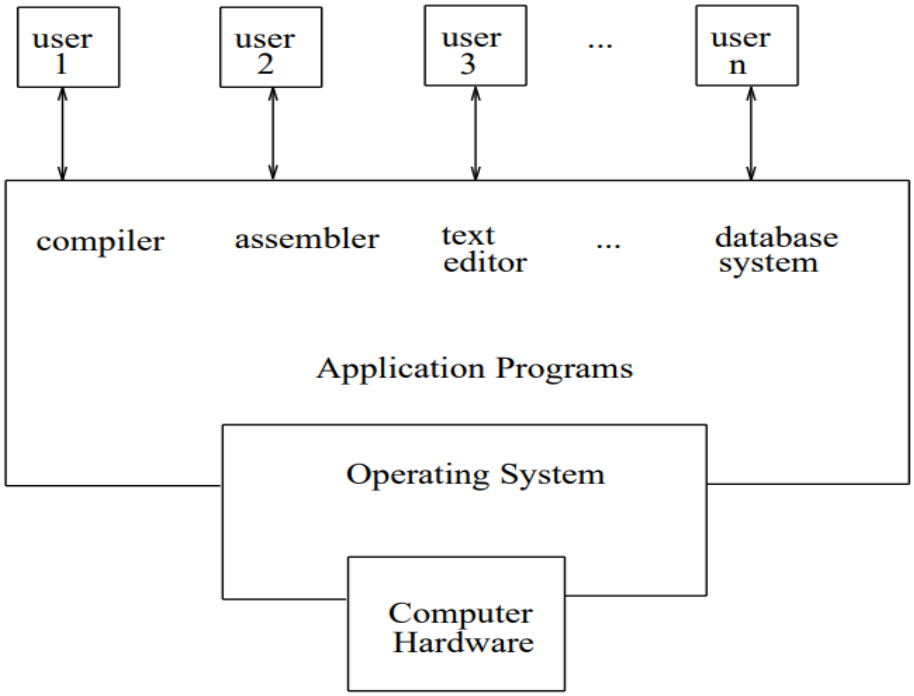
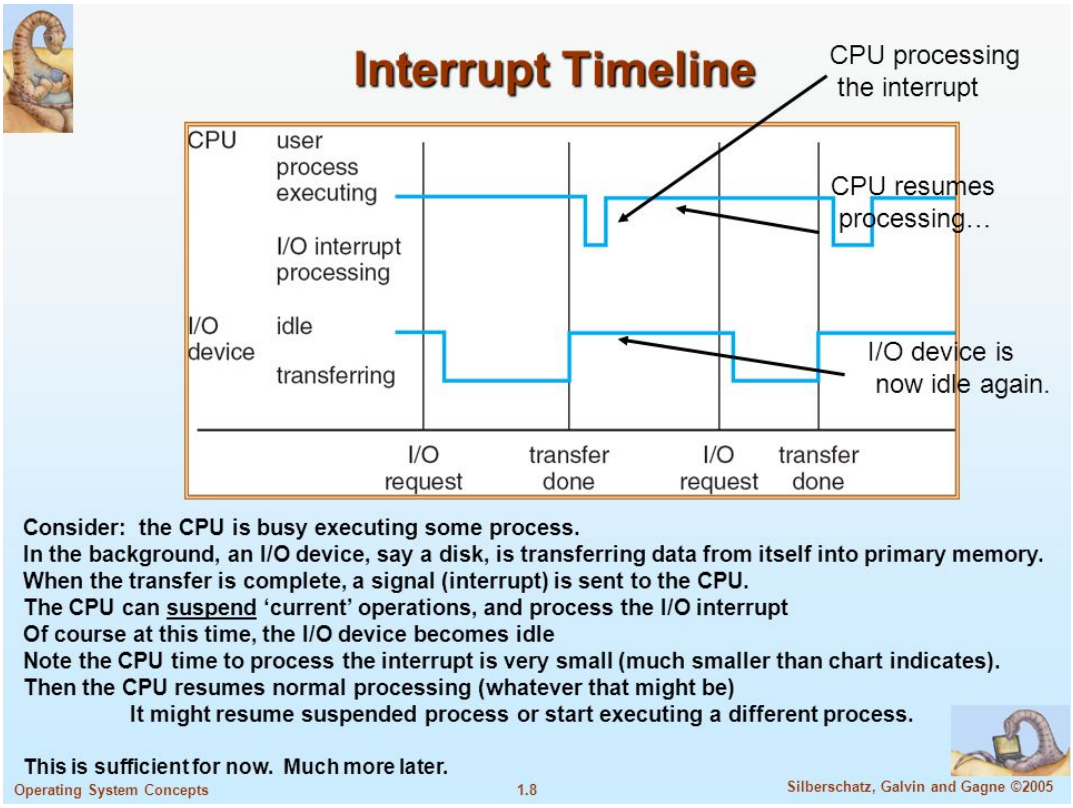


5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.



5-Mark Explanation:
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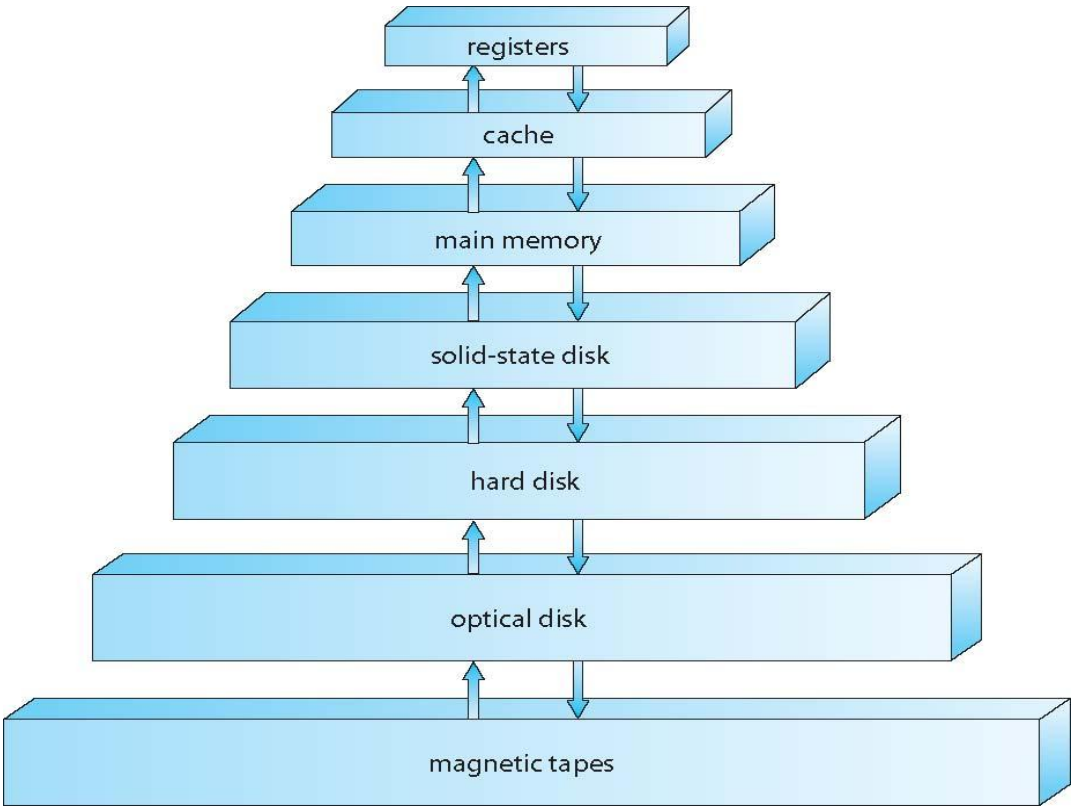

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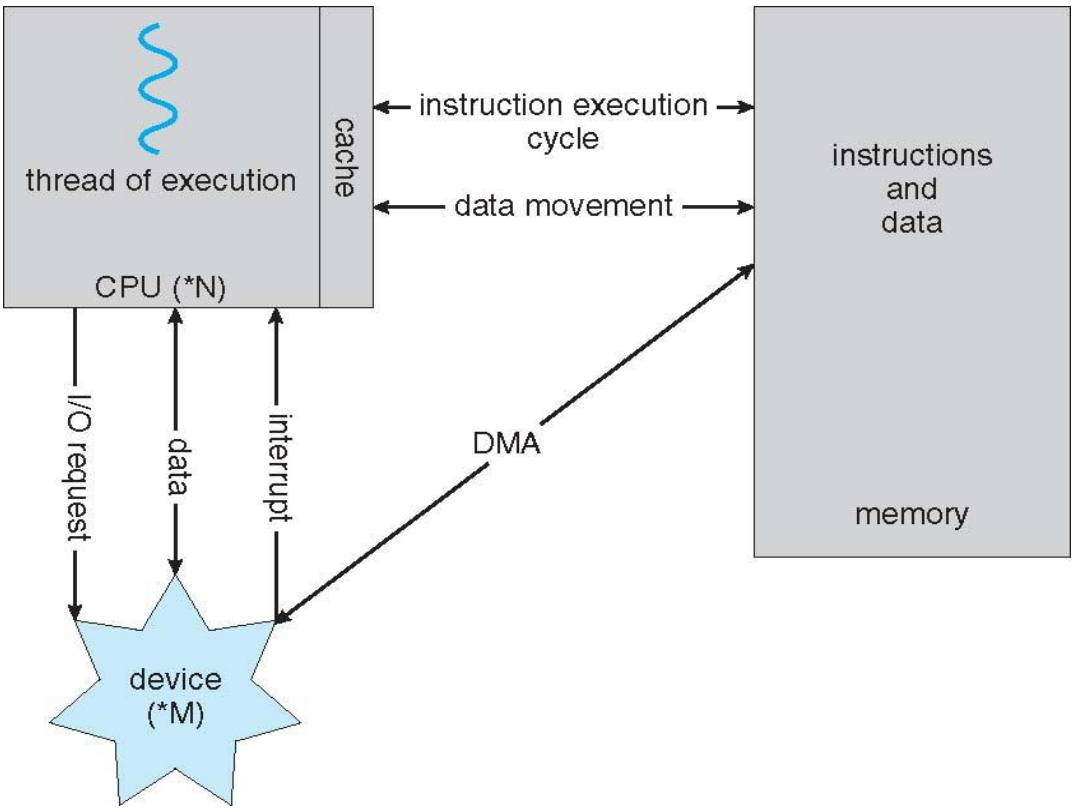

5-Mark Explanation:
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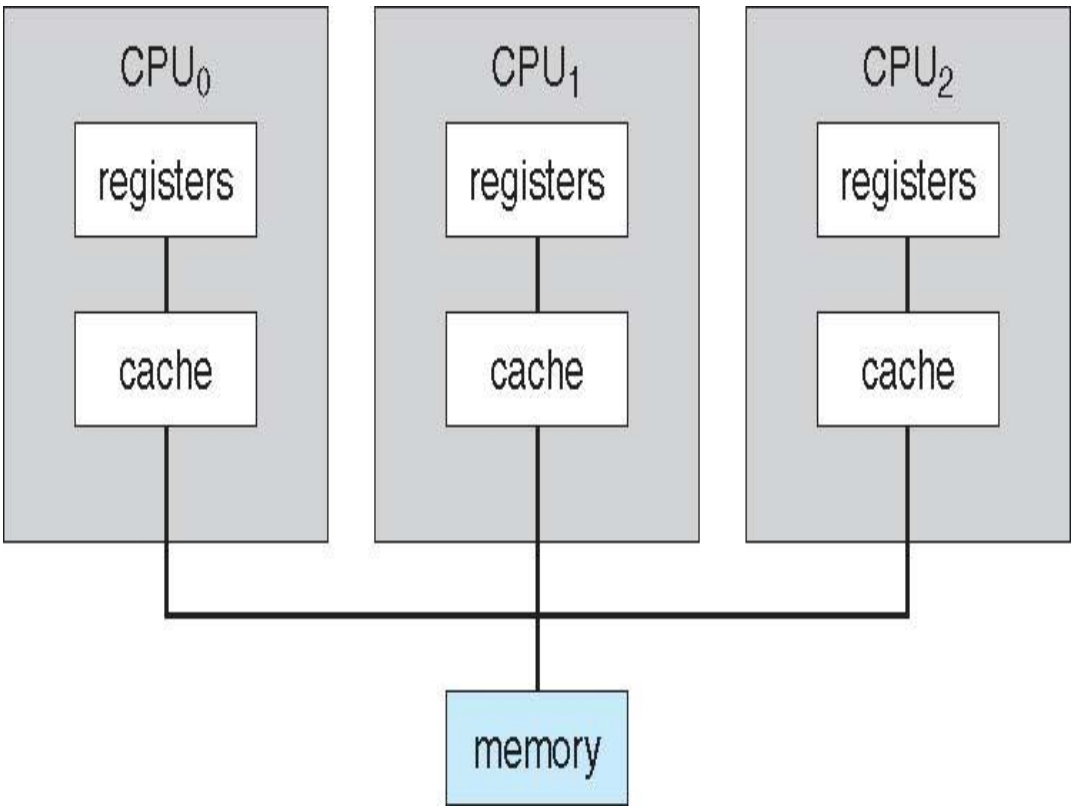

5-Mark Explanation:
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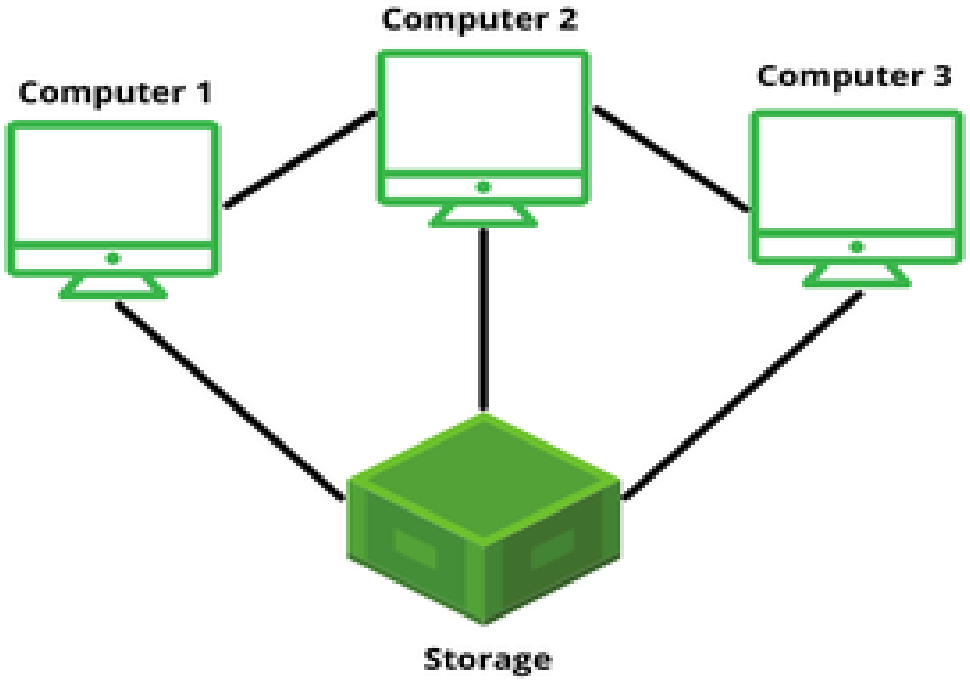

5-Mark Explanation:
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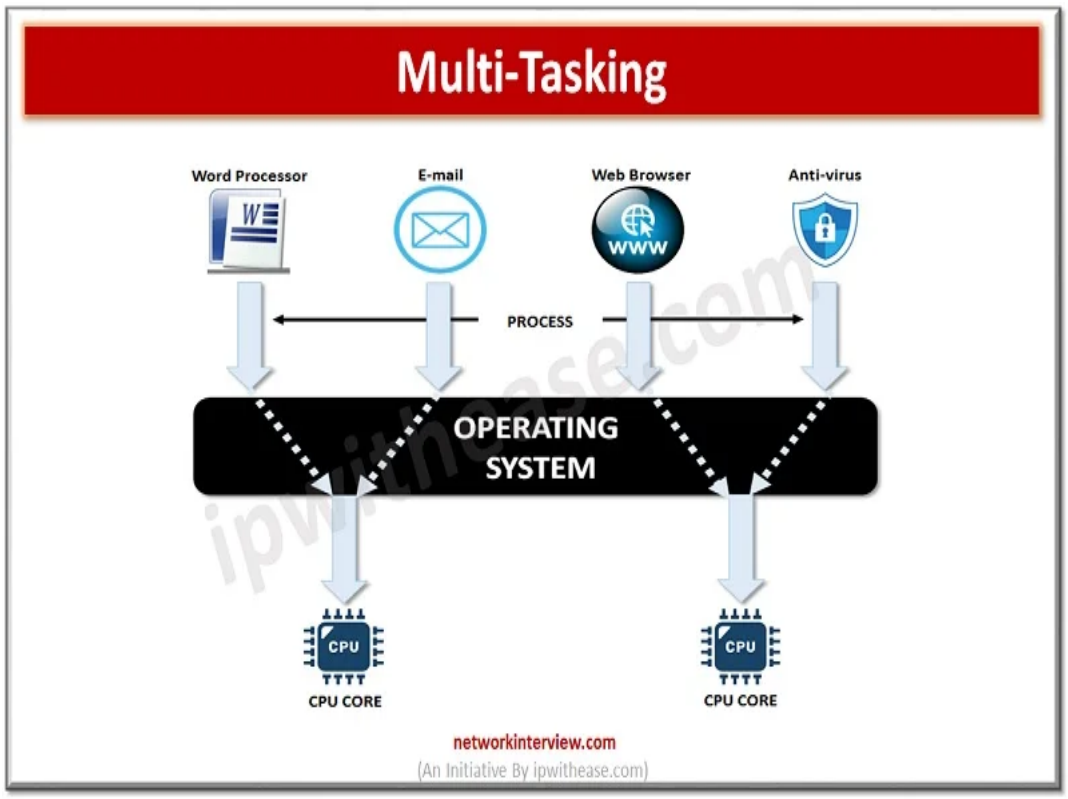

5-Mark Explanation:
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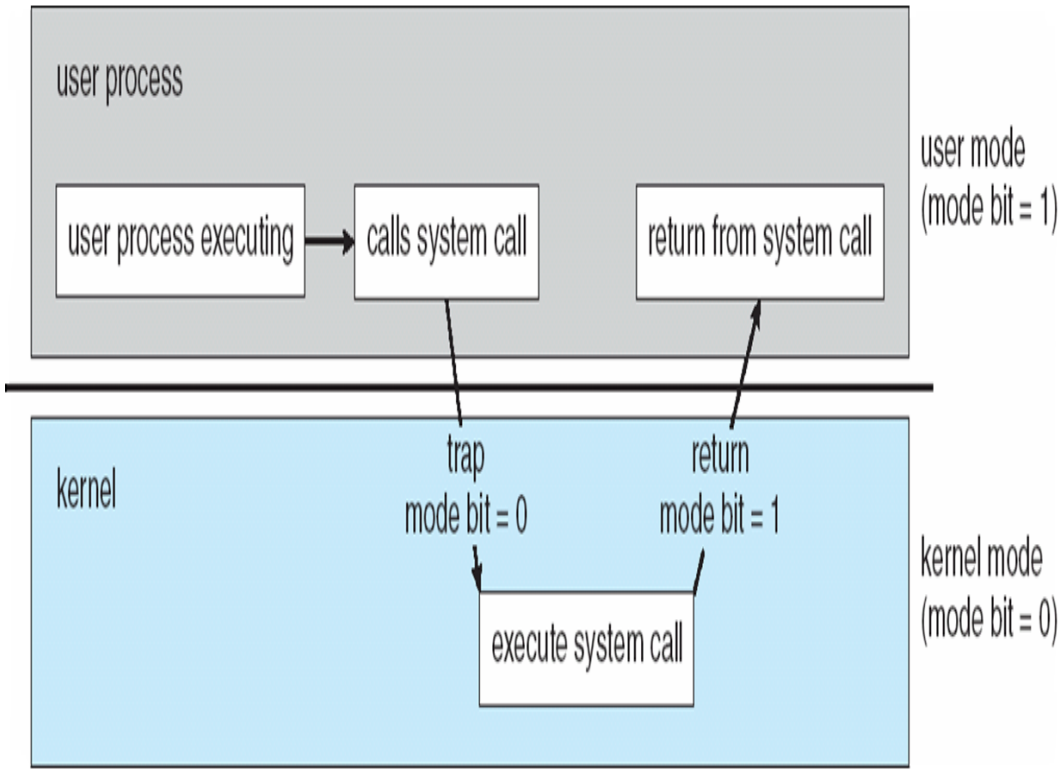

5-Mark Explanation:
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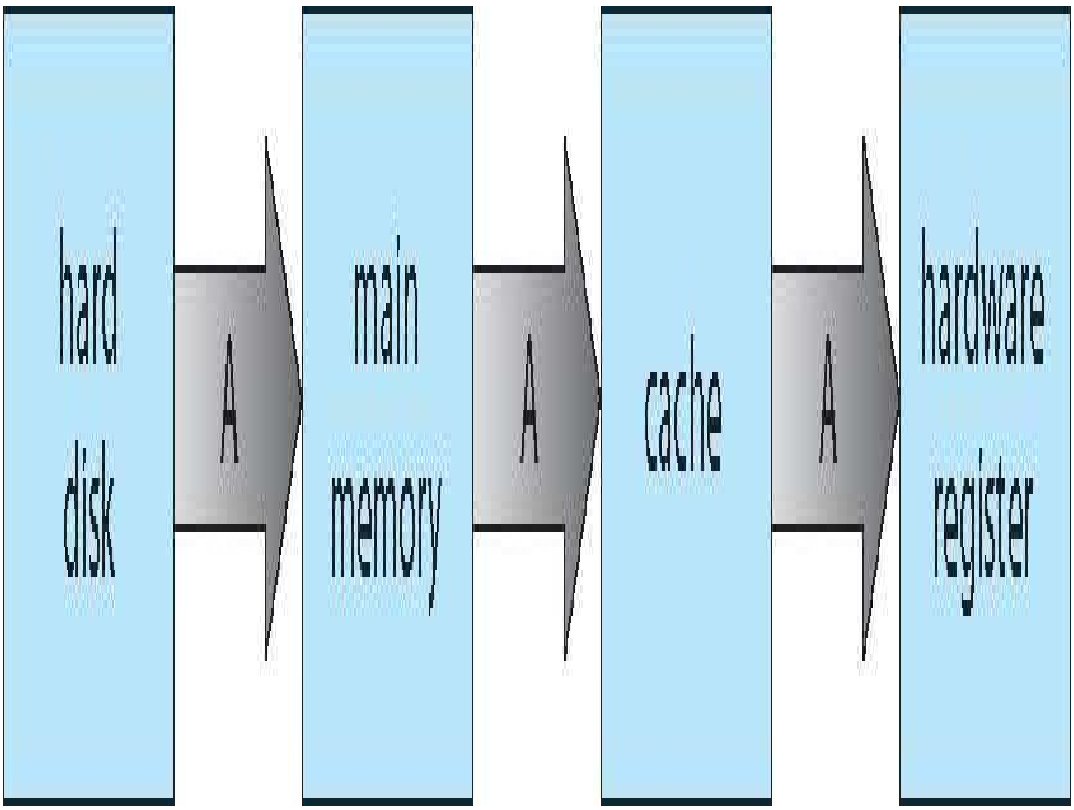

5-Mark Explanation:
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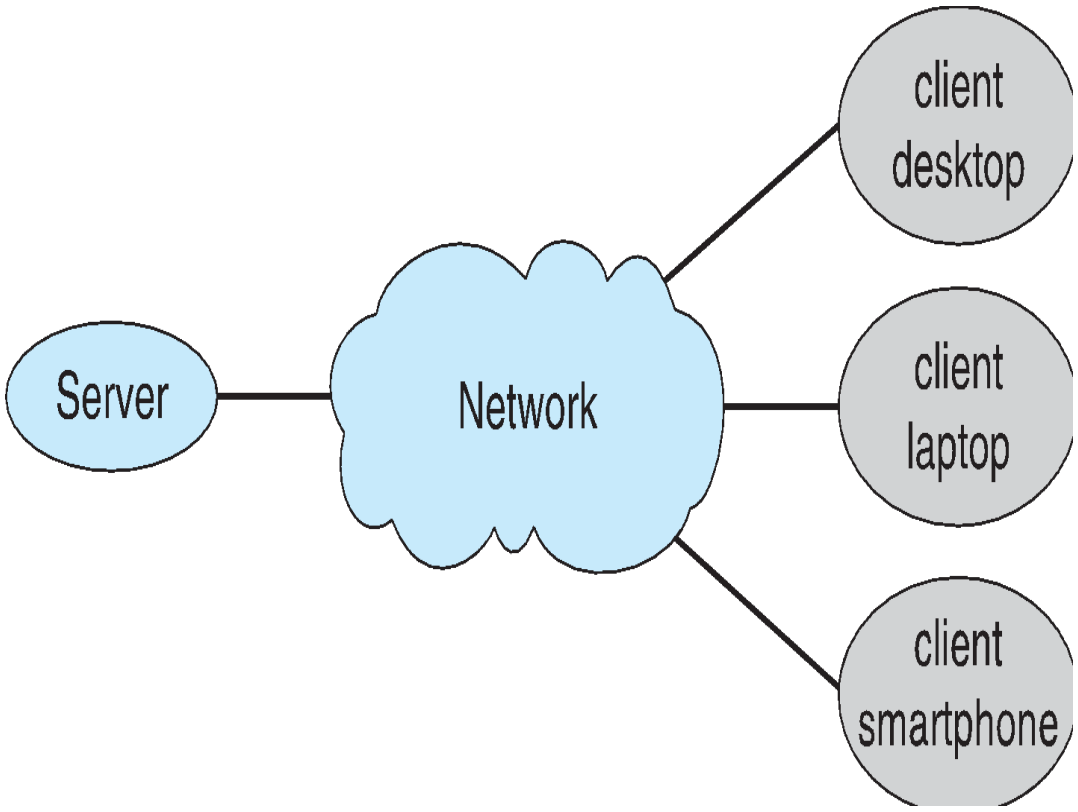

5-Mark Explanation:
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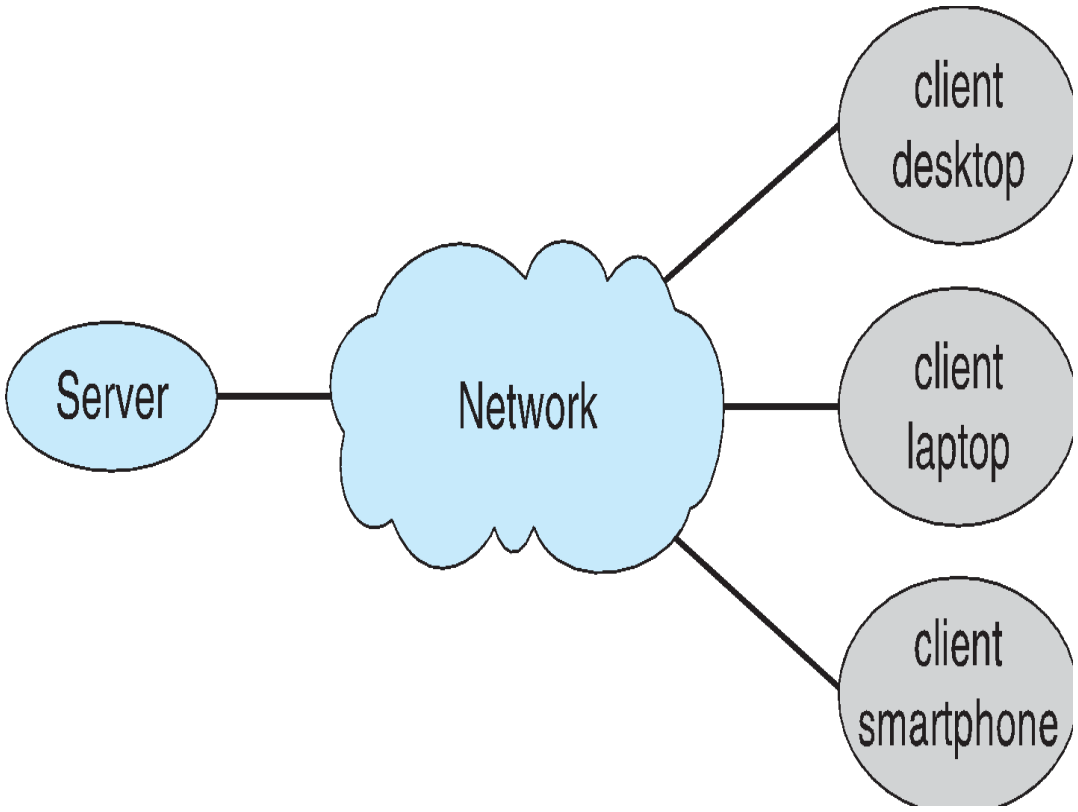

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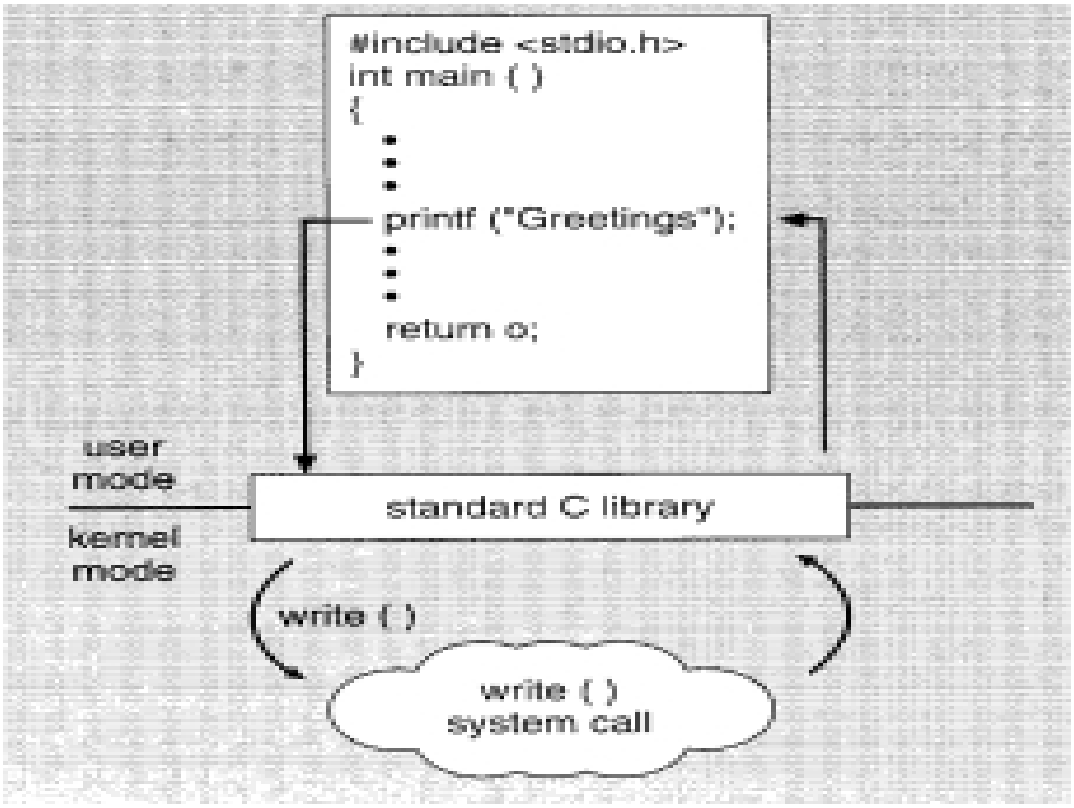
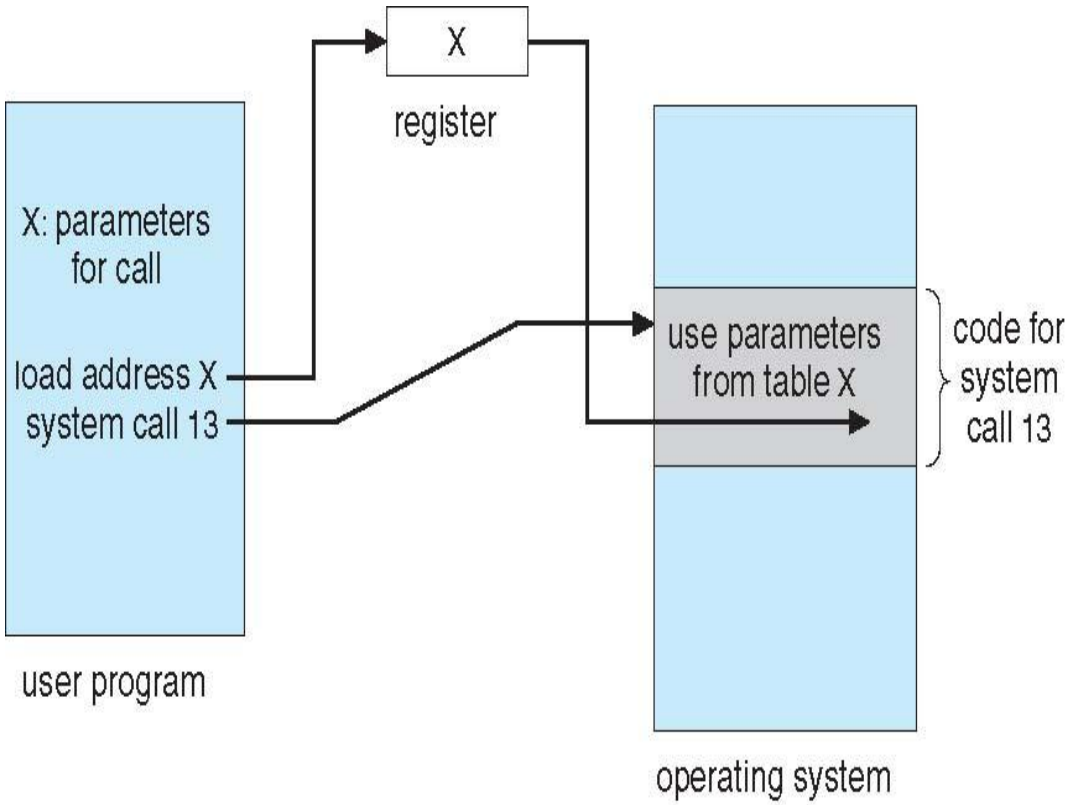


5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.



5-Mark Explanation:
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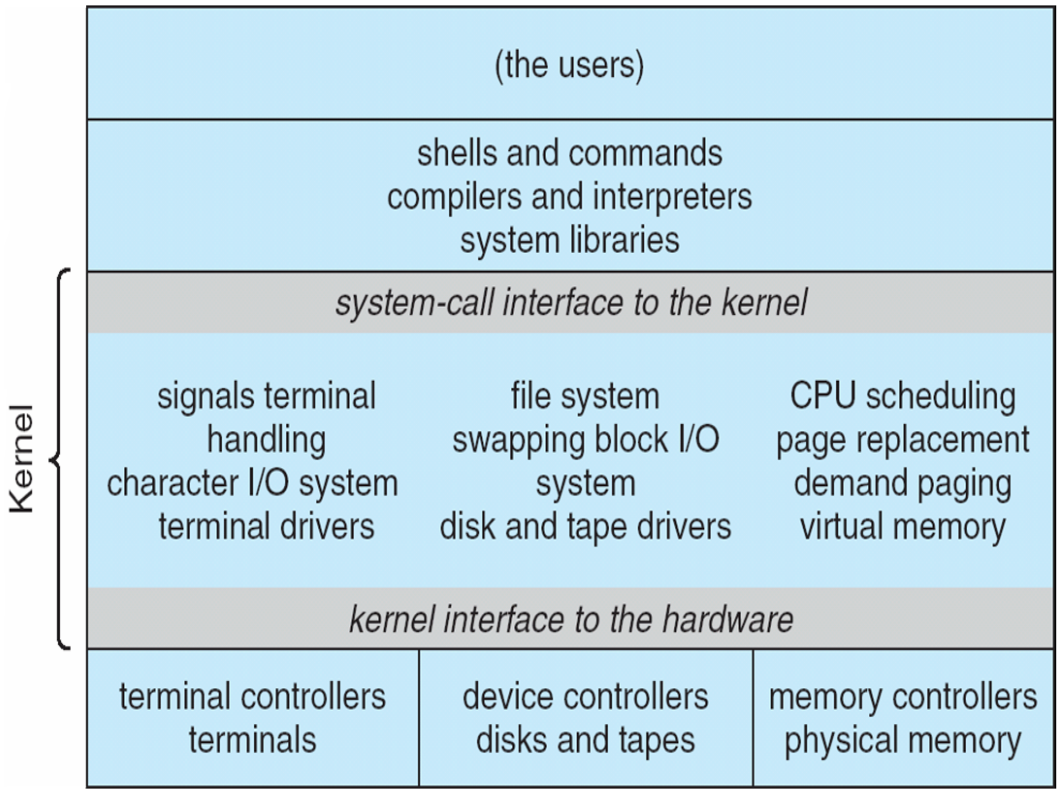

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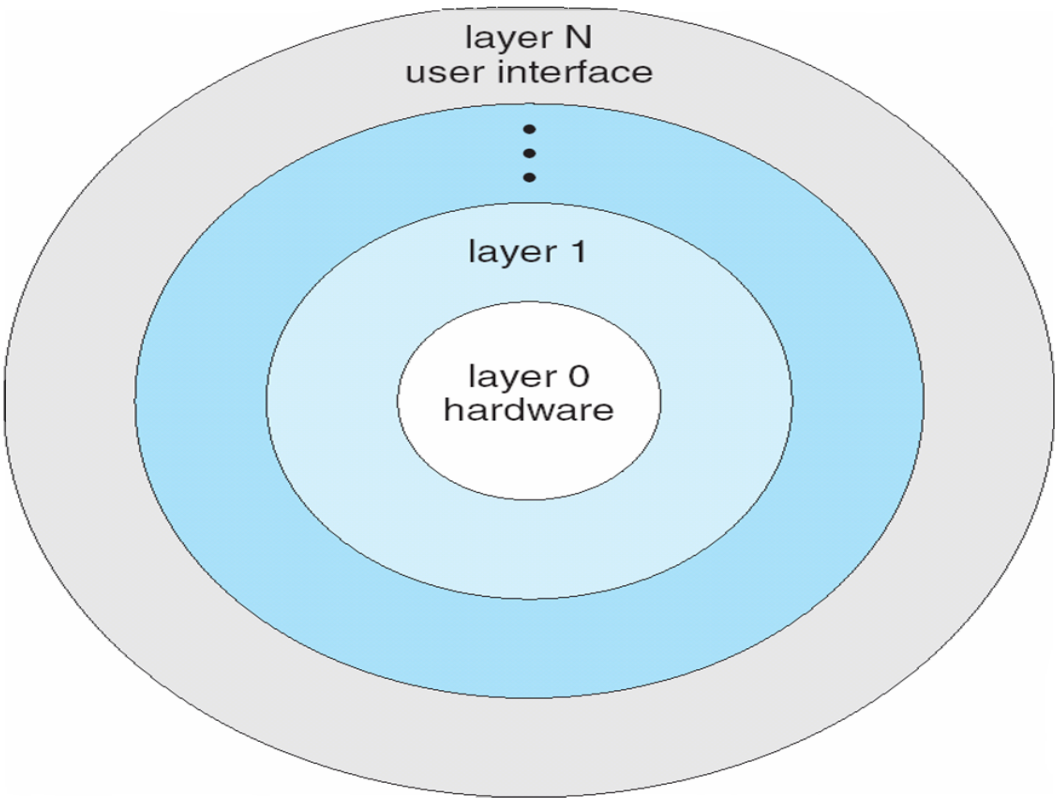

5-Mark Explanation:
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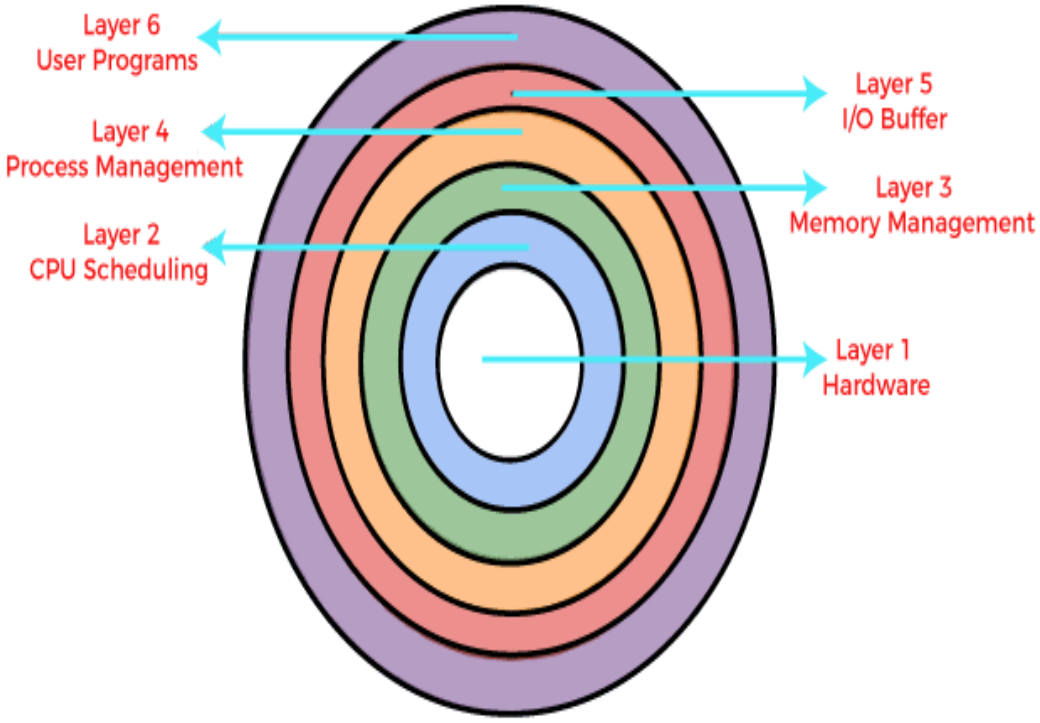

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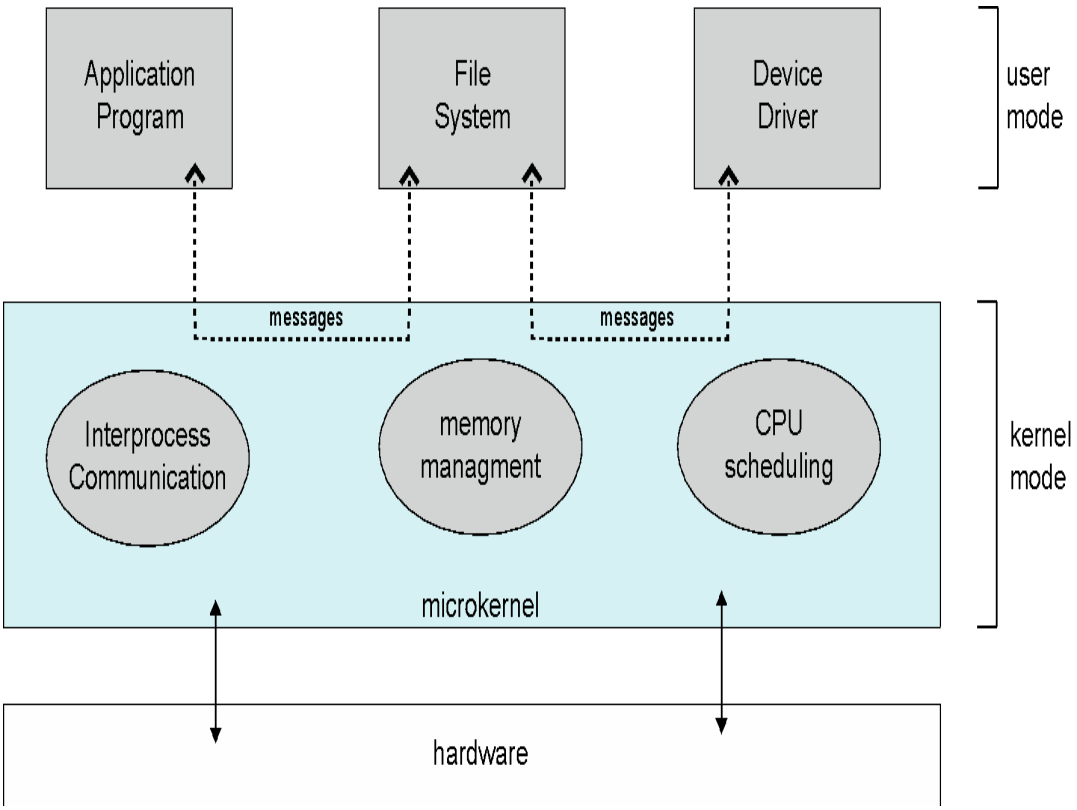

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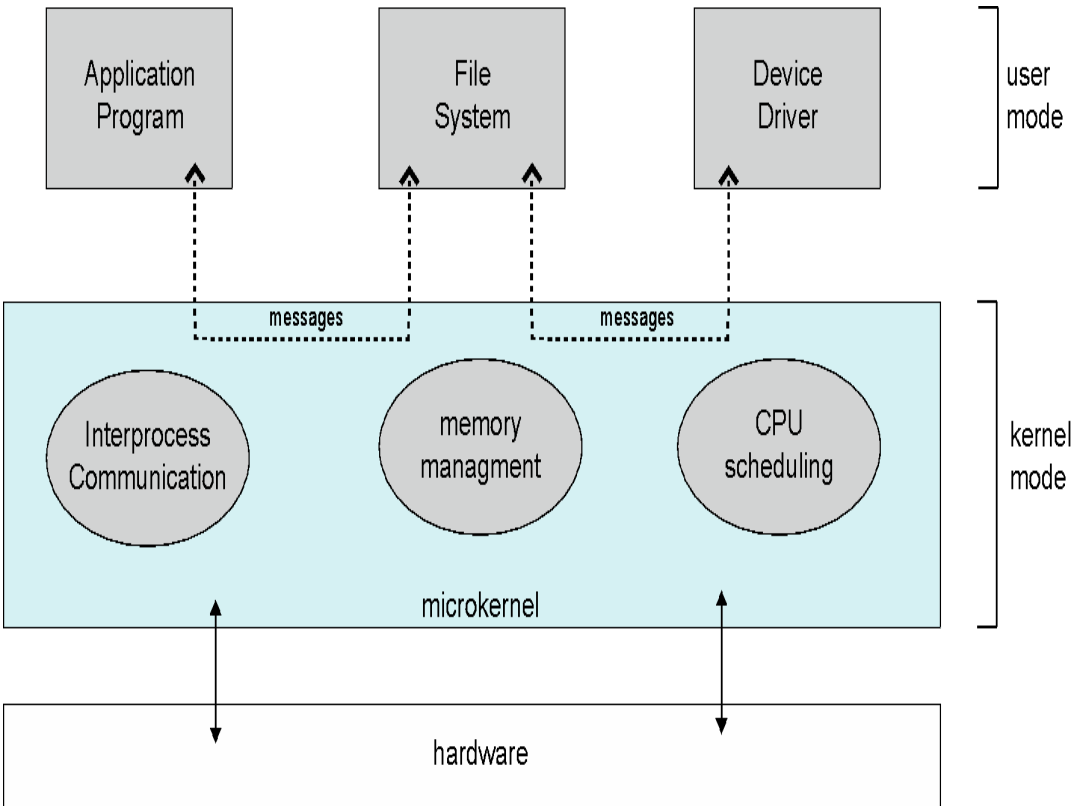

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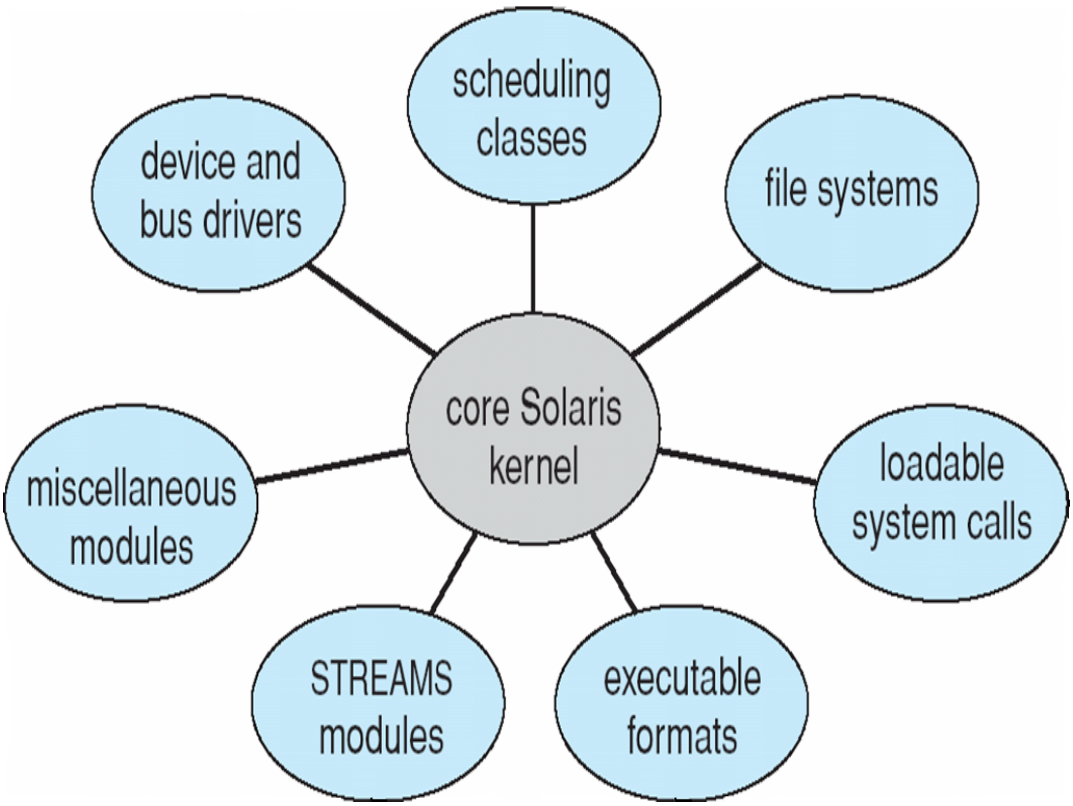

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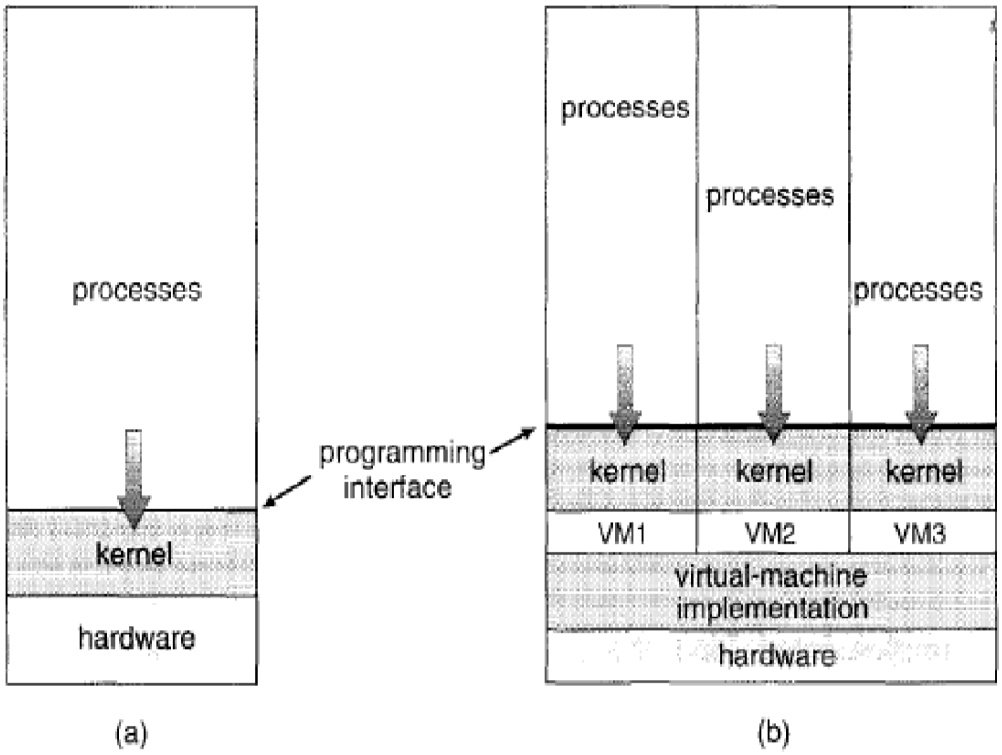

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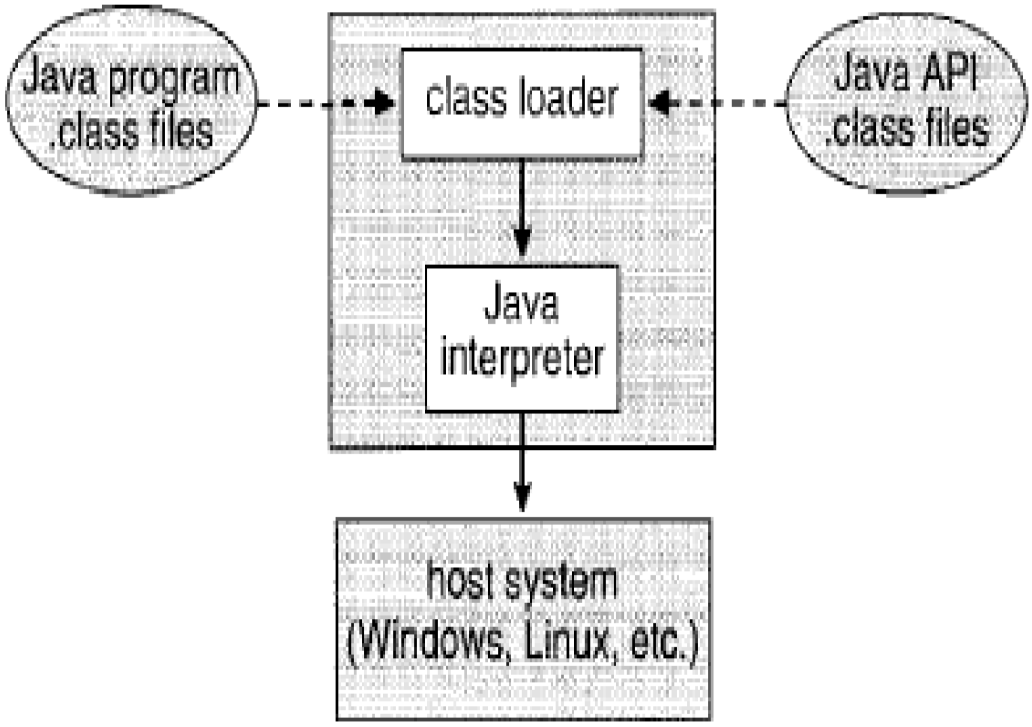
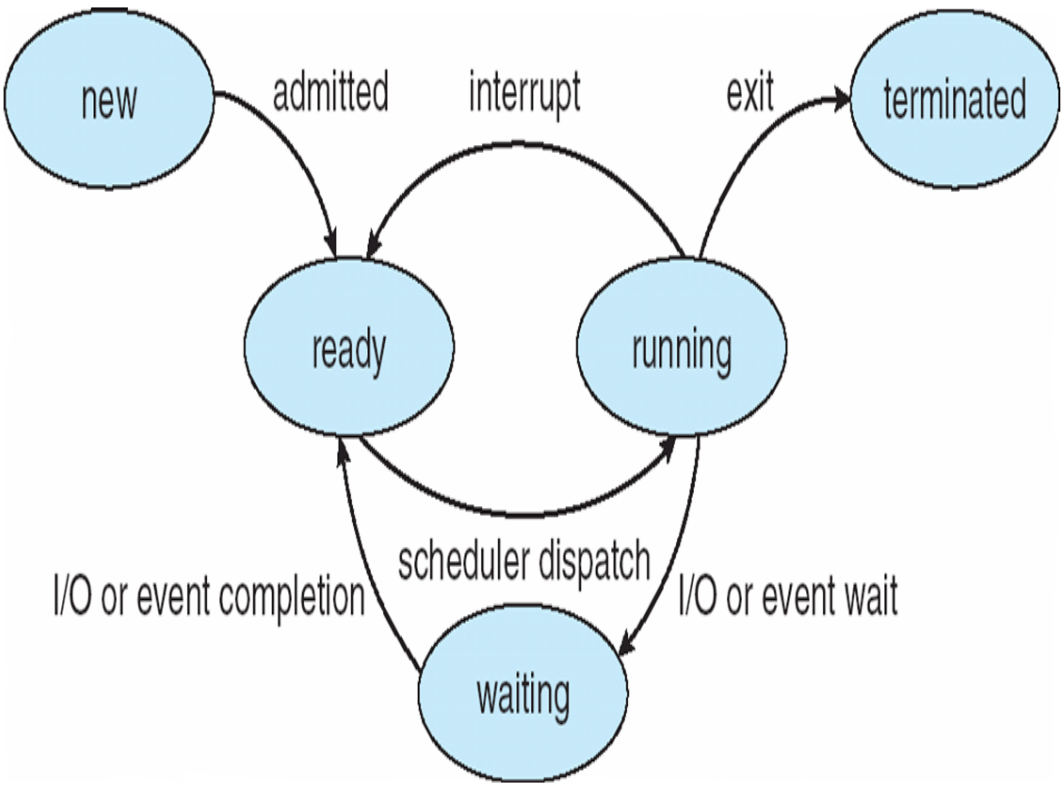


5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.



5-Mark Explanation:
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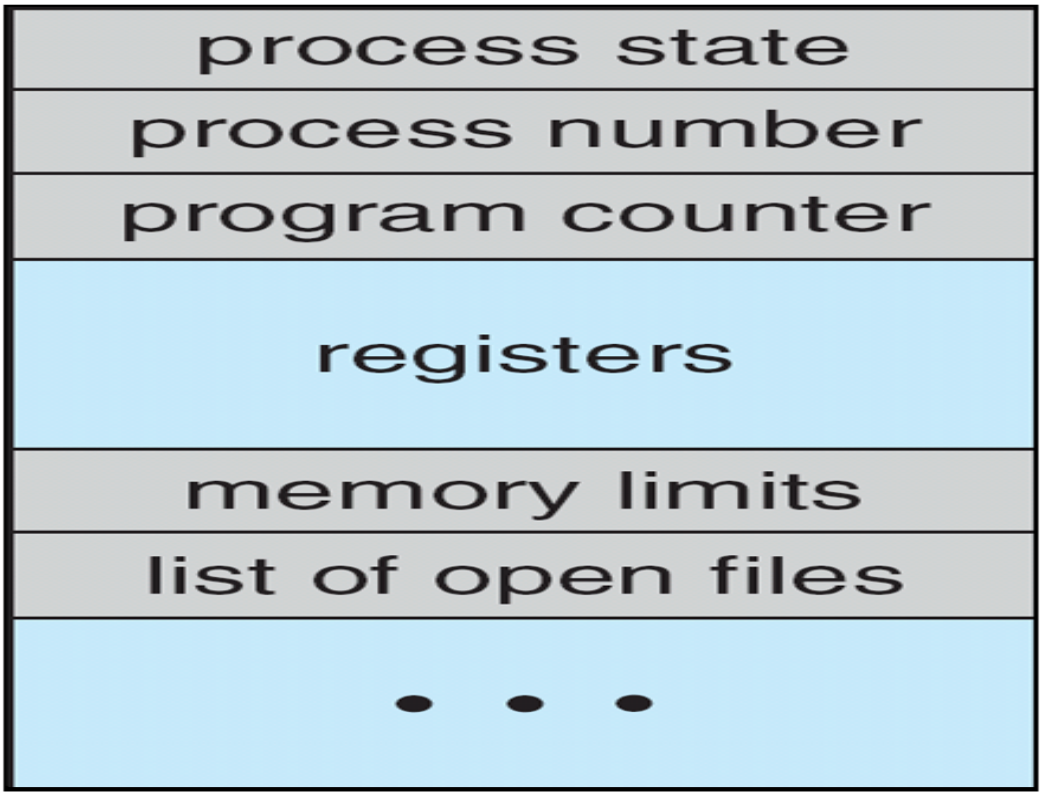

5-Mark Explanation:
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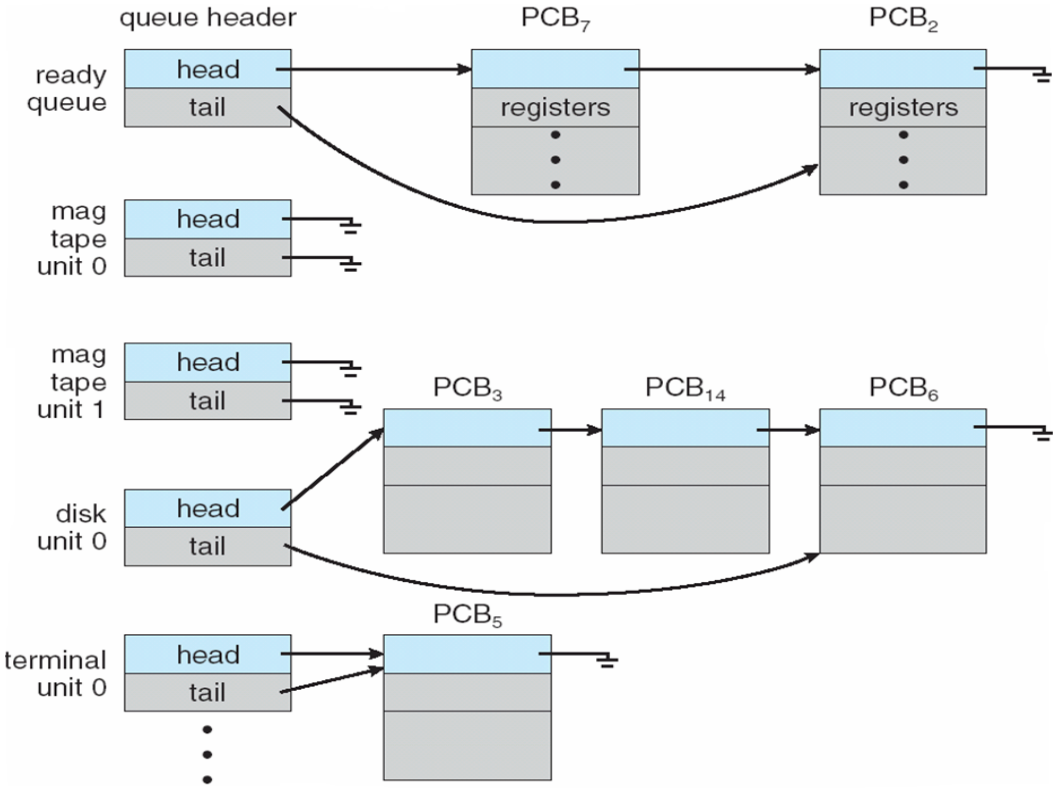


5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.

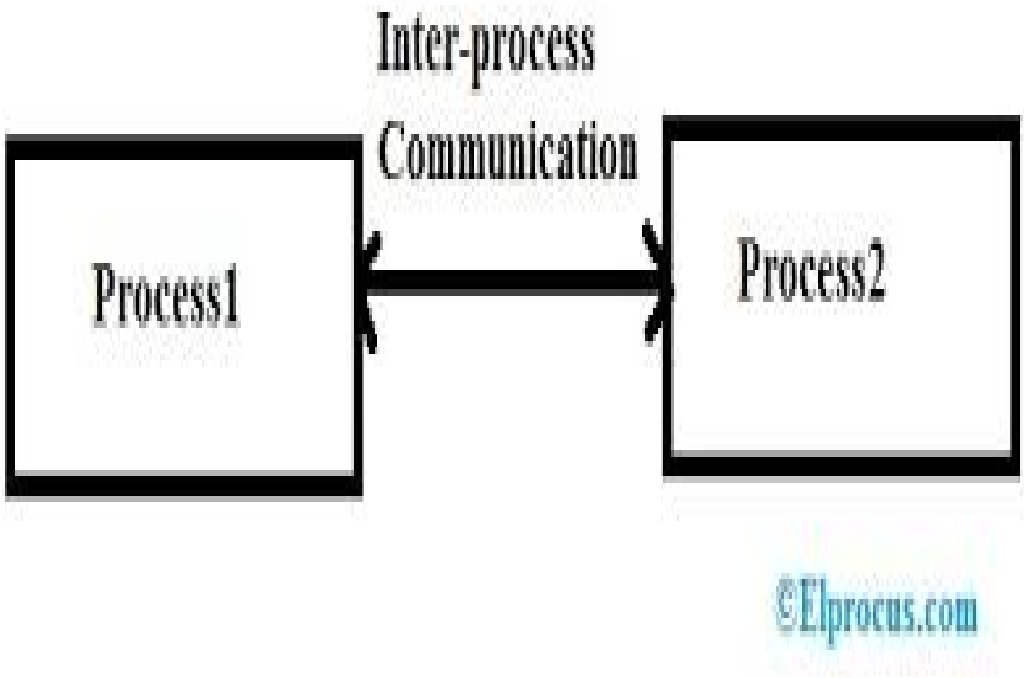
```c
#include <sys/types.h>
#include <stdio.h>
#include <unistd.h>

int main()
{
pid_t pid;

    /* fork a child process */
    pid = fork();

    if (pid < 0) {/* error occurred */
       fprintf(stderr, "Fork Failed");
       exit(-1);
    }
    else if (pid == 0) {/* child process */
       execlp("/bin/ls","ls",NULL);
    }
    else {/* parent process */
       /* parent will wait for the child to complete */
       wait(NULL);
       printf("Child Complete");
       exit(0);
    }
}
```

5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.



5-Mark Explanation:
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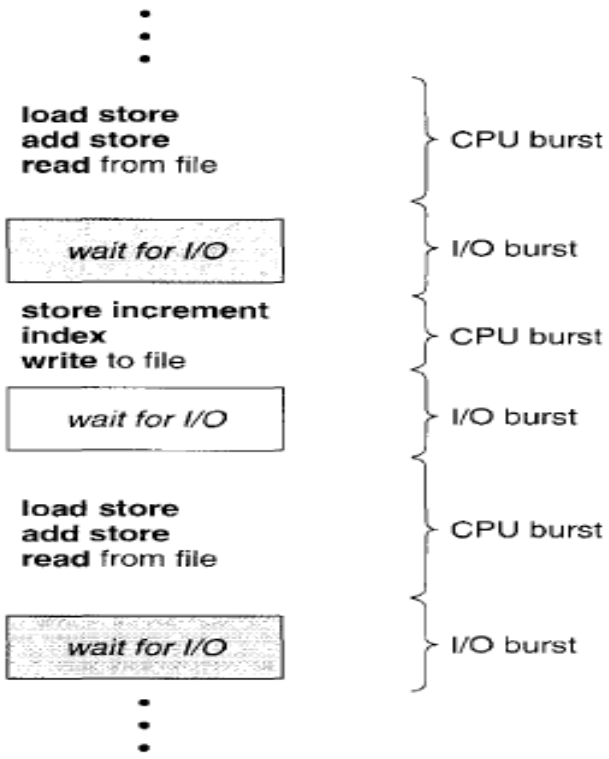

5-Mark Explanation:
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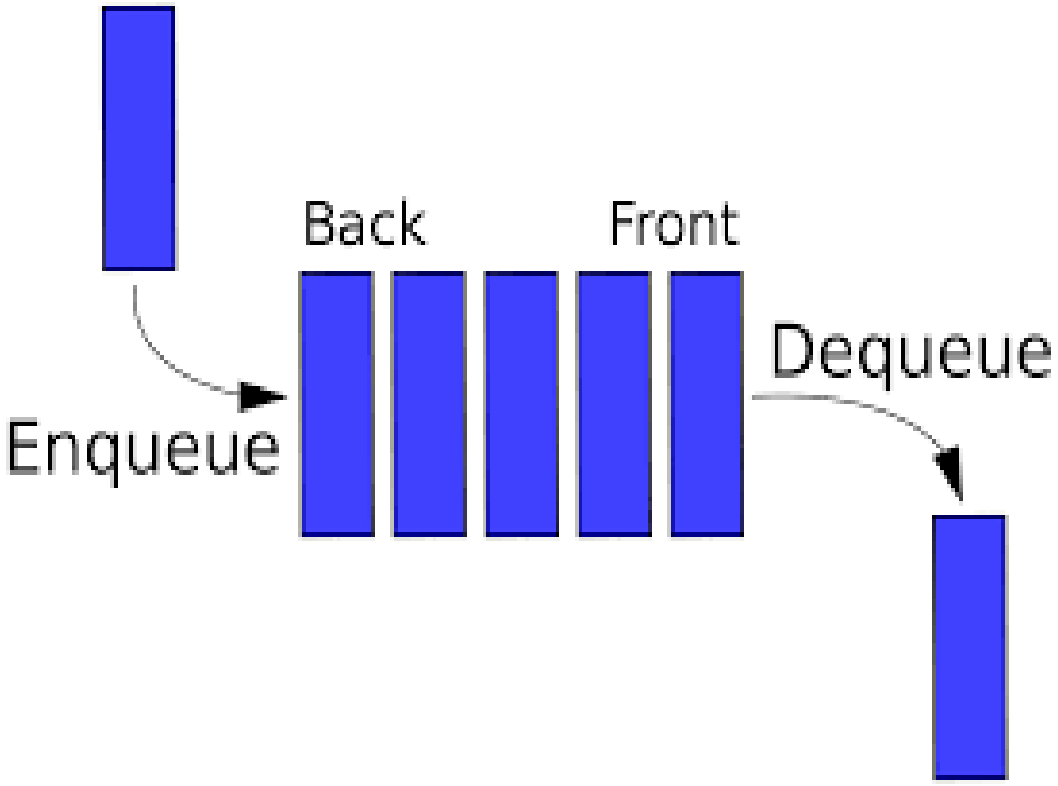

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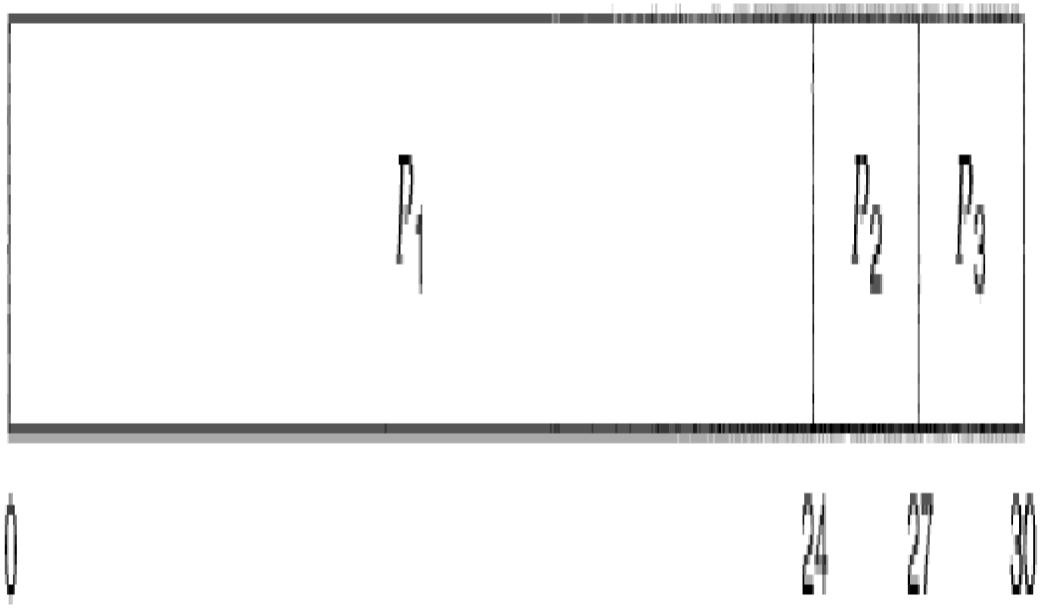

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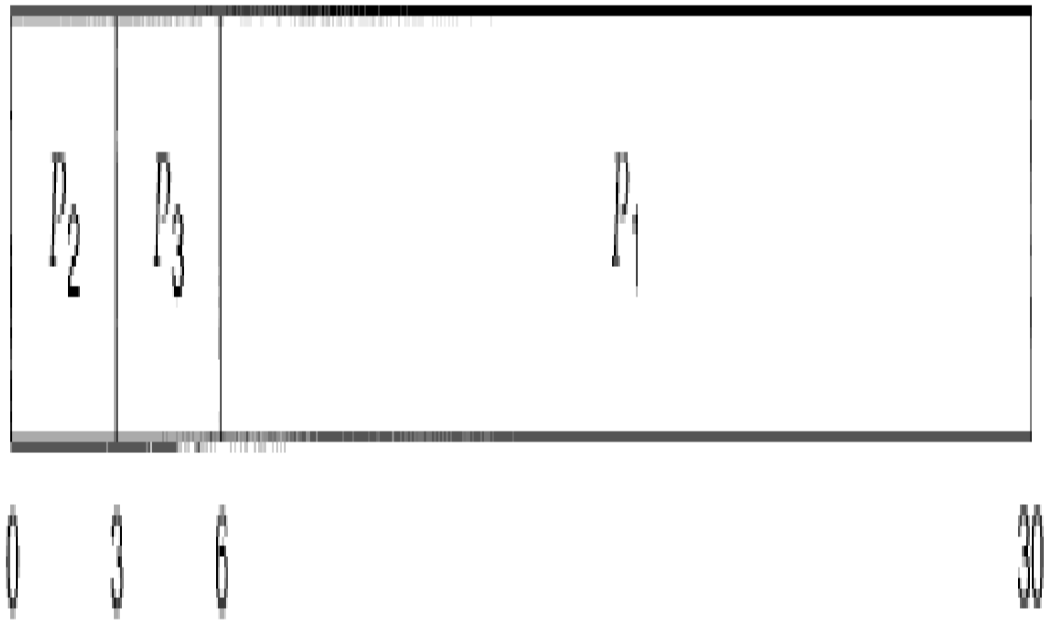

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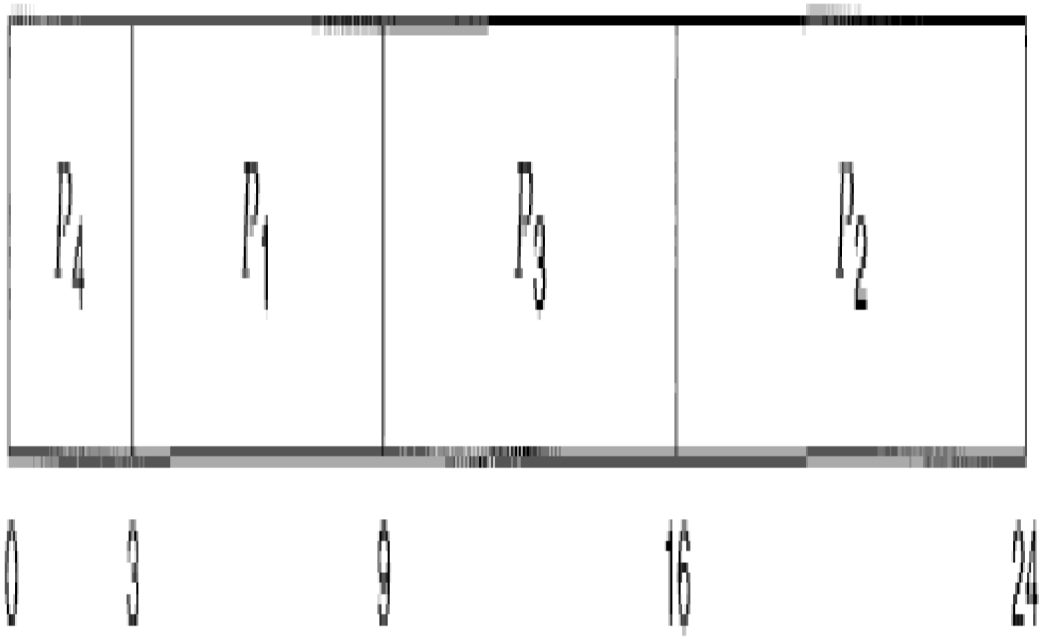
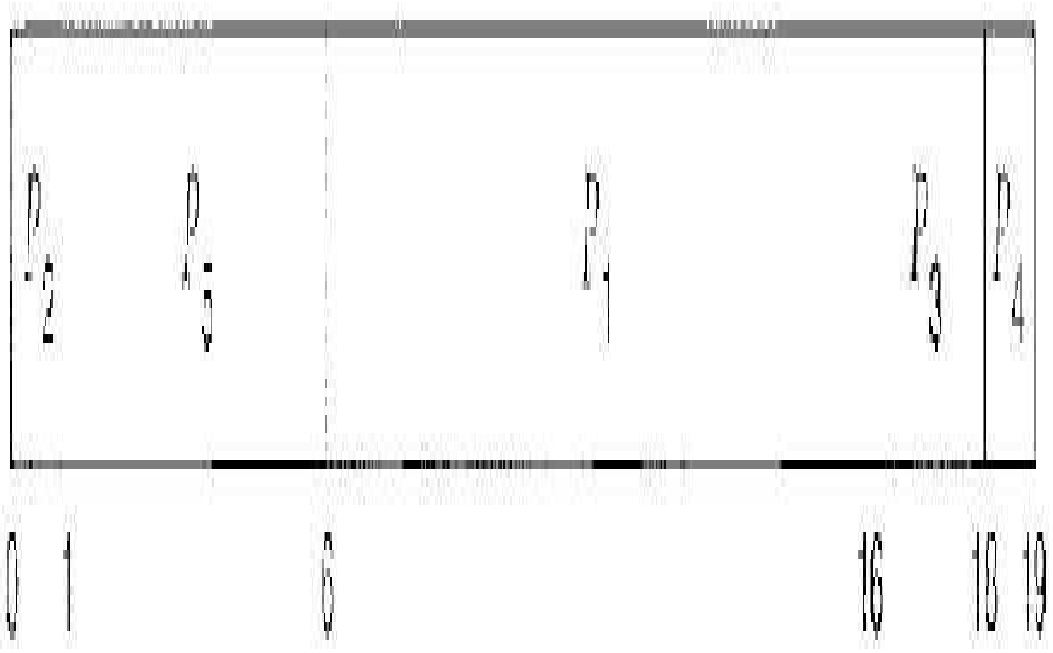


5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.

Process	Burst Time	Arrival Time
P1	16	0
P2	5	1
P3	6	2
P4	1	3
P5	2	4

5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.



5-Mark Explanation:
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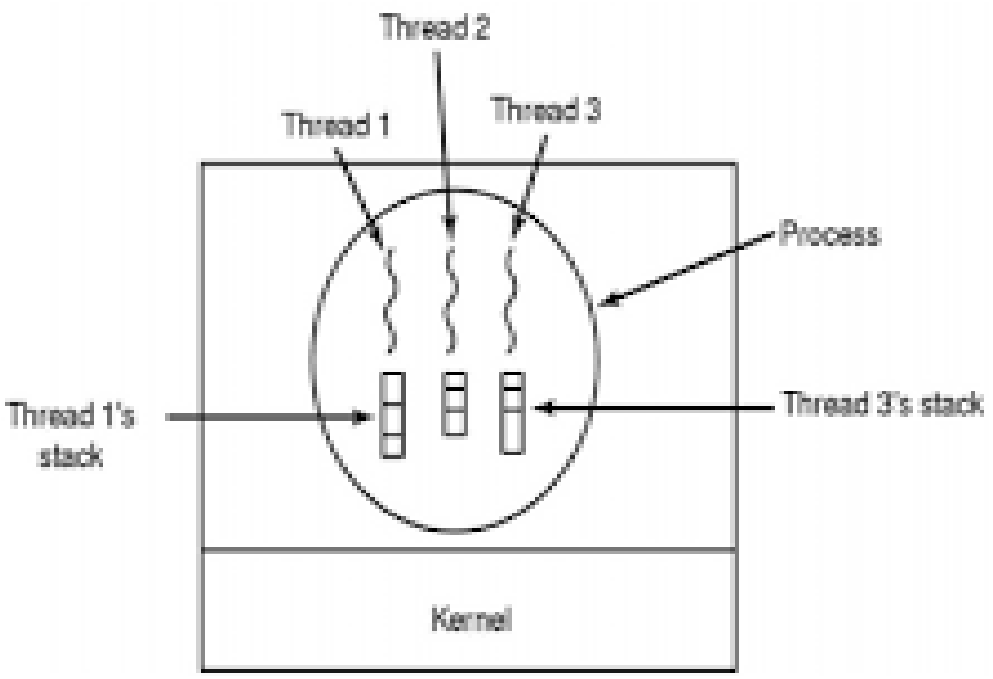
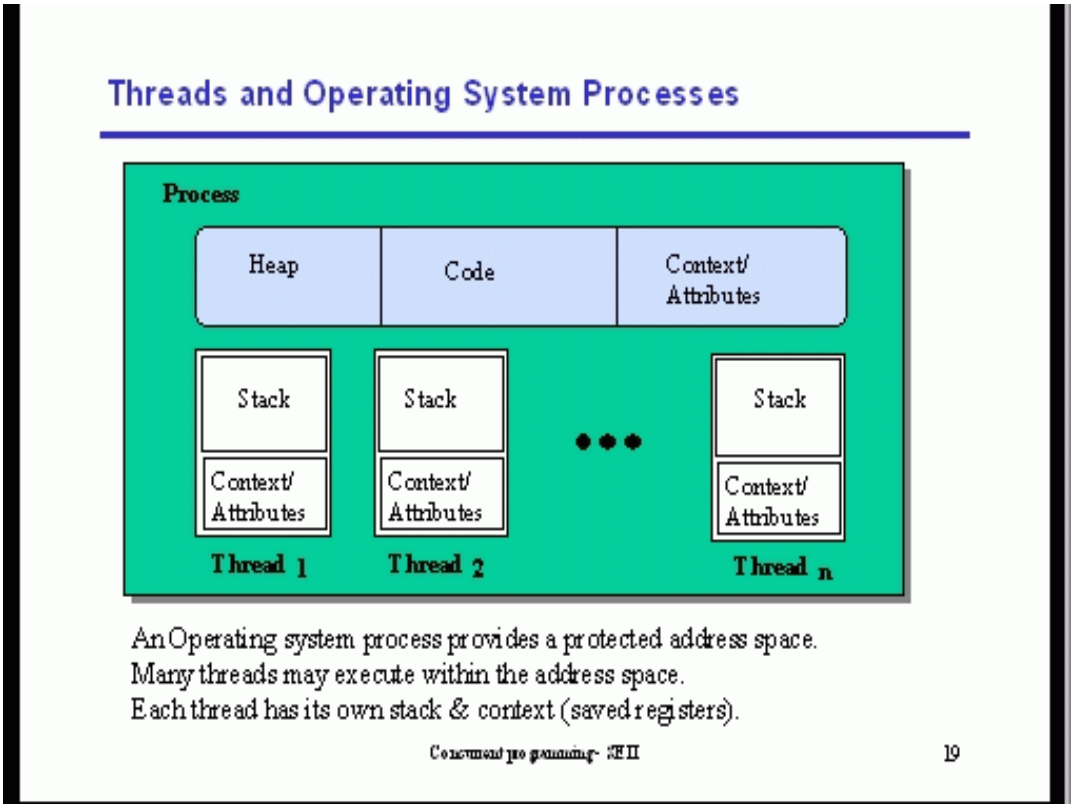
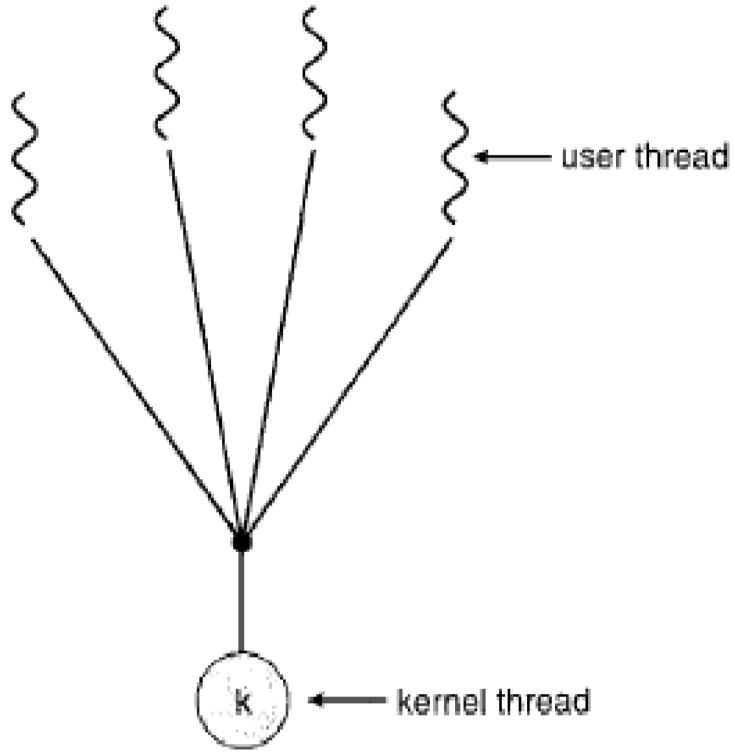


Each thread has its own stack.

5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.



5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.



5-Mark Explanation:
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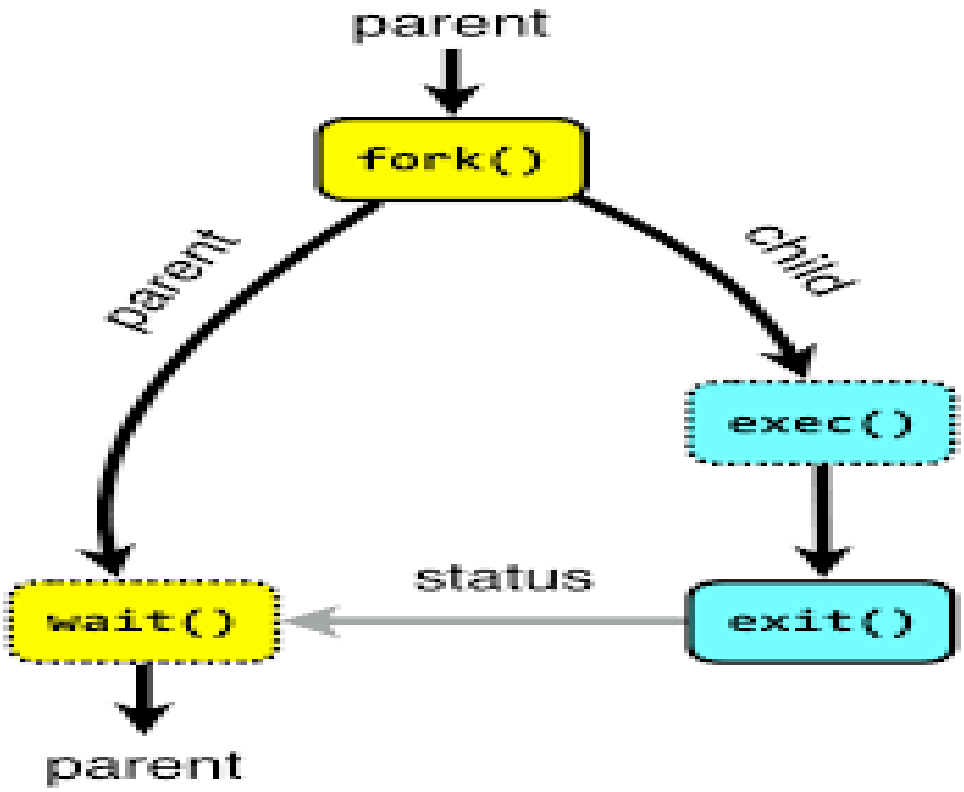

5-Mark Explanation:
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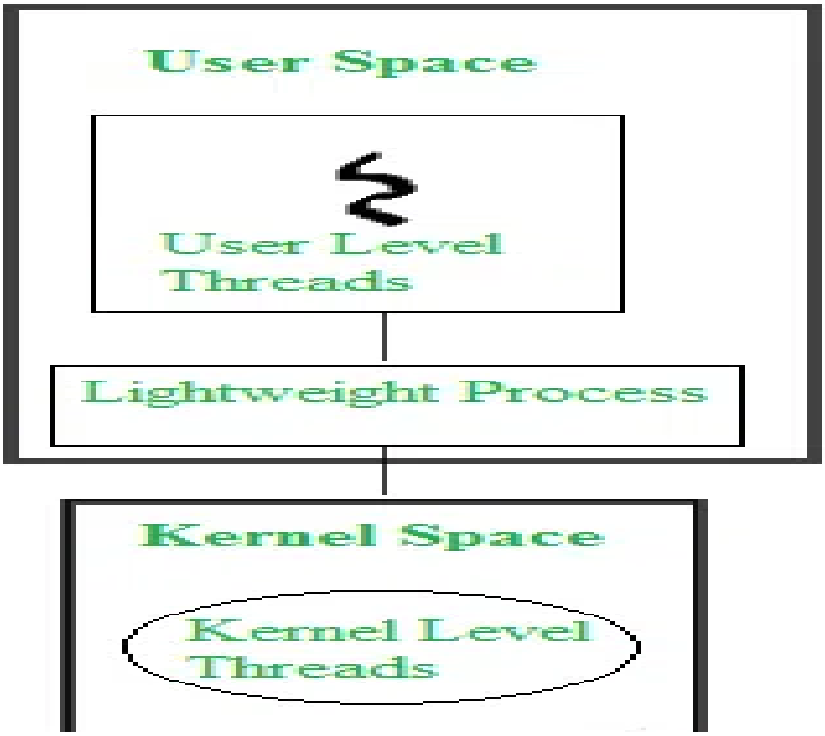

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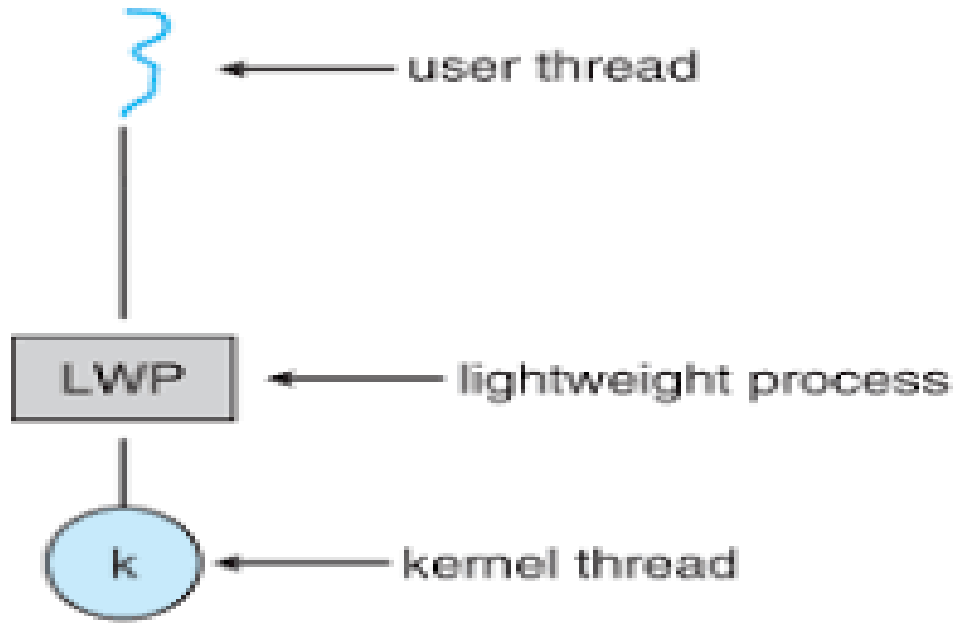
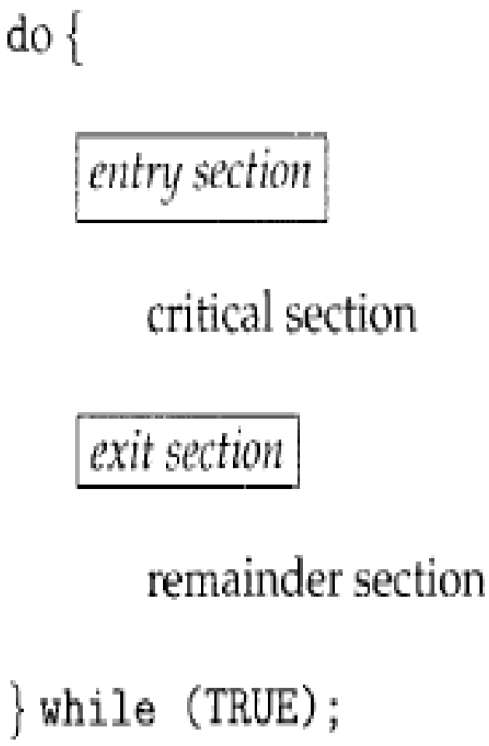
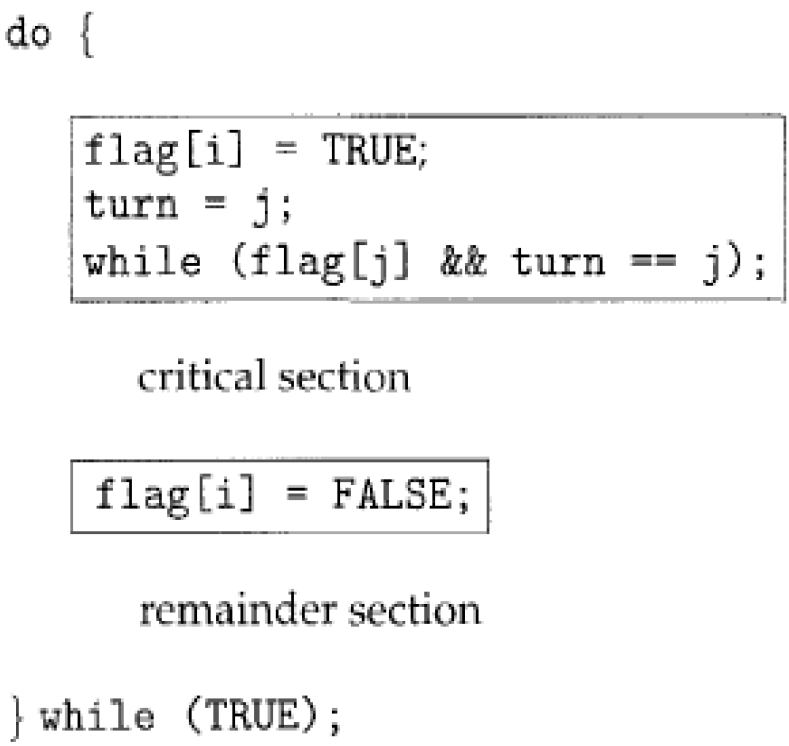


Figure 4.13 Lightweight process (LWP).

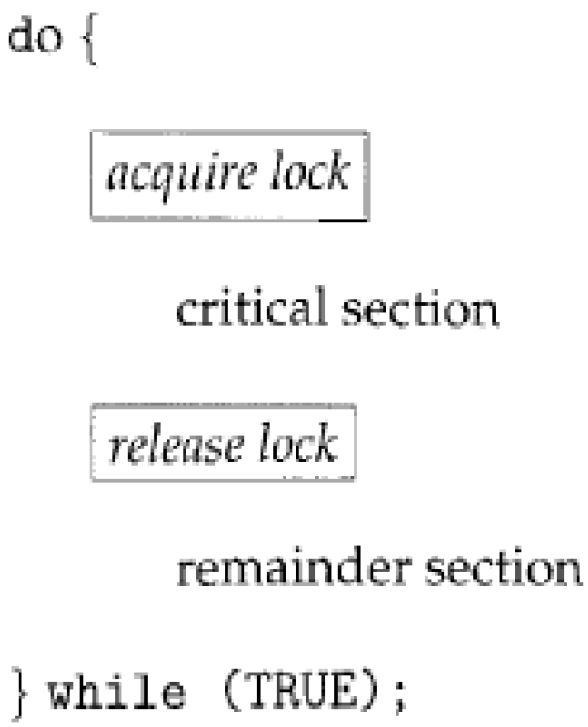
5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.



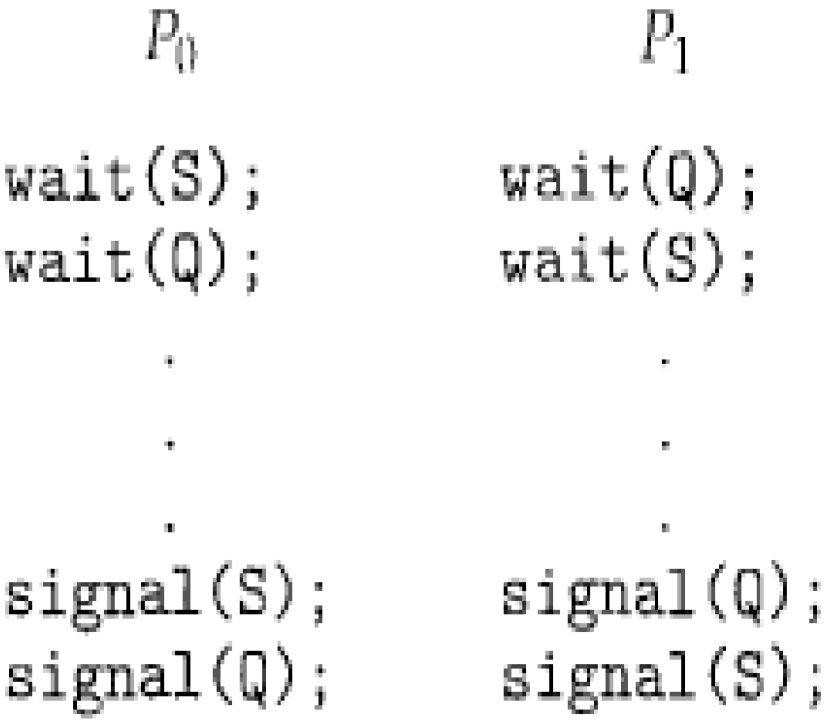
5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.



5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.



5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.



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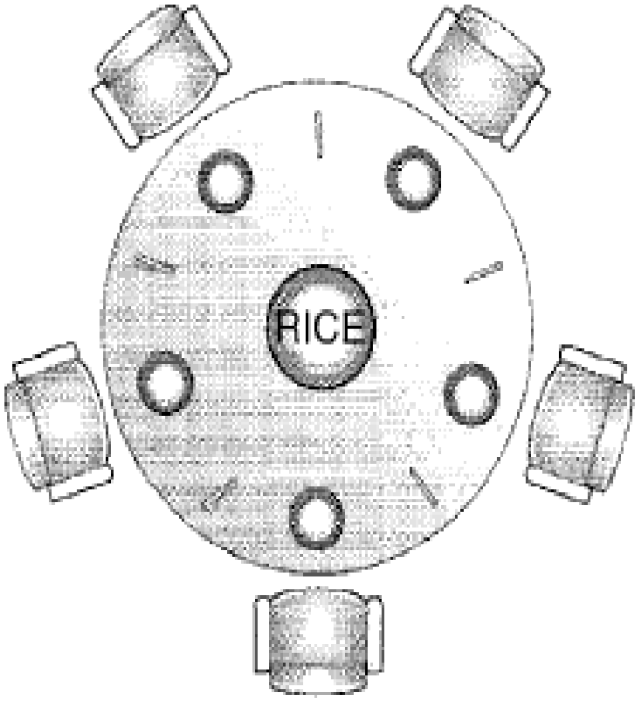

5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.

```
monitor dp
{
   enum {THINKING, HUNGRY, EATING}state[5];
   condition self[5];

   void pickup(int i) {
      state[i] = HUNGRY;
      test(i);
      if (state[i] != EATING)
         self[i].wait();
   }

   void putdown(int i) {
      state[i] = THINKING;
      test((i + 4) % 5);
      test((i + 1) % 5);
   }

   void test(int i) {
      if ((state[(i + 4) % 5] != EATING) &&
        (state[i] == HUNGRY) &&
        (state[(i + 1) % 5] != EATING)) {
          state[i] = EATING;
          self[i].signal();
      }
   }

   initialization_code() {
      for (int i = 0; i < 5; i++)
         state[i] = THINKING;
    }
}
```

5-Mark Explanation:
This diagram illustrates key operating system concepts from the course modules. It visually represents important architecture or mechanisms essential for understanding system operations.