Name/ هاني شاكر محمد سيد احمد حسن

B.N/ 1015

Topic/ operating systems

Brief about the topic:

Operation system

The operating system is a mediator which connects between the person using the computer and the computer hard ware by creating an environment in which a user can execute the program efficiently and conveniently.

An operating system is software which manages the computer hardware. It is a program that controls the execution of applications and works as an interface between the user of a pc and the laptop hardware. It always runs all the time when the computer is on.

The operation system allocates service and resources such as processors, memory, devices, and information. It has a required program for managing those resources such as memory management module, a scheduler a traffic controller, a file system and I/O programs.

It does basic jobs such as responding input from the keyboard and other input devices, keeping directories and track of folder on the hard disk; it is responsible for sending output to monitor and managing minor devices.

Applications of operating system

The operating system include systems program, tools and software such as windows, Linux, Mac OS, Unix, MS-DOS, FreeRTOS, Bsd and debian which responsible for Low-level processes and operational support system. These systems provide a suitable environment for user.

Screenshots:

Types of CPU schedulin in operating system

IN operating system,the schudiling means that the proceesses is done on time .the objectives of scheduling Algorithm:

1. Maximum CPU usage
2. Minimum waiting time
3. Minimum response time
4. Fair distribution CPU
5. maximum number of process done per unite time
6. Minimum response time

Different Scheduling Algorithms

First come First server (FCFS)	Shortest job First	Longest job First
Shortest remaining time first	Longest remaining time first	Round Robin scheduling
Priority based scheduling (Non-preemptive)	Highest response ration next (HRRN)	Multitive queue scheduling

- Program execution

  OS handles programming of various tasks needed to execute a program

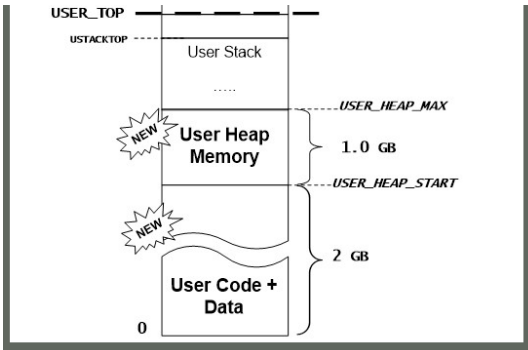
- Access I/O devices
  - Each device will have special interface
  - OS existence of basic interface to users
- managed access to files
  - Accessing several media but presentation of a common interface to user
  - protects in multi-access systems
- System access

  manages access to the system and its several resources

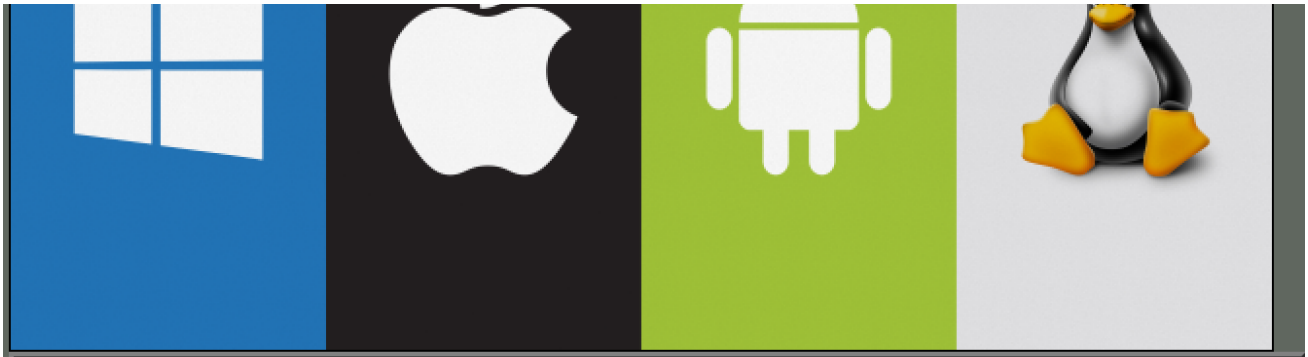
- detects and response
  - Internal and external hardware system errors
  - Software errors
  - Operating system cannot Grant requests of application
- Accounting
  - gather statistics of usage
  - performance of monitor

The main Role of an OS

- A computer is a set of resources for the movement, storage, and operating of data.
- The OS has a responsibility of controlling these resources.



region	region name	range	description
A	program code and data	[O-USER_HEAP_START]	contains the intial code and data of the program
B	Program Heap Memory	[USER_HEAP_START-USER_HEAP_MAX]	contain dynamic memory allocations at runtime of the program
C	program stack	[USER_HEAP_START-USTACKTOP]	contains the program stack area
D	read only region	[USER_TOP-USER_LIMIT]	contains read only memory space that is shablack between kernel and user. All the programs must have identical copy of this region in thier virtual space.
E	kernel code, data and stack	[USER_LIMIT-4GB]	Contains the FOS kernel code, data and stack. All programs must have identical copy of this region in their virtual space



introduction

operating system is system software that manages hardware , software resources, and provides common services for computer programs.the core set of software on a tool that keeps everything together. Operating systems communicate with the device's hardware.They handle everything from your keyboard and mice to the Wi-Fi radio, storage devices, and display.In other words, an OS handles input and output devices. The operation system allocates service and resources such as processors, memory, devices, and information. It has a required program for managing those resources such as memory

with the aid of icons.Most computer working systems subsequently adopted the GUImodel. In the Nineteen Eighties Apple made an settlement permitting Microsoft to use certain factors of the Mac interface in early variations of Windows. However,besides for a short period inside the 1990s, Mac OS has in no way been certified to be used with computer systems made by means of manufacturers aside from Apple.

Later Mac OS releases brought features consisting of Internet record sharing, community browsing, and multiple consumer accounts. In 1996 Apple received rival NeXT Computers, which become founded by way of Steven Jobs after his departure from Apple, and in 2001 the enterprise rolled out Mac OS X, a main redesign based on both the NextStep gadget and Apple's most latest OS release. OS X ran on a UNIX kernel (core software code) and presented technical advances consisting of memory safety and preemptive multitasking, along with a greater versatile Finder, an elegant looking interface referred to as Aqua, and a convenient graphical "Dock" bar for launching often used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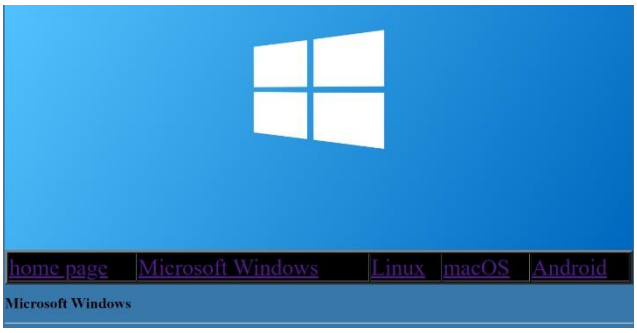
Microsoft Windows, regularly alluded to as Windows, is a gathering of a few restrictive graphical operation system families, which are all evolved and promoted by Microsoft. Every family takes into account a specific segment of the processing business. Windows OS, computer OS (OS) developed by Microsoft Corporation to run personal computers (PCs). Featuring the primary graphical interface (GUI) for IBM-compatible PCs, the Windows OS soon dominated the PC market. Approximately 90 percent of PCs run some version of Windows.
Ensuing adaptations presented more prominent usefulness, including local Windows File Manager, Program Manager, and Print Manager programs,and a progressively unique interface. Microsoft additionally created particular Windows bundles, including the networkable Windows for Workgroups and the powerful Windows NT, focused on organizations. The 1995 shopper discharge Windows 95 completely coordinated Windows and DOS and offered worked in Internet support, including the World Wide Web program Internet Explorer.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Source code:

```
<li>An interface among application and equipment</li>
</ul></font>
<h2><font size="6" color="black">main objectives of an OS:</font></h2>
<font size="5" color="black"><ul type="circle">
<li>Convenience </li>
<li>Efficiency </li>
<li>Ability to evolve</li>
</ul></font>
<h2><font size="6" color="black">Administrations Provided by the Operating System</font></h2>
<font size="5"><ul type="circle"><font size="5">
<li><font color="black">Program development</font></li>
</font><p><font size="5">Editors and debuggers.</font></p>
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<h2><font size="6" color="black">Operating System as Software</font></h2>
<font size="5" color="black"><ul type="circle">
<li>The OS roles do not differ from these in an ordinary computer software.It
 is a program that must be executed by the CPU</li>
<li>Operating system concedes control of the processor</li>
</ul></font>
<h2><font size="6" color="black">Evolution of Operating Systems</font></h2>
<font size="5" color="black"><ul type="circle">
<li>Hardware improves plus new kinds of hardware</li>
<li>New services</li>
<li>repairs</li>
</ul></font>
<h2><font  size="8">The page table of virtual Memory</font></h2>
<p><font size="6" color="black">One of the operating system roles in stage of excution
the program is creating the virtual page table which connects the program with
real memory by mabbing between virtual adress and physical adress.</font></p>
<img alt="Virtual Memory" src="virtual memory.jpg">
</br></br>
<table border="5" width="100%" height="40%" cellspace="1" bgcolor="black">
<tr>
<td>region</td>
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<tr>
<td><font size="8" color="blue"><a href="home page.html"> home page</a></font></td>
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<img src="windows2.jpg" height="50%" width="50%">

    With the 2001 arrival of Windows XP, Microsoft joined its different Windows bundles under a solitary flag,
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Version 1.0 of the Linux kernel, the core of the working system, was launched in 1994. About the identical time,
American software developer Richard Stall-man and the FSF made efforts to create an open-source UNIX-like working
device referred to as GNU. In evaluation to Torvalds,Stall-man and the FSF began by growing utilities for the working
system first. These utilities were then delivered to the Linux kernel to create a complete system known as GNU/Linux,
or, much less precisely, just Linux.

<img src="linux0.jpg" height="50%" width="50%">

   Linux grew throughout the 1990s due to the efforts of hobbyist developers. Although Linux is not as user-pleasant as
the popular Microsoft Windows and Mac OS running structures, it's far an green and reliable gadget that handly even
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  On Nov. 5, 2007, Google announced the founding of the Open Handset Alliance, a consortium of dozens of era and mobile
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