Operation in The System Flows and Their Types
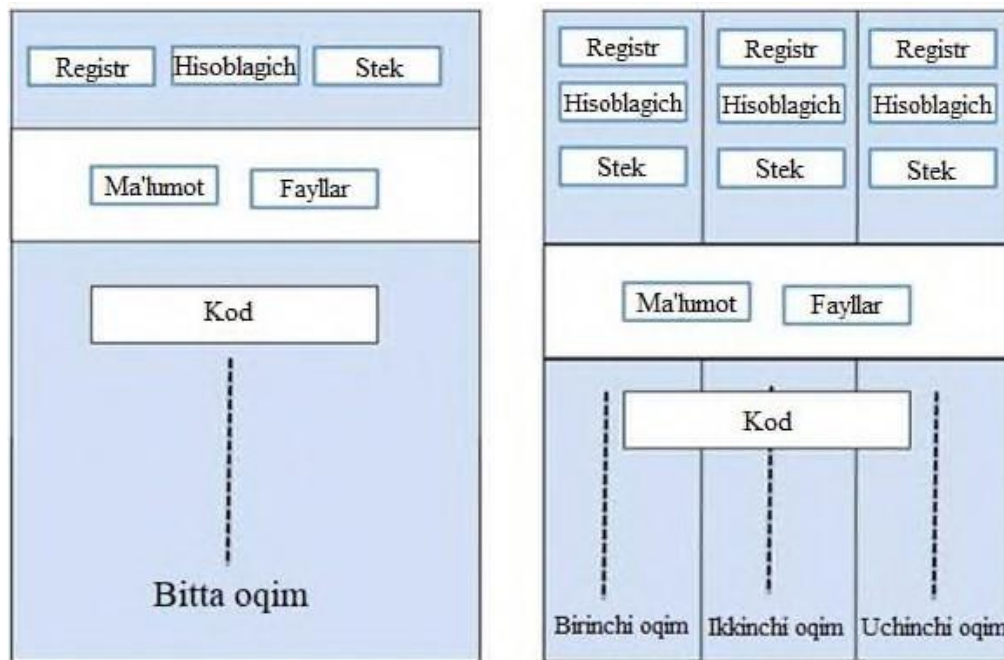
Yuldashev Mirzohid Maxmudjonovich

Andijan state technical institute, Andijan, senior teacher, Uzbekistan

Abstract: The course on operating systems is an integral part of any computer education. Therefore, rapid changes are taking place in this field, as computers are now used in almost all areas of everyday life.

Keywords: Operating systems, threads, user level currents, meaning until meaning model, meaning until one model, one to one model.

Introduction: Operating systems are an integral part of any computer system. Therefore, a course in operating systems is an integral part of any computer education. Rapid changes are taking place in this area, as computers are now widespread in almost all areas of everyday life - from devices built into cars to the most sophisticated planning tools for governments and multinational companies. A modern computer consists of one or more processors, RAM, disks, a printer, a keyboard, a mouse, a display, network interfaces and various other input/output devices. The result is a rather complex system. In addition, managing all the components and their optimal use is a very difficult task. Therefore, computers are equipped with a special level of software called an operating system, the task of which is to manage user programs and all their resources.

A thread is the essence of an operating system, the process of executing a set of instructions on a processor, or more precisely, program code. The general purpose of threads is to execute two or many different tasks in parallel on a processor.

1- picture. One flowing one process, three flowing one processappearance

Flow own code segment, data segment and open files with its peers. If one stream is a code segment memory element if it changes, remaining all currents this sees. Flow light process that also is called. Currents provides a way to improve program efficiency through parallelization. The following figure shows the operation of single-threaded and multi-threaded processes. shown.

Flows are workflows that correspond to a classic process improve the performance of the operating system by reducing aimed at software approach.

1- table. Process and between the streams difference

No.	Process	Flow
1	Process heavy or many resourcedemand does	The flow is light and the process requires fewer resources than does
2	Process switching requires interaction with the operating system	Switching streams does not require interaction with the operating system
3	One how many again workEvery process in the environment is the same the code will do, but own memory and to file resources has	All currents child open files in the same process set sharing possible
4	If one process If blocked, then the first process Until unblockedother process not fulfilled	One stream is blocked and waiting at the time, second thread in the same task performance possible
5	One how many processeswithout using streamsuses more resources	Many flowing processes lessfrom resources uses

6	One how many in processes every oneThe process is carried out independently . increased	One stream, another streaminformation study, to write or change possible

Every one stream clear one to the process relevant and from the process no current will exist outside. Each current is separate management flow means. Currents network servers and web servers done in increasing successful used. They also, general to memory has was many in processors applications parallel accordingly to perform for worthy the basis provides.

Flow advantages

❖ Currents context replacement time reduces ;

❖ Using streams allows for parallelism within a process provides ;

❖ Effective communication;

❖ More on switching and creating context streams economical ;

❖ Currents many processor from architectures wide on a scale and effective to use opportunity gives.

Flow types

Currents following two in a way done increased:

❖ **User level currents** (User Level Threads) - user governing currents ;

❖ **Core level currents** (Kernel Level Threads) – in the core working operational system governing currents ,operational system core .
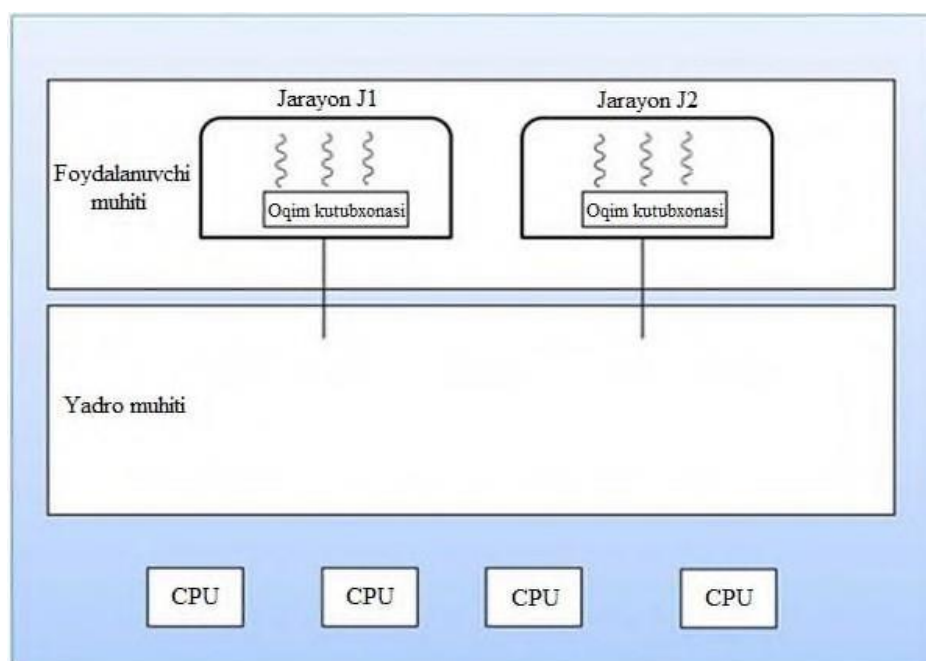
User level currents

Such without, streams management core of streams existence about aware It won't happen. Currents library create and destroy streams, messages and data streams between transmission, streams to do planning and stream contexts restoration and storage codes own inside takes.

User level of streams advantages:

❖ Stream replacement core mode benefits demanddoes not do;

❖ User level stream any operational in the system performance possible;

❖ Planning user level to the stream typical was program to be possible;

❖ User level currents quickly will be created and managed.

User level of streams disadvantages:

❖ Simple operational in the system system of calls mostblocke;

❖ Multithreaded applications require multiprocessor processing from the advantages use can't.

2- picture. User level currents

Core level currents

Such without, the flow management core by done is increased. Application in the field flow control code there is it's not. Kernel threads are directly supported by the operating system. powered. Every how application many flowing programming possible.In the application all currents one in process is supported.

Core whole process for and process in the content separately currents for context information save stands. Core by planning currents based on done is increased. Core streams create, planning and to manage core carried out in the field increases. Core currents usually user to the streamsthan slower will be created and managed.

Advantages

❖ The kernel can schedule multiple threads from the same process to multiple processes at the same time;

❖ If one thread in a process is blocked, the kernel can schedule another thread in the same process;

❖ Can make the kernel module itself multithreaded; Disadvantages

❖ Kernel threads are generally created and managed more slowly than user threads;

❖ the same process requires switching to kernel mode.

Many flowing model

Some one operational systems combined user which combines core-level flows and core-level flows Solaris is a good fit for this unified approach.is an example. In an integrated system, multiple applications in a single program threads can run in parallel on multiple processors, and blocking system call whole the process not blocking necessary.

Many flowing models three to the type divided into:

❖ Many until meaning model ;

❖ Many until one model ;

❖ One until one model .

Many until meaning model

Many until meaning to *the model* example following 2.7-in the pictureThe many to many model can handle any user flows.equal or small numerical core to the streams increases.

3- in the picture many flowing model shown, then 6 user-level threads with 6 core-level threadsmultiplied.

This in the model working speakers, how much usercan create as many streams as needed and match core currents many processor in the car parallel accordingly it can work.
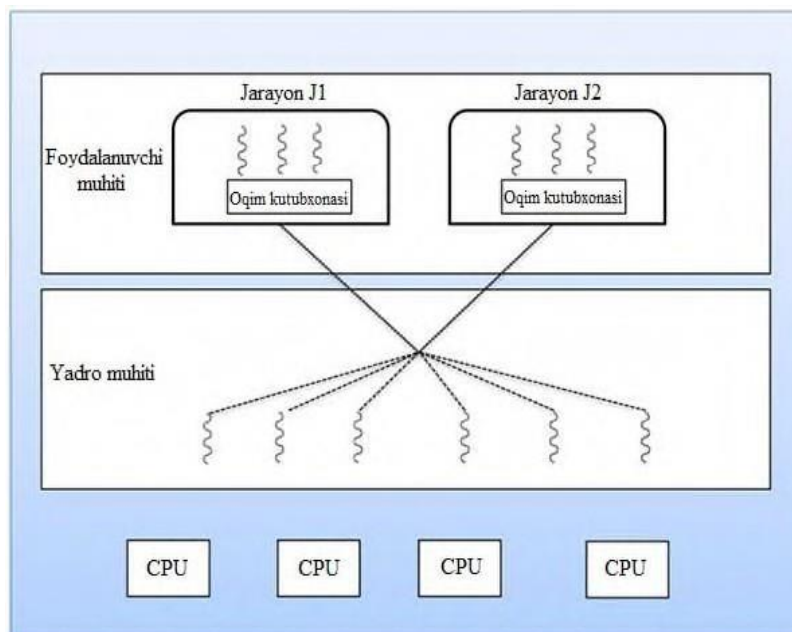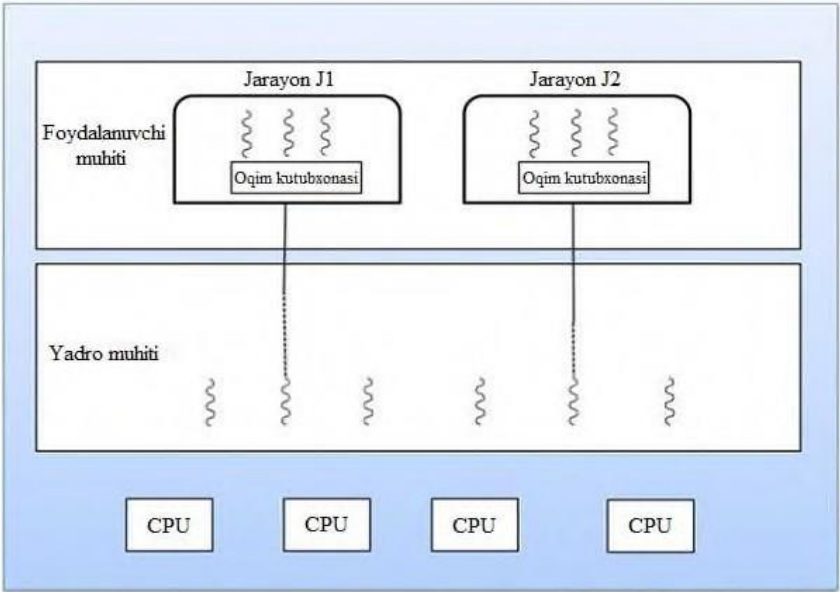

Figure 3. Many to many model

Many until One Model

The many to one model allows for multiple user-level flows. one core level currents with compares. Streams control by the streams library in user space done is increased.

If stream block system call done increases, whole process is blocked. One of time in itself only one stream to the core can be accessed, so on multiprocessor systems, multiple currents parallel accordingly work can't. If
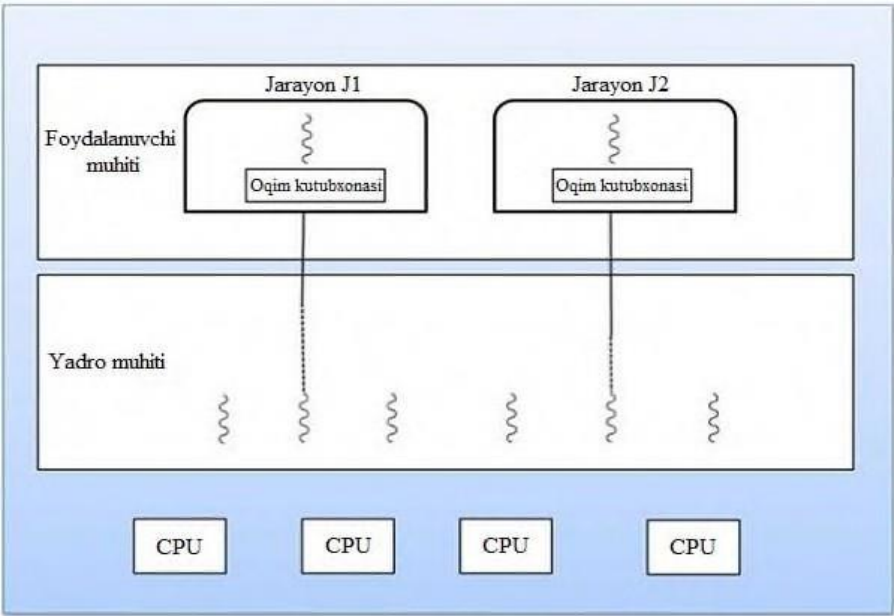
4- picture. Many until One model

user level currents libraries operational in the system system not supporting them in a way done if increased, then core flowmeaning until one model uses.

One to One Model

User level stream and core level streamThere is a one to one relationship between. This model is many to one to the model than more parallelization provides.

From this except, she is block system call done when increased, other allows the stream to run. Parallel in microprocessors execution for one how many streams supports. This model disadvantage is that, user flow createA kernel-compatible stream is required for OS/2, Windows NTand Windows 2000 OTs one until one from the model uses.

5- picture. One until One model

User level and core level stream between difference

Table 2

	User level currents	Nuclear levelcurrents
o.		

User -level flowsfaster will be created and managed	Core-level flows are created and managed more efficiently .will
User level stream library by done increased	Operation system core create streamssupports
User level stream is general and any operational in the system performance possible	Operation system for to oneself typical corelevel stream
Multithreaded applications cannot take advantage of multiprocessor processing capabilities.	The kernel module itself can be multithreaded.

REFERENCES

Ann McIver McHoes Ida M. Flynn. Understanding operating systems. Sixth edition, 2011. – 591 p. Library of Congress Control Number: 2010920344.

Kabul O'g'li , TM, & Makhmudjonovich , YM (2024). DEVELOPMENT OF A RAPID READING PROGRAM FOR MOBILE DEVICES. SCIENCE AND INNOVATION RESEARCH IN MODERN EDUCATION, 2(16), 159-162.

Mannobjonov , O., & Yuldashev , M. (2025). ONLINE PLATFORMS FOR VIRTUAL TRAINING IN MOBILE APPLICATION DEVELOPMENT AND MOBILE APPLICATION CREATION FOR VARIOUS PLATFORMS. Молодые Scientists , 3(1), 72-75.

Koldashev , E., & Yuldashev , M. (2023). TO THE STRATEGIC DEVELOPMENT OF THE NEW UZBEKISTAN IS MODERN MANAGEMENT. International Journal of Advance Scientific Research , 3(12), 215-223.