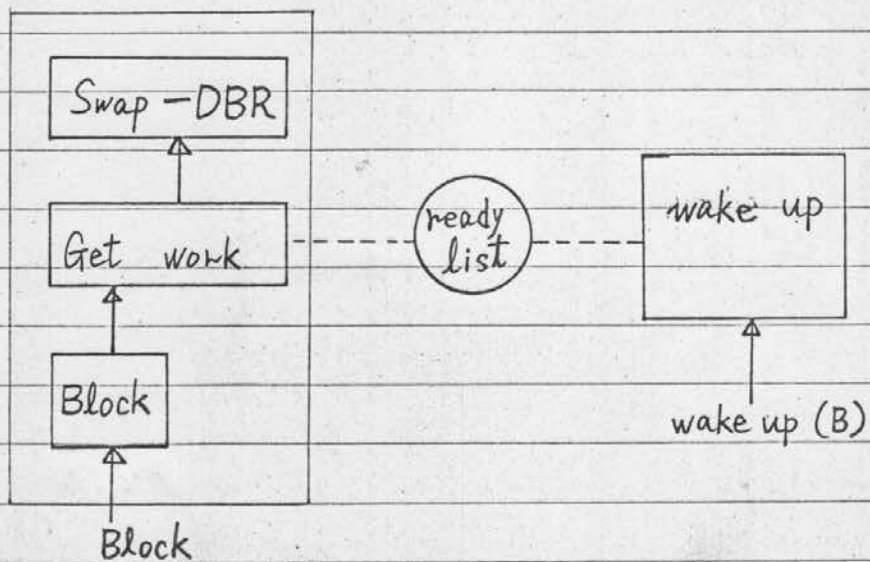
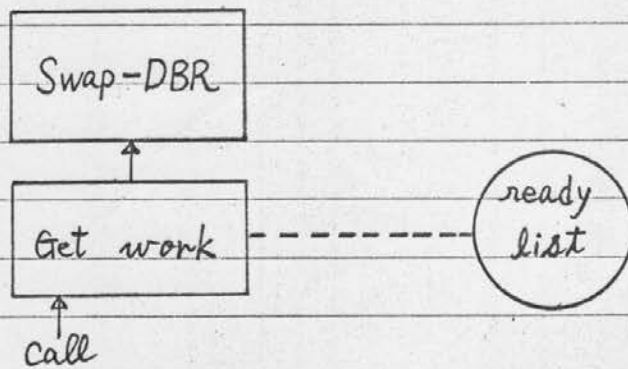
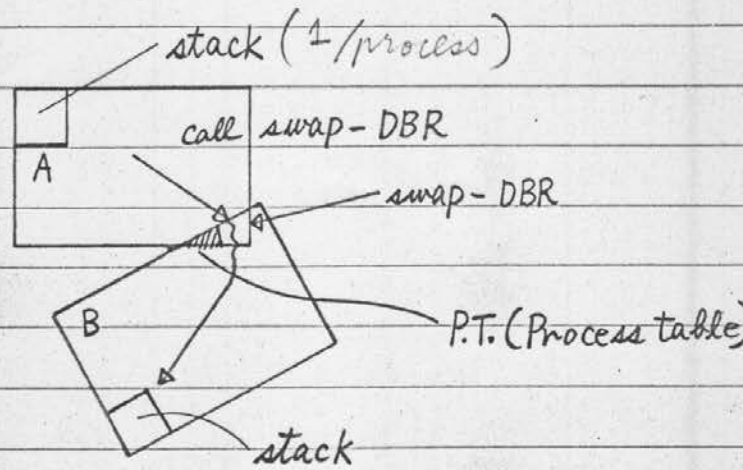
call stack

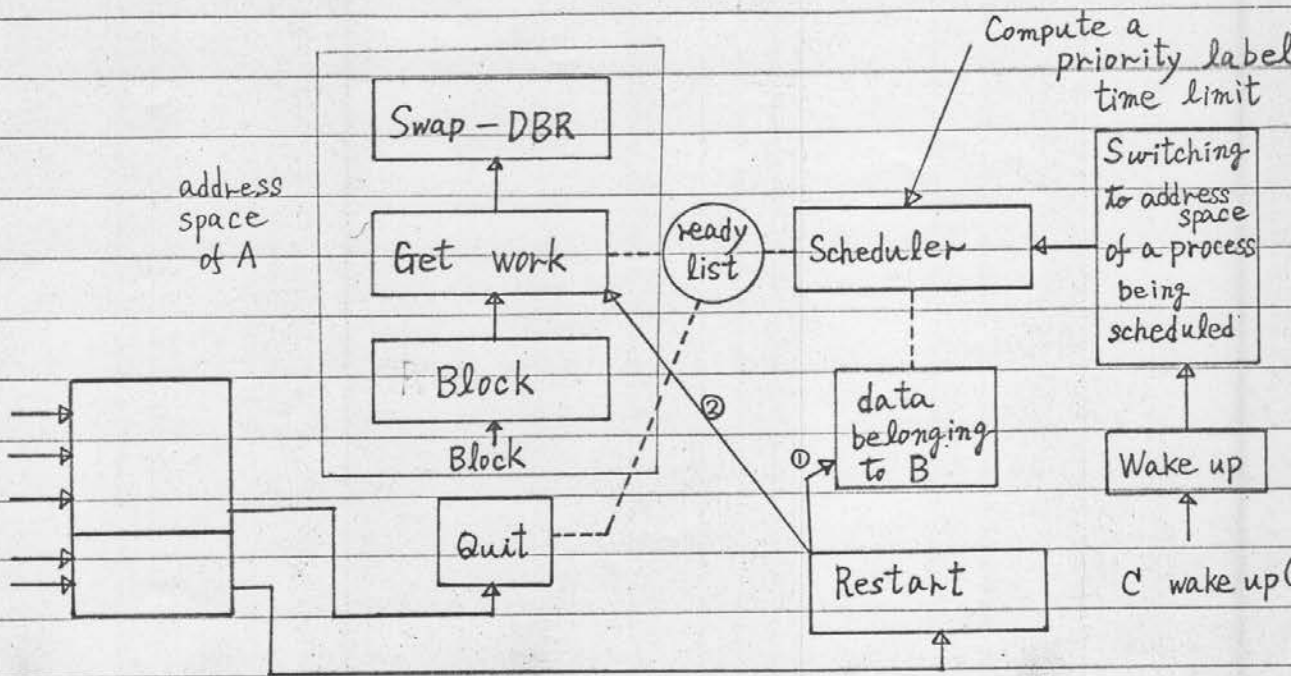
Process Table

Process #	stack pointer	DBR value

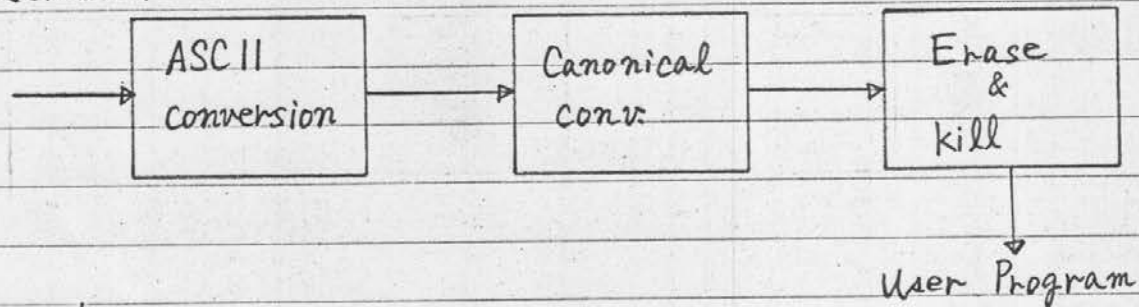
System clock



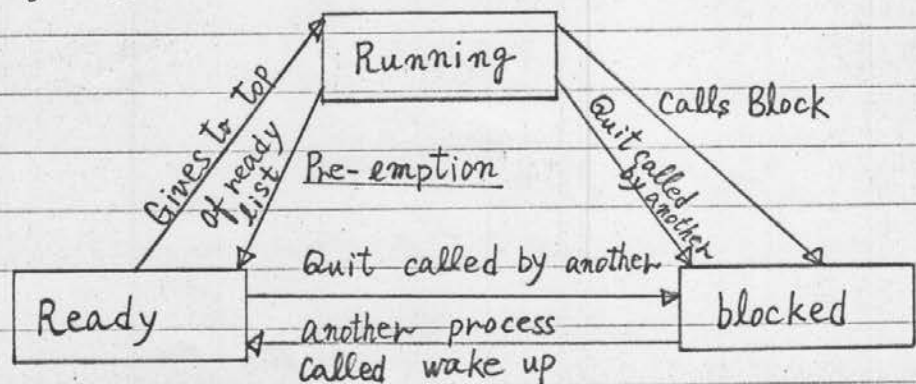




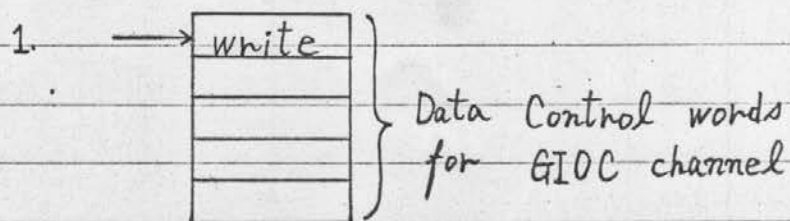
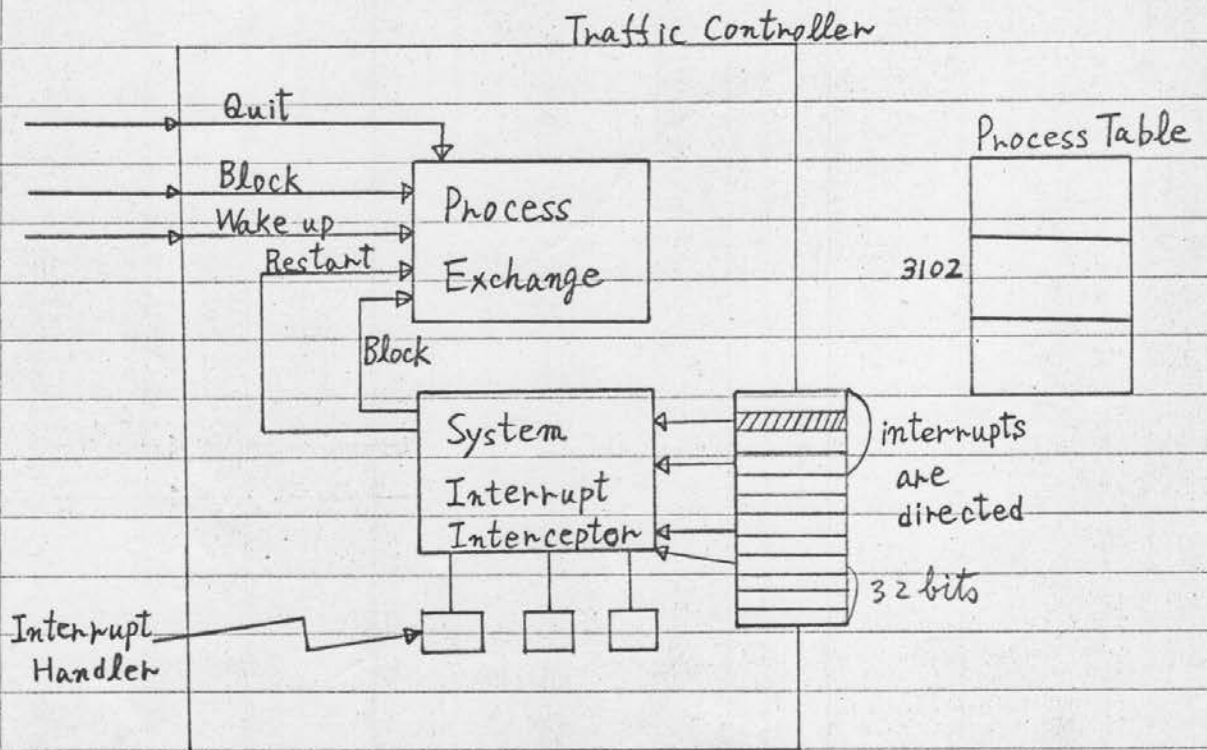
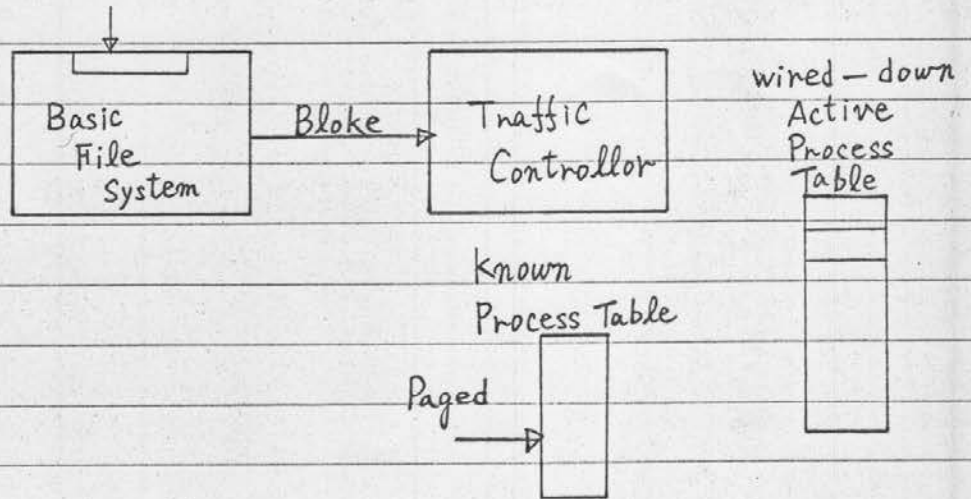
delete #te delete



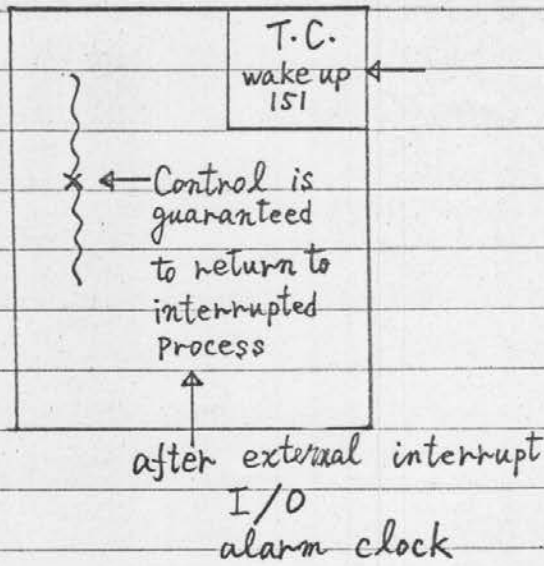
Pre-emption is ordered by Traffic Controller



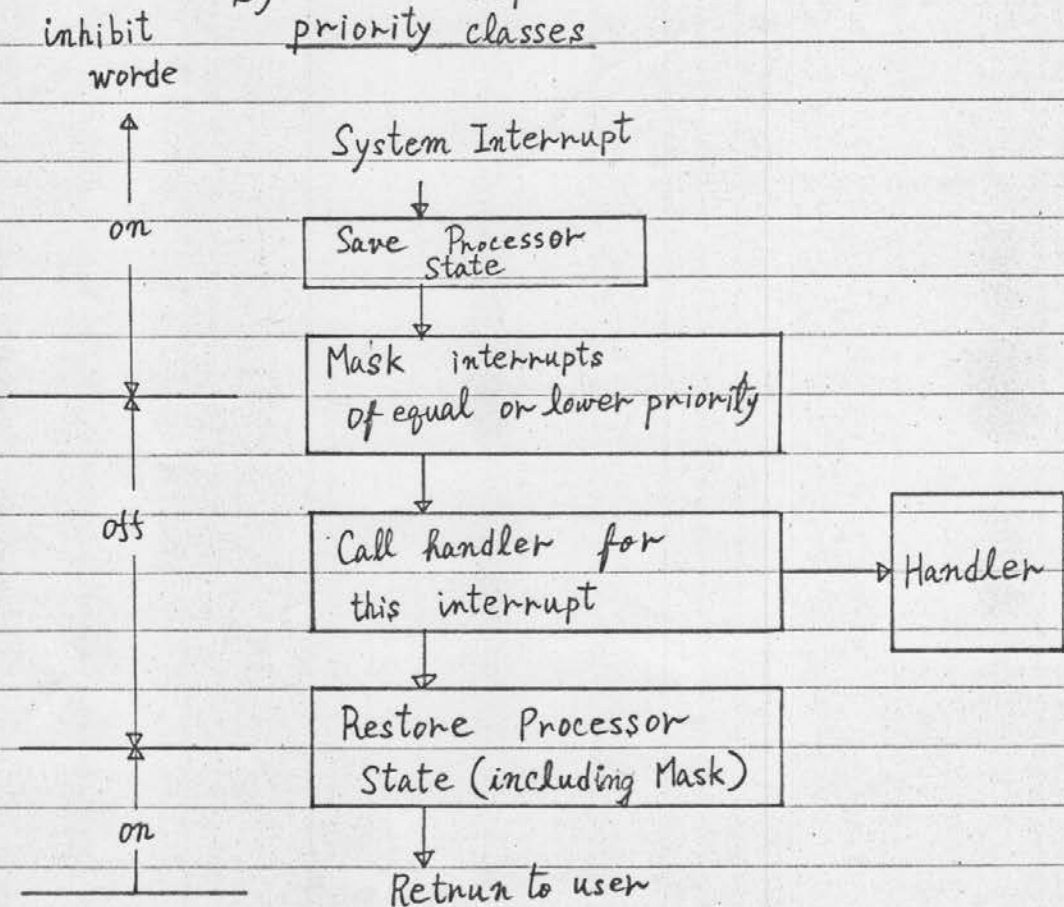
Quit ordered by some user to halt execution

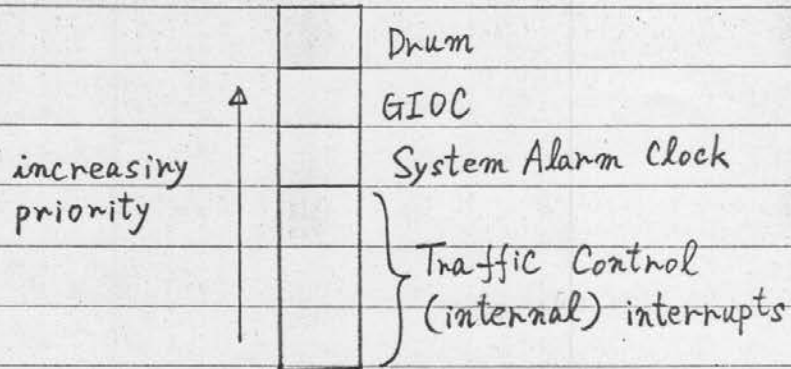


Process "X"



System Interrupt Interception priority classes





Limited Core Memory

Tables	entries	usage
Process table	1/process	Multi plexing Data
Active Segment table	segment/page table in core	Contain Page location information

Private Segments 1/process

usage

Segment name table

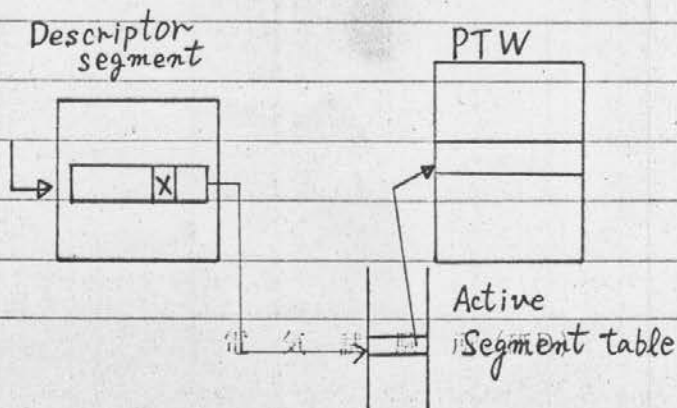
Contains names correspond to segment numbers

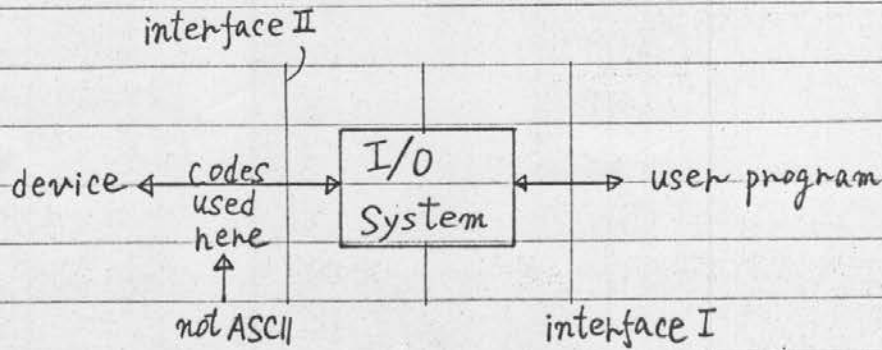
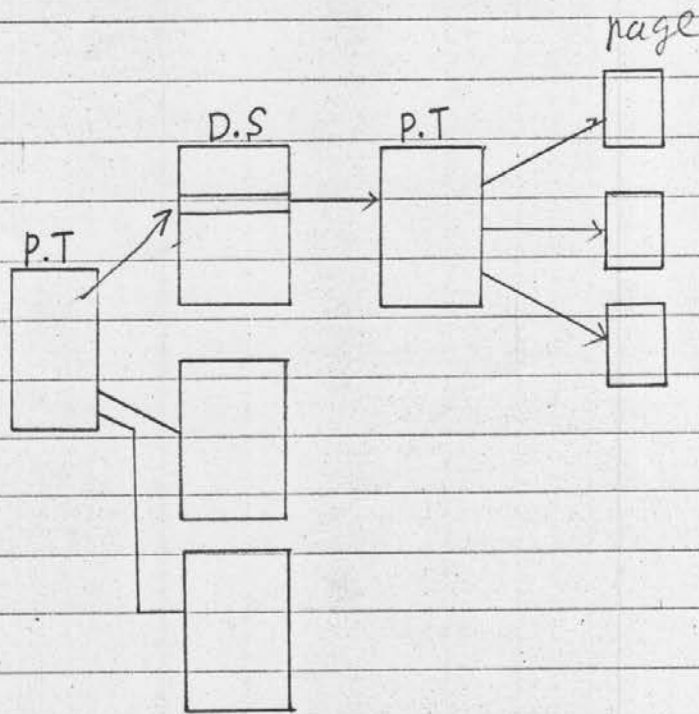
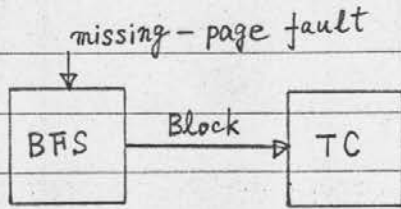
Descriptor segment

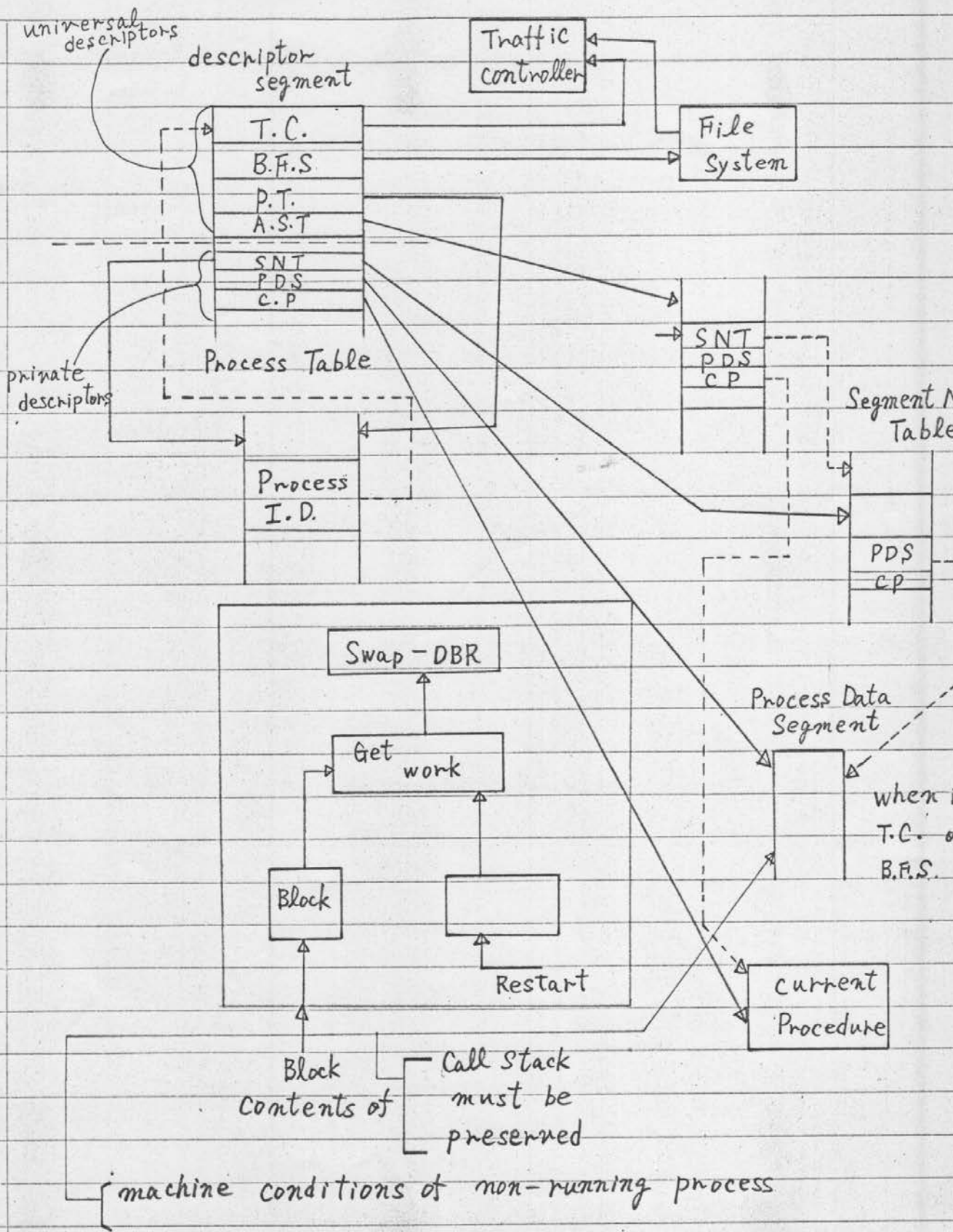
hardware map

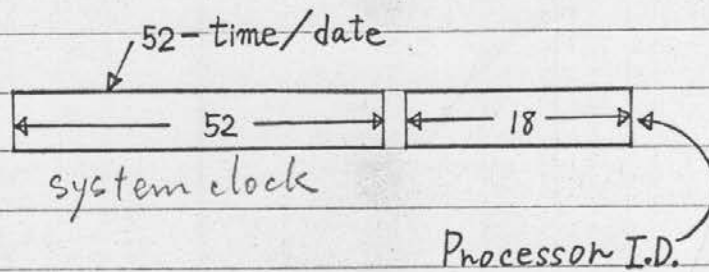
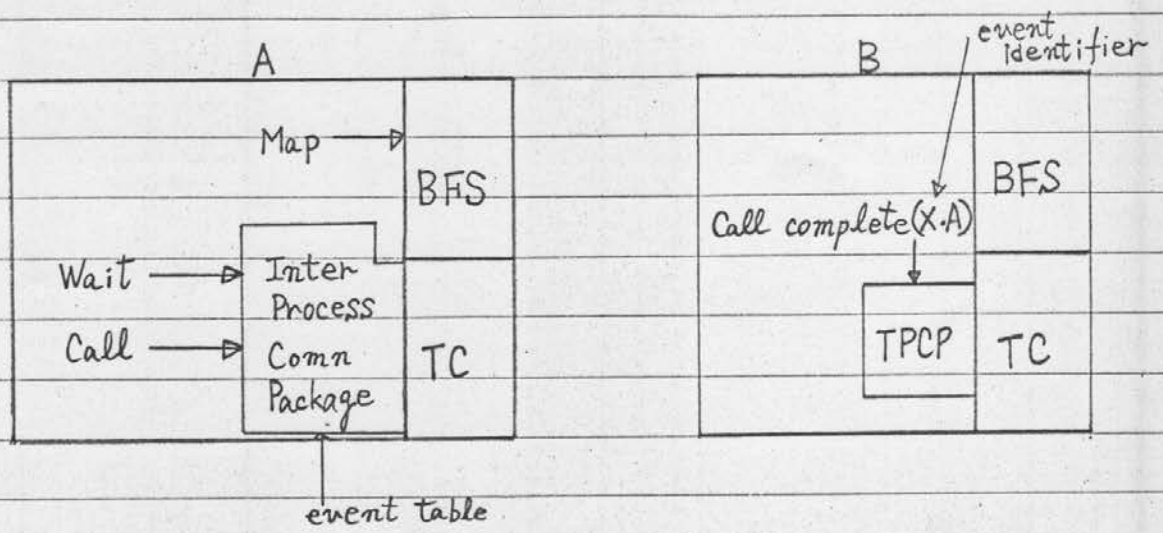
Process data segment

Store processor machine conditions





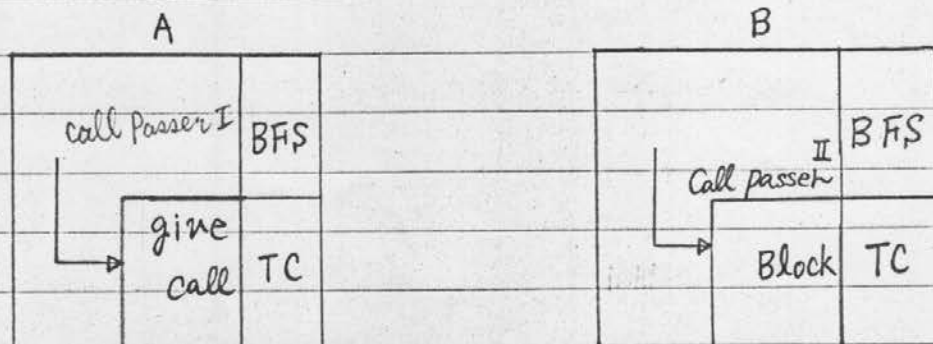


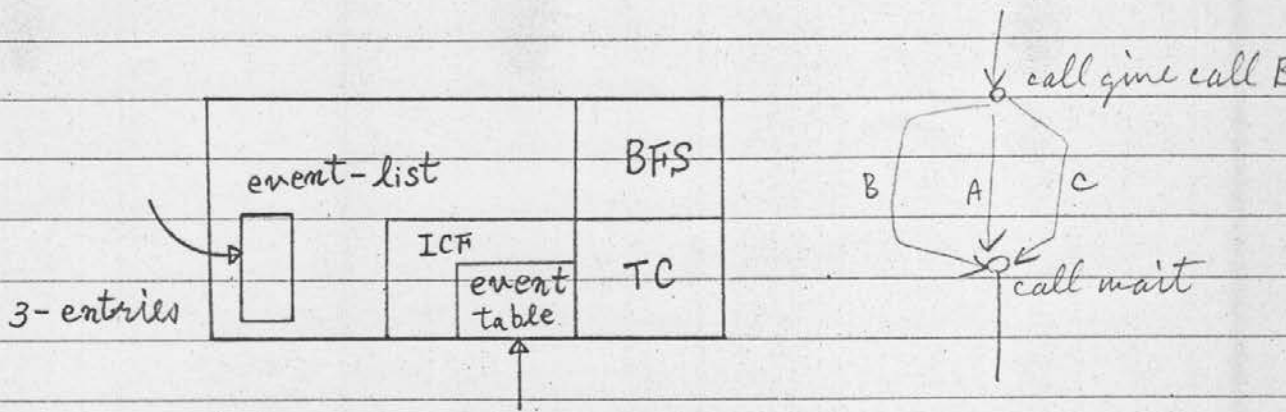


event-table

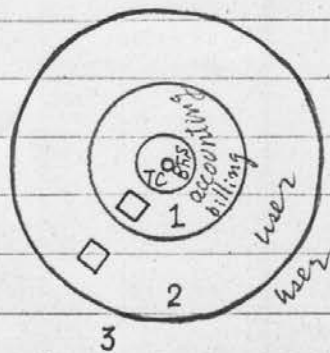
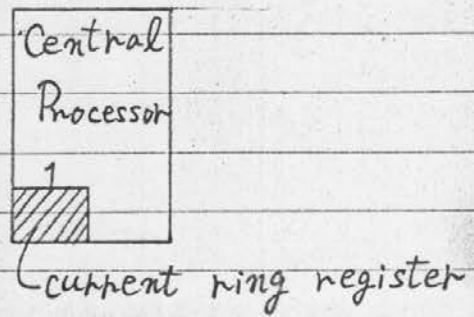
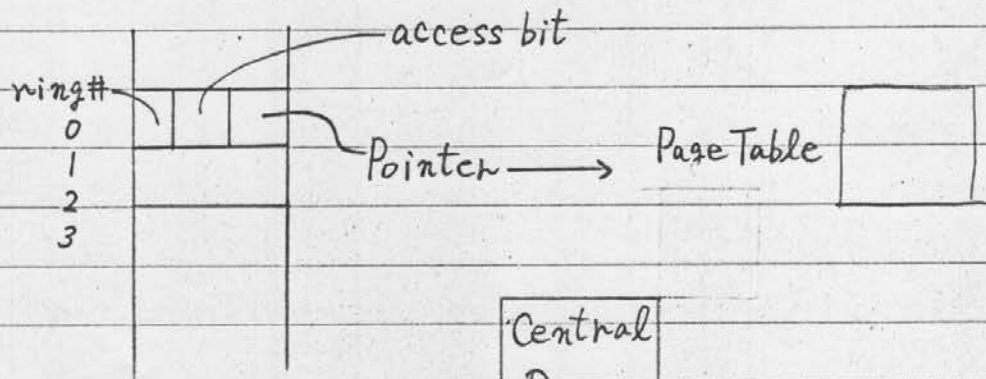
Event name	Process who will Call	Event Value	time of occurence
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Call Passer Part I

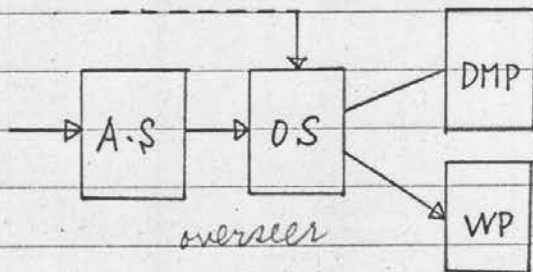
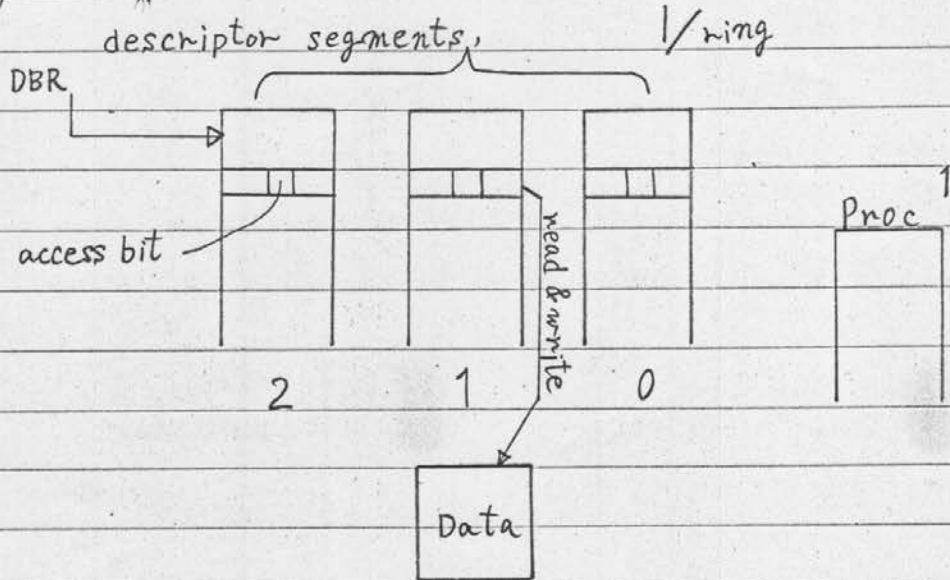




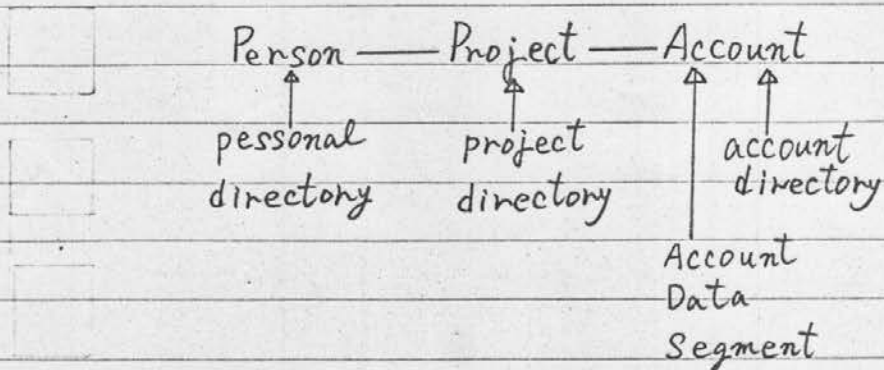
Rings of Protection descriptor segment

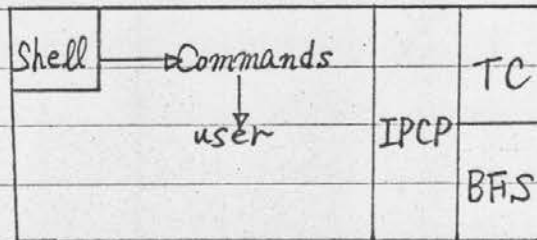
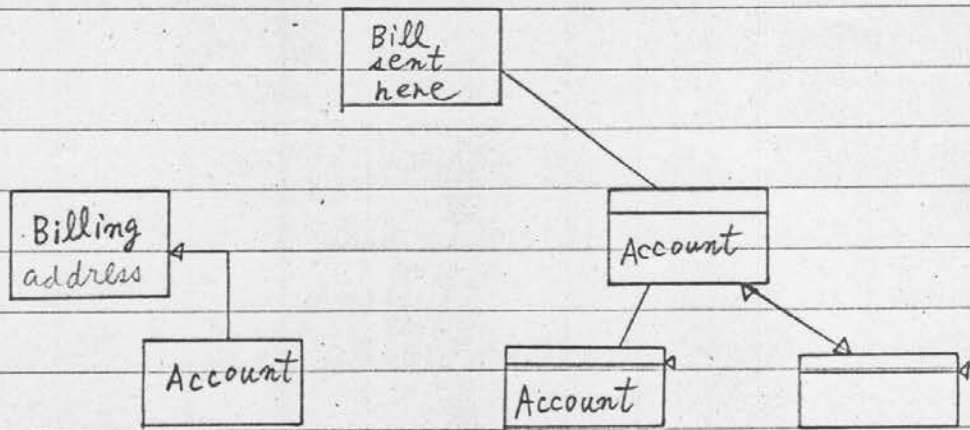


Ring simulator

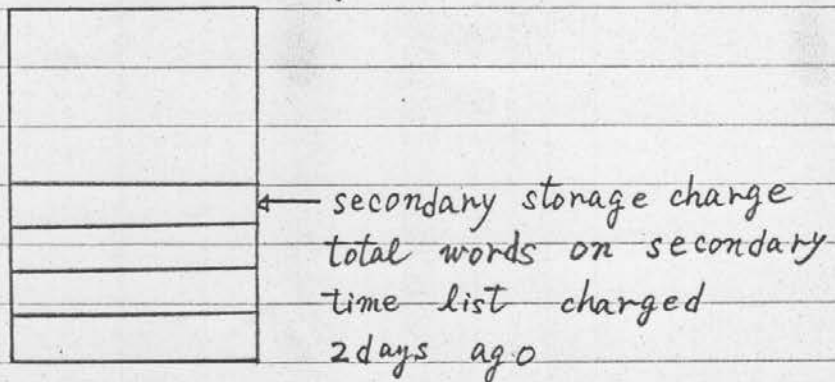


Account name

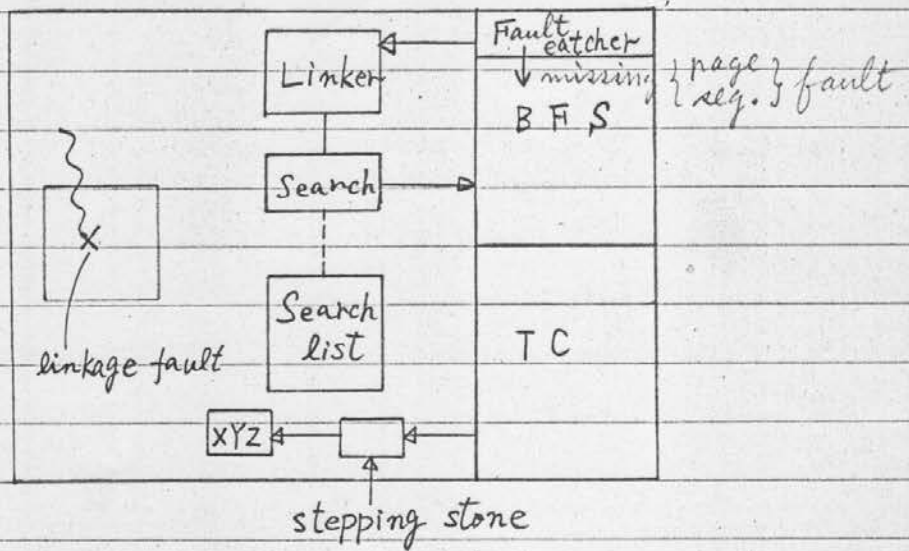
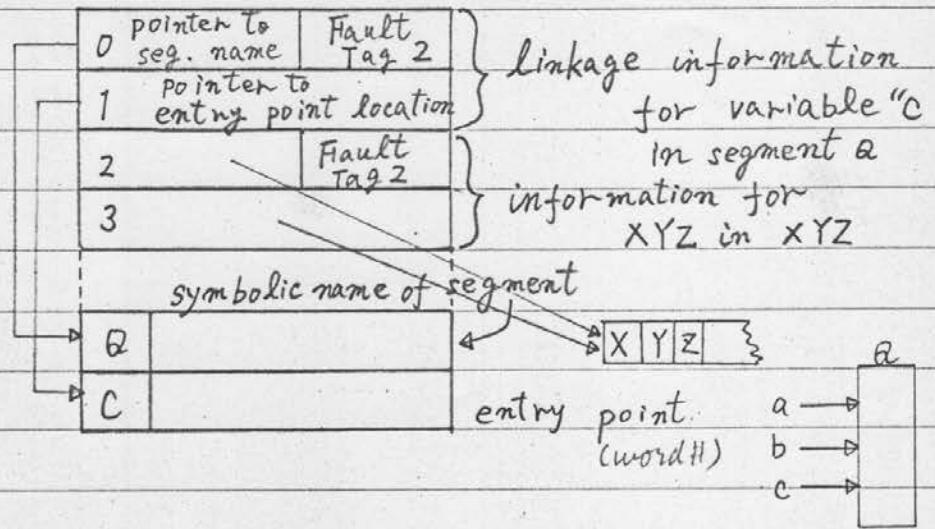




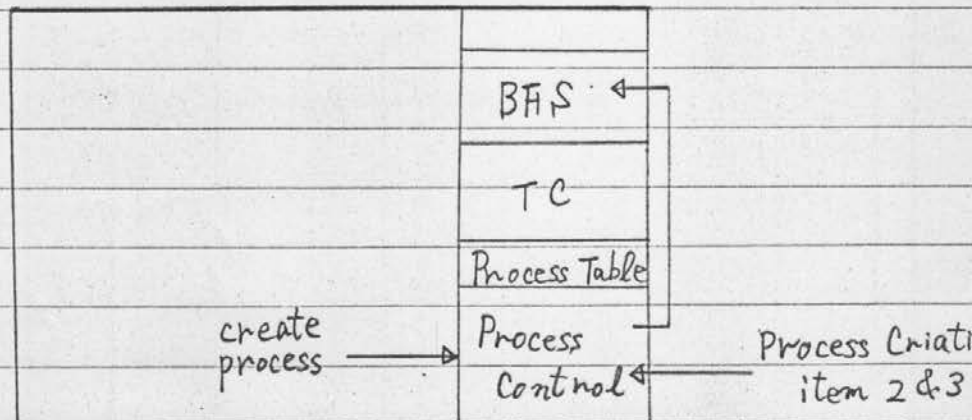
Account Data Segment

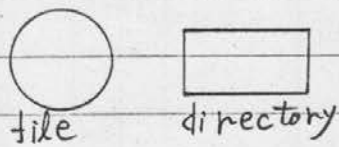
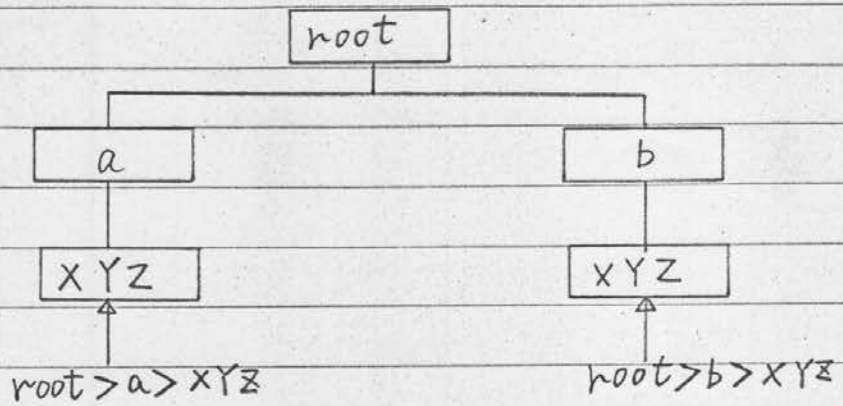


alpha link

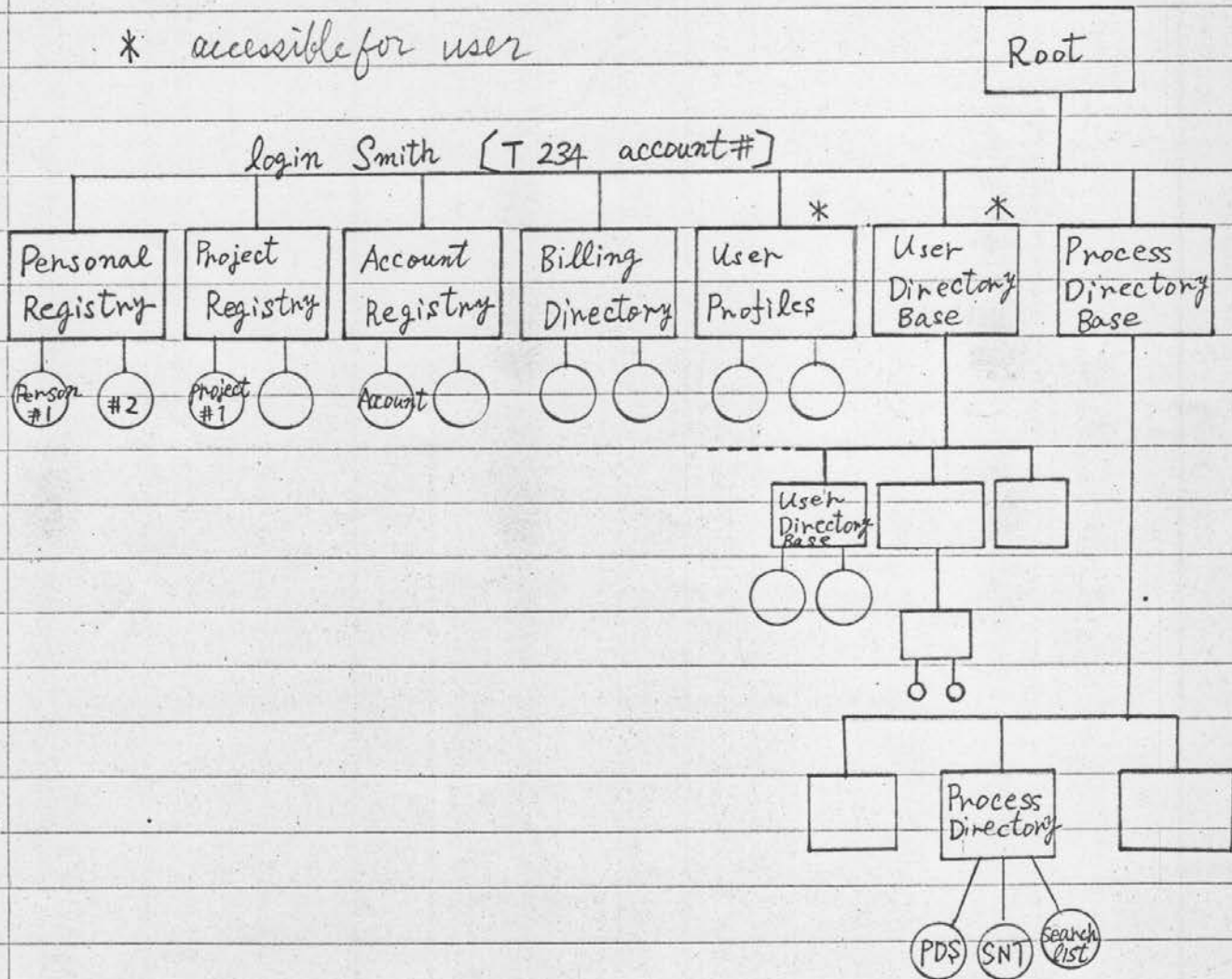


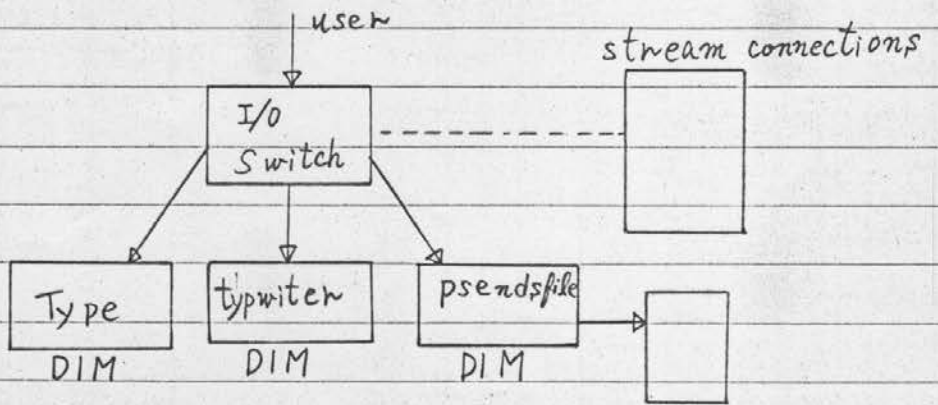
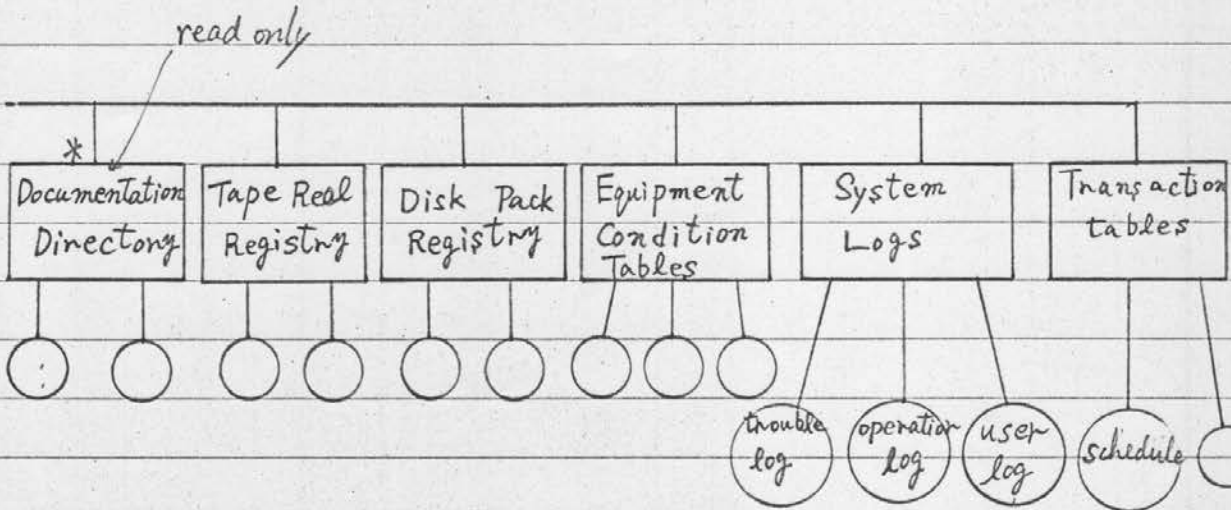
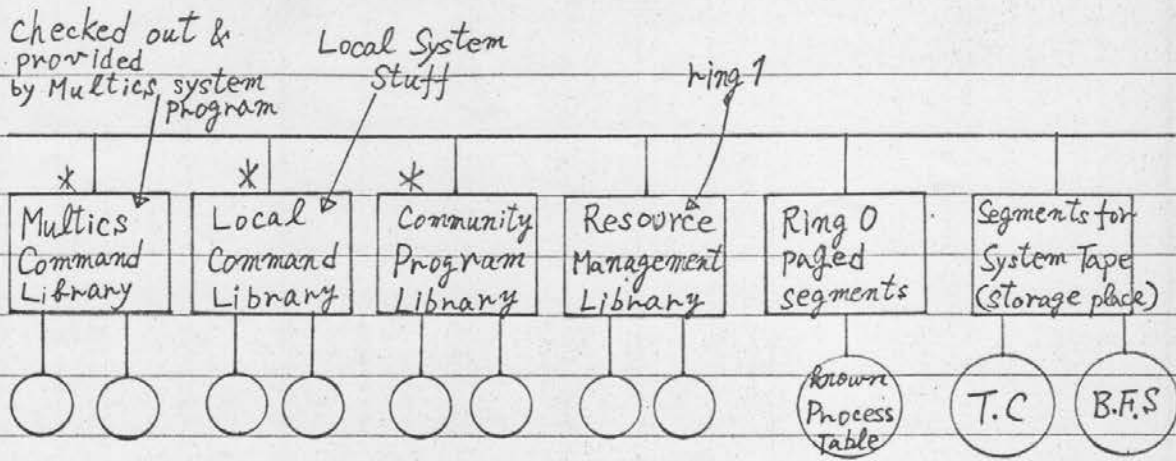
call create-process (stepping-stone, linker, search, ID#)





* accessible for user

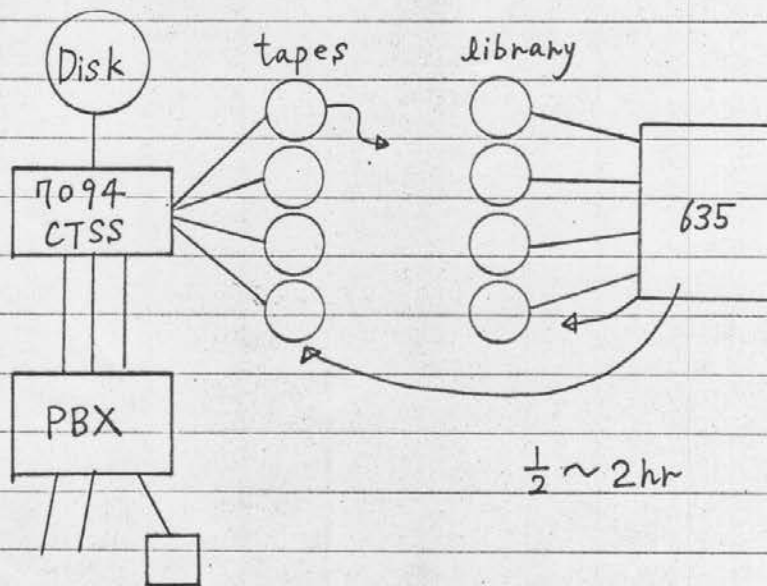
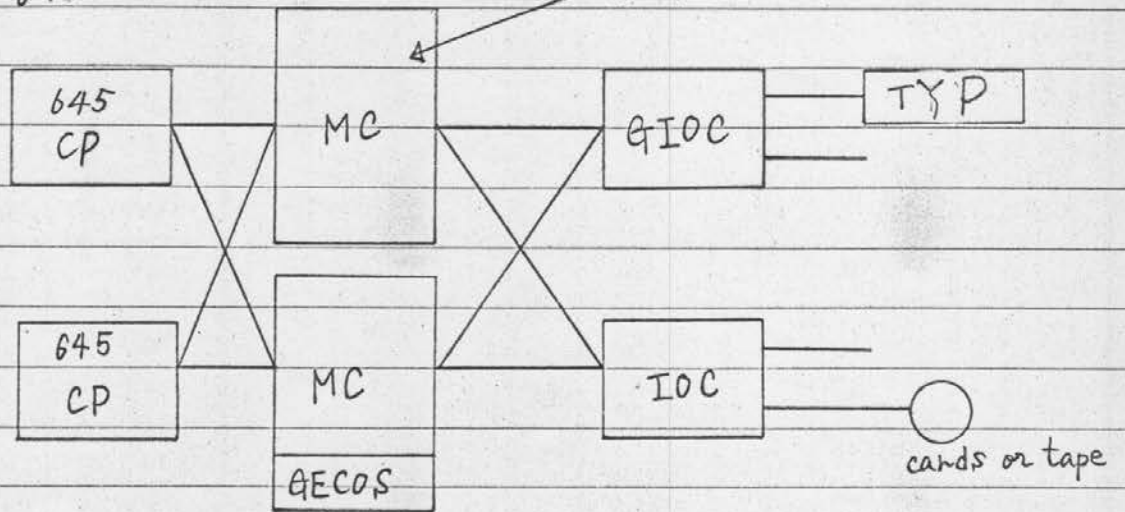




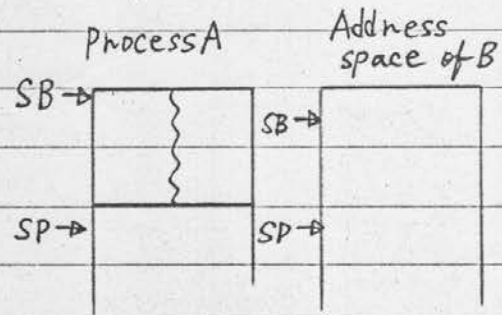
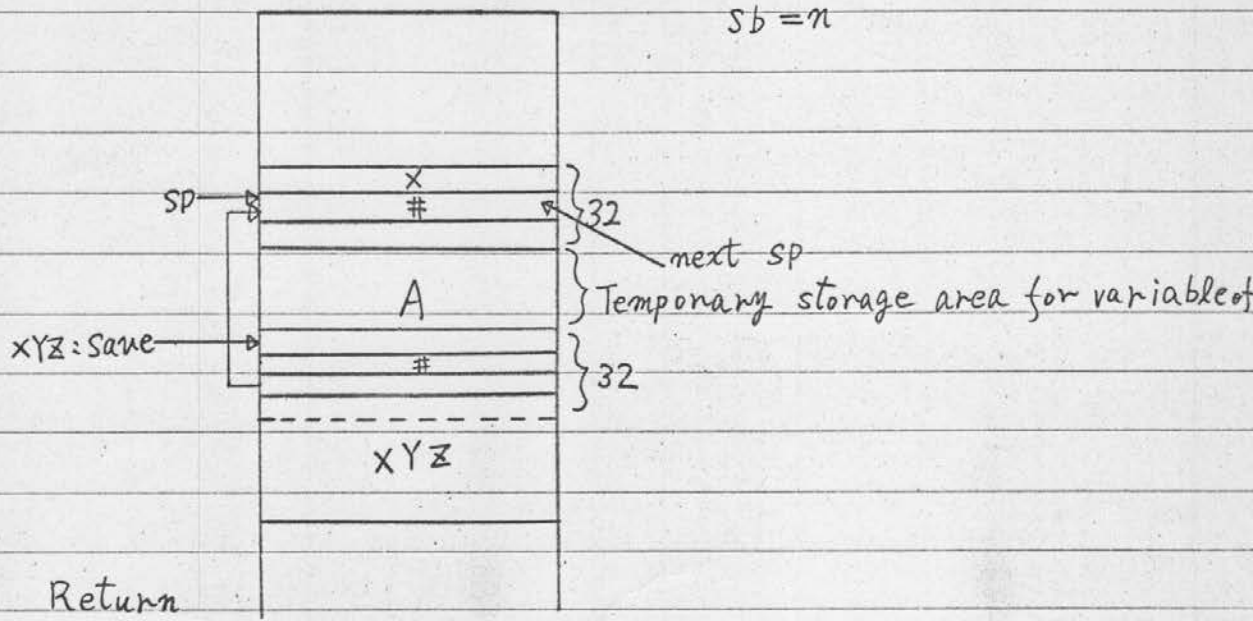
Initial Configuration

GE 645

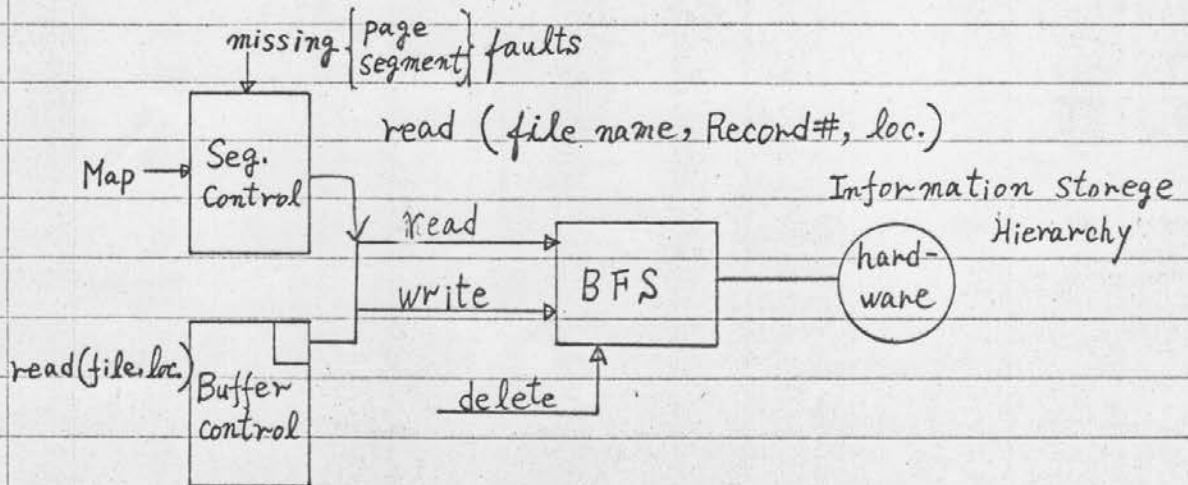
initial Multics Modules



Segment "n"



Alternative File System Approach:



Present File System Approach

