<table>
<tr><th colspan="2">CHAPTER -4 Insight into Program Execution</th></tr>
<tr><td>Introduction</td><td>

Basic Flow of Compilation
Understanding Translation Process
Role of OS in Program execution
Cloud Computing

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Source code----convert--object code or machine

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<tr><td>Basic Flow of Compilation</td><td></td></tr>
<tr><td>Compilation Process</td><td>

Preprocessing-This phase remove the comments from the source code and add required components
Compilation-
1)Analysis phase-Symbol table (keyword,variable)

<table>
<tr><td>variable</td><td>Keyword</td></tr>
<tr><td>A</td><td>Print</td></tr>
<tr><td>P</td><td>Int</td></tr>
</table>

2)Synthesis Phase-syntax tree ,analyzing syntax tree---intermediate code

Assembly-intermediate code convert into object code
Linking-Linking additional Libraries .Exe file is ready to load
Loader

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<tr><td></td><td></td></tr>
<tr><td>The Interpretation process</td><td>
<table>
<tr><th>Compiler</th><th>Interpreter</th></tr>
<tr><td>It generate intermediate object code</td><td>It does not generate intermediate object code</td></tr>
<tr><td>Require more memory</td><td>Require less memory</td></tr>
<tr><td>Display list of errors of entire programmer.</td><td>Errors appear one line at a time</td></tr>
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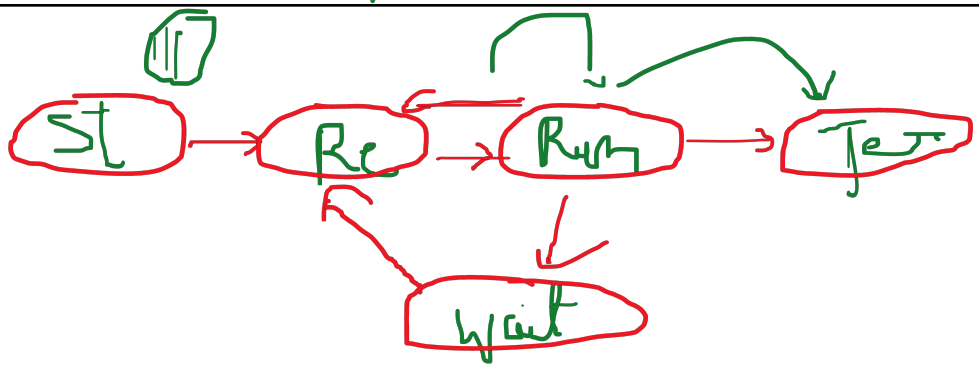
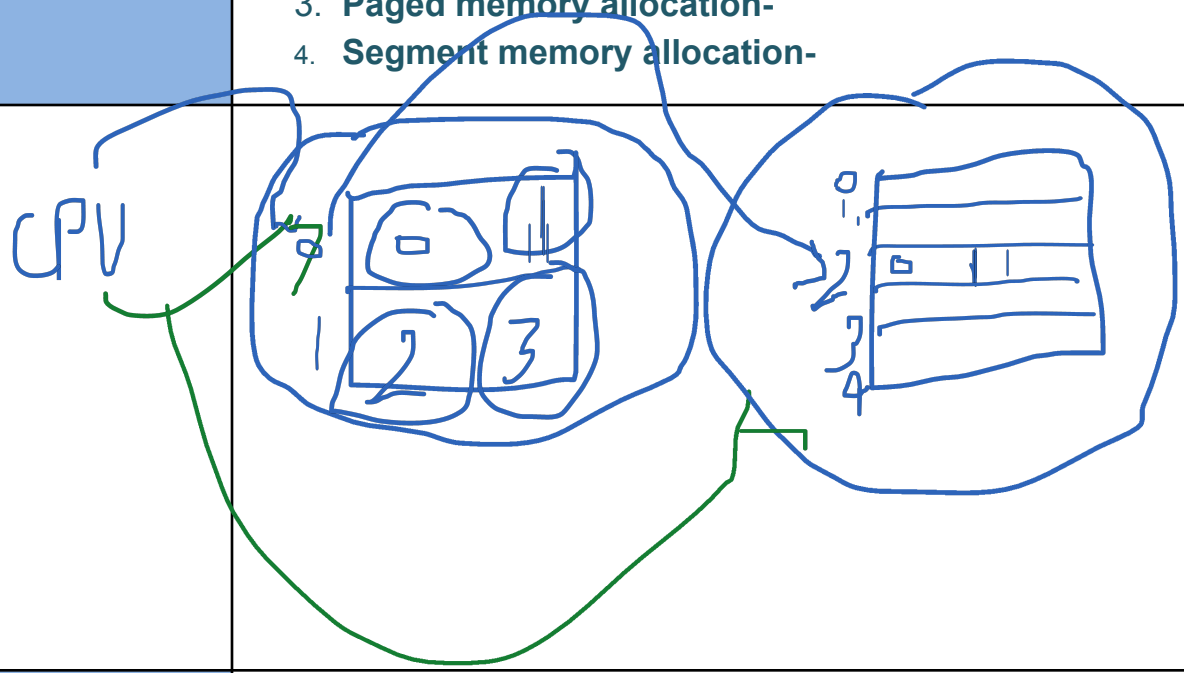
</td></tr>
<tr><td>Role of operating System</td><td>.exe file
● Boss-Secretary(OS)</td></tr>
<tr><td></td><td>A running program or the executing entity is called a Process
Muti-programming,Multi-tasking,Multi-user</td></tr>
<tr><td>Functions of OS</td><td>1. Process Management
2. Process Scheduling
3. Memory Management
4. I/O Management</td></tr>
<tr><td>Process Management</td><td>
<table>
<tr><td colspan="2">STACK(3)</td></tr>
<tr><td colspan="2">HEAP(4)</td></tr>
<tr><td>VARIABLE(2)</td><td>PROGRAMME CODE(1)</td></tr>
</table>
</td></tr>
<tr><td>Process state</td><td>Start state</td></tr>
</table>

	Ready State Running state Waiting state Terminated state 
	
HOW CPU Will execute of a Ready State	Fetch Decode Cycle CU –Control Unit Process-Memory-decode the process-Execute
2.Process scheduling	• Allocation of CPU time to various processes in memory is called process scheduling • P1,P2,P3,P4,P5 • INTERRUPT-HIGHER PRIORITY PROCESS
	1. FCFS-First come First serve 2. ROUND ROBING-Given some fixed amount of time 3. SJF-Shortest JOB first
3.Memory management	• Allocation memory to various process and resources is called memory management. • Memory manger allocate memory to process to load their data and files Using different strategies •

	1. Single memory allocation-Allocate to single application at a time 2. Portioned memory allocation- 3. Paged memory allocation- 4. Segment memory allocation-
	
4.Virtual Memory Management	Programme or Process-8GB Primary Memory-4GB
5.I/O Management	IO Manager
6.User Interface	1. GUI-Graphical user interface(WIMP) 2. CLI-Command line interface-Copy cat abc.txt EX-DOS
Cloud Computing	Cloud computing is the internet-based computing ,where by shared resources ,software,and information are provided to computer and other device on demand. Google drive,onedrtive,icloud, dropbox,Amazon web service,

	Data science
Features	-on demand self service
	-Broad network access
Cloud Service	• SaaS(Software as a service) • Front end Interface • Online order • Ex Google apps,Microsoft office 365,Zoho one,Zoho CRM,Sipo app • NO dependency on OS
	• Platform as a service(PaaS)-service provider • Development environment • OS,Programming language,database,webserver • Ex-Window Azure,AWS,Heroku,Force.com
	• Infrasture as a service(IaaS)-service provider • System administrator • Choice of OS • Virtual storage • IP Address will assign Ex-Amazon AC2,Racksapce
Types of Cloud	• Private Cloud • Public Cloud
	Q1.What is operating System ? Ans-1.It manages computer hardware, software resources, and provides common services for computer programs. 2.It is a software that supports hardware and allow other program to run Q2. write the name of your mobile OS. Q3. What is process? Ans i)Running programs ii)Execution of a programme Process is a program running on your compute Q4. Explain the FCFS scheduling

	Ans-First come first serve (FCFS) scheduling algorithm simply schedules the jobs according to their arrival time. Q5.What are the function of OS.Write any 02 Ans-Memory management,process manegement, process scheduling,I/O management Manage the computers resourses like cpu, memory. execute and provide services for applications software. Establish a user interface **Q6. What is cloud computing?** **Ans-1.Through cloud services customers are offered many types of services ,as a service on demand** **2.Cloud computing is the delivery of different services through the Internet.** **3.The use of the internet for the tasks our perform on our computer for storage , acess.** **4. It is a internet based computing. Where resources ,software and other information are provide on 'demand'.**