

Operating System

Basics

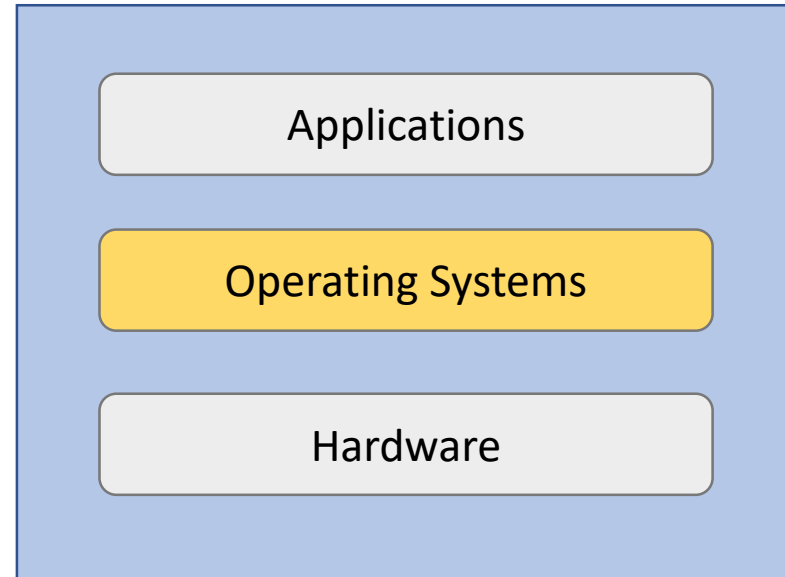
Course LTP structure

Course Type:	Foundation		L	T	P	Credits
			3	0	2	4

Course Evaluation Scheme

Components of Course Evaluation	Percentage Distribution
Lab Continuous Evaluation:	30%
Certification	10%
Mid Semester Examination:	20%
End Semester Examination:	40%
Total:	100%

Layers in a Computer System



Need of OS

- **Hardware Abstraction**

Turns hardware into something that applications can use.

- **Resource Management**

Manages system's resources

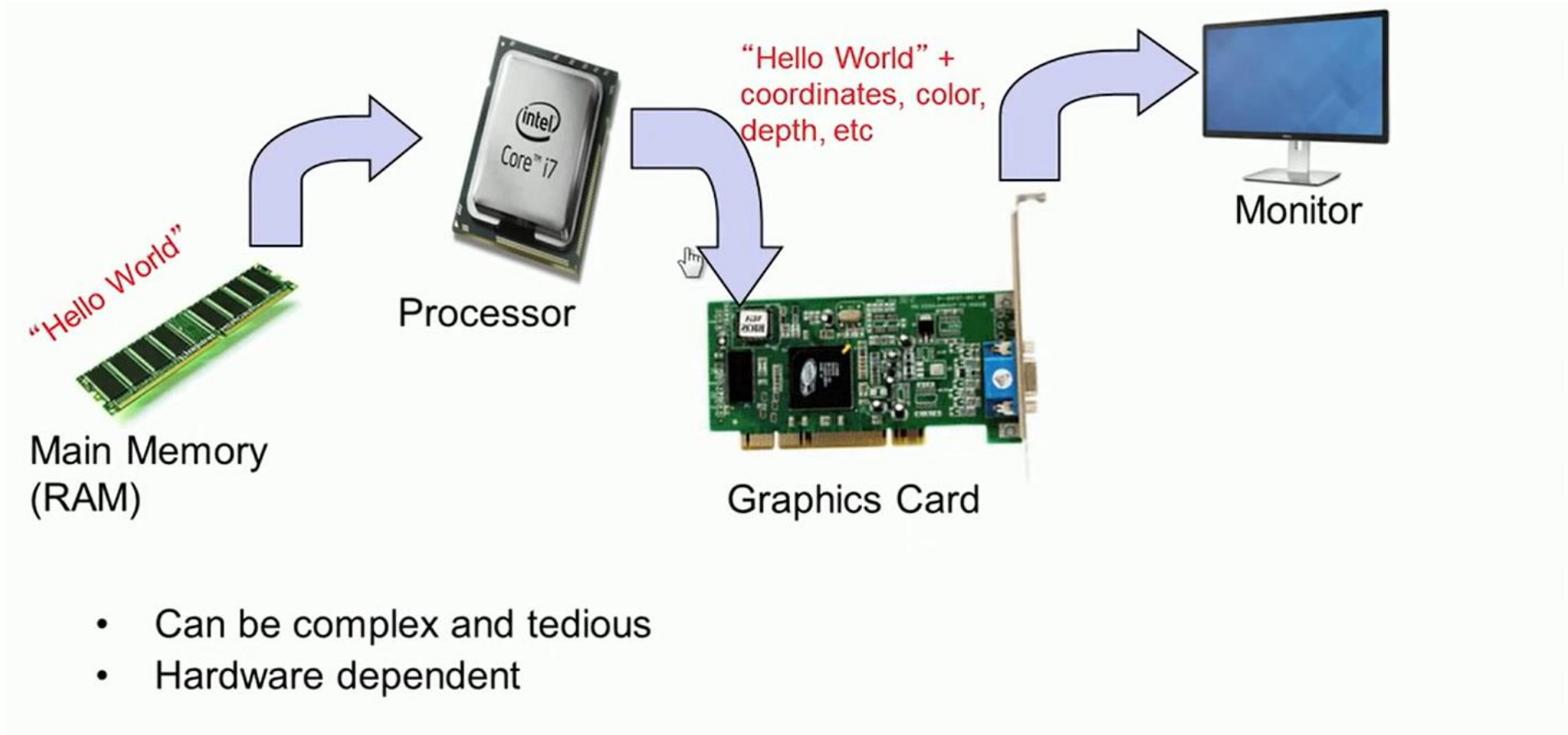
Need of OS

Consider the output of the following program.

```
#include <stdio.h>

int main(){
  char str[] = "Hello World\n";
  printf("%s", str);
}
```

Need of OS



Sharing of Hardware

Apps



```
#include <stdio.h>\n\nint main(){\n  char str[] = "hello world\n";\n  printf("%s", str);\n}
```

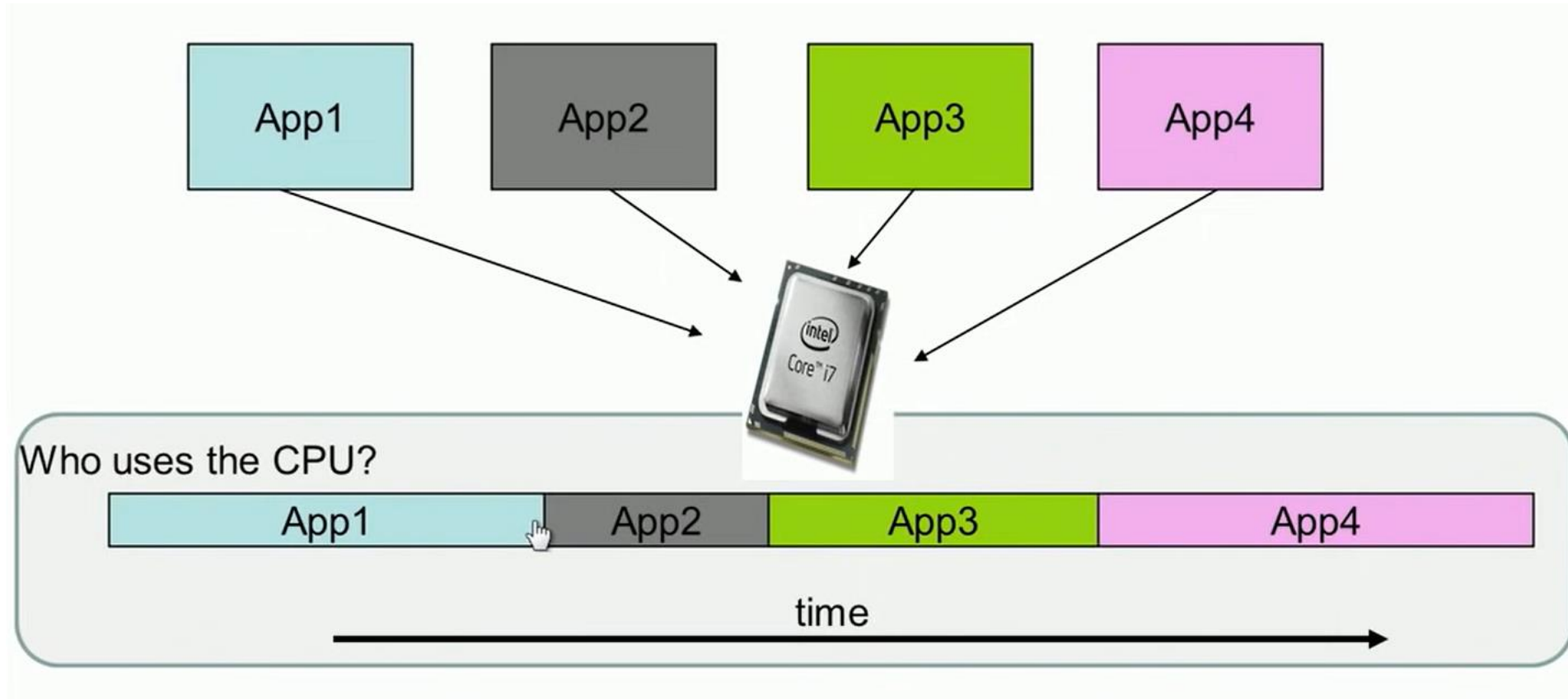


Operating Systems

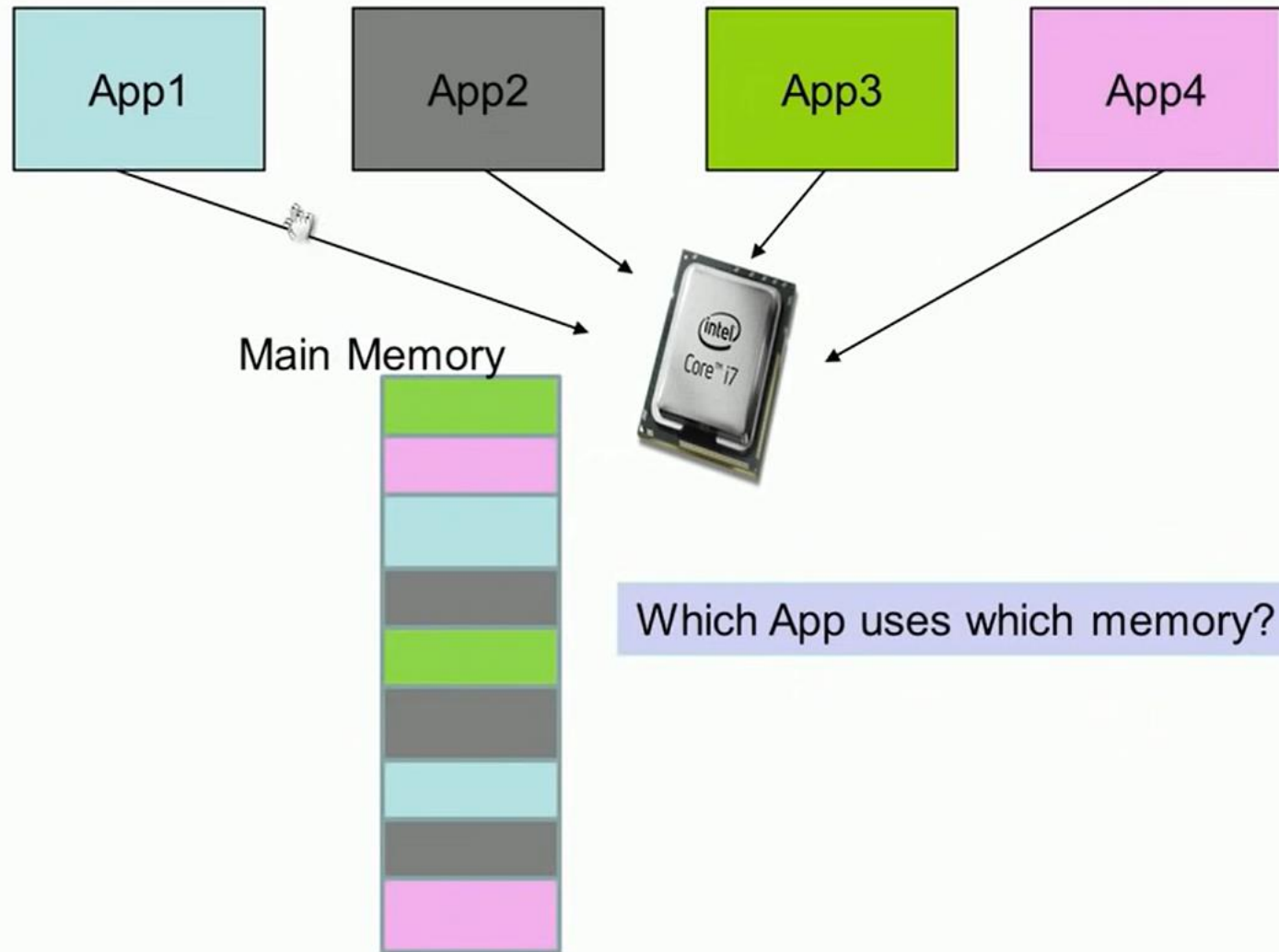


Allows sharing of hardware!!

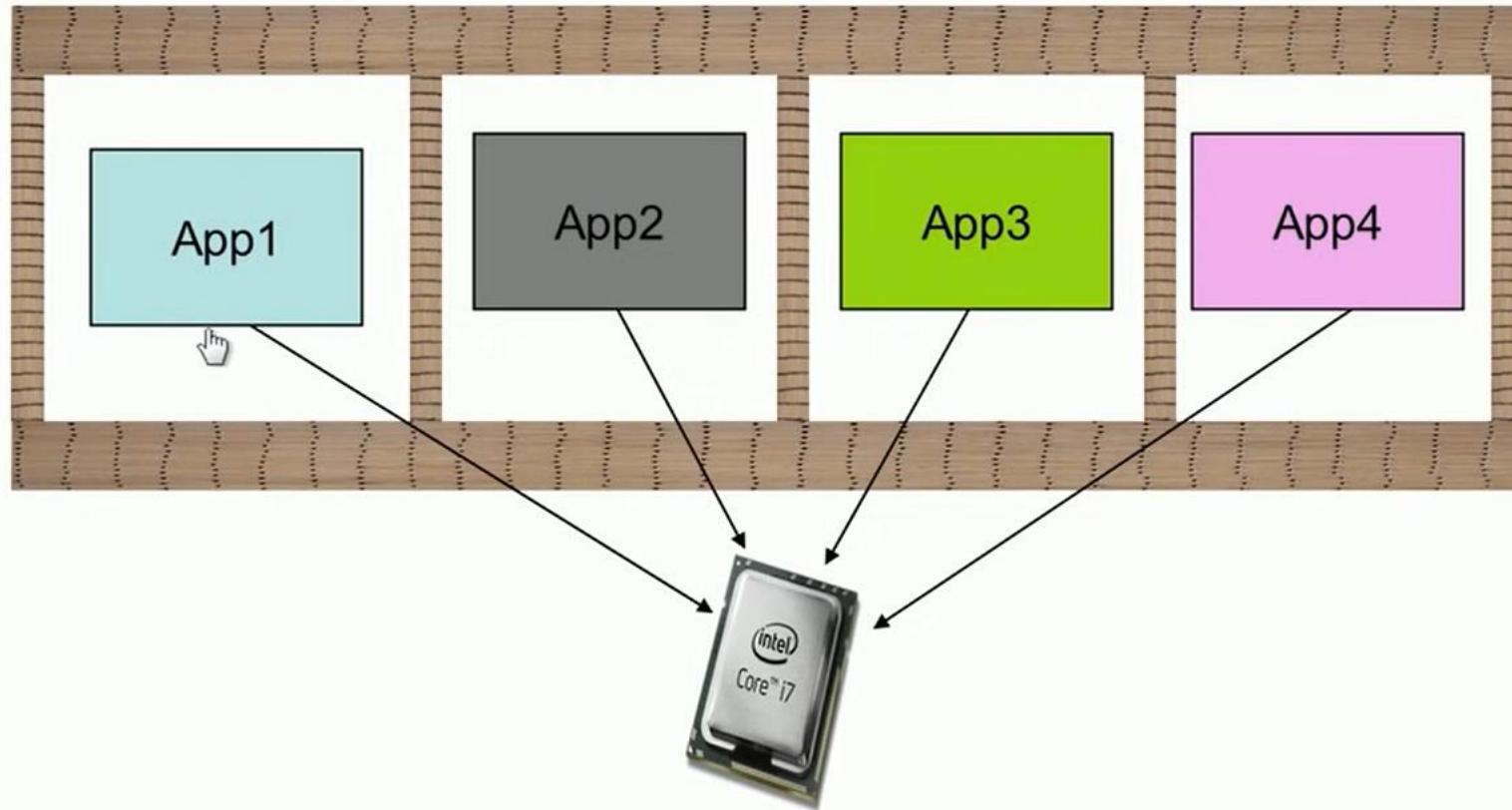
Sharing of CPU



Sharing of Memory



Sharing in Isolation



Identify the correct OS !



Identify the correct OS



What is the difference between **linux operating system**, **linux kernel** and **ubuntu**?

Course Learning Outcomes

- **CO1:** To explain the structure and the services provided by the Operating System.
- **CO2:** To define, restate, discuss, and explain the policies for scheduling, deadlocks, memory management, synchronization, system calls, and file systems.
- **CO3:** To examine distributed Operating System, cloud computing, and Virtualization.

Course Resources

TEXTBOOKS/LEARNING RESOURCES:

- Silberschatz, A., Galvin, P.B. and Gagne, G., Operating System Concepts (10th ed.), John Wiley, 2018. ISBN: 978-1-119-32091-3
- Stallings, Willam, Operating Systems Internals and Design Principles (9th ed.), Prentice Hall, 2021. ISBN: 978-0134670959.

REFERENCE BOOKS/LEARNING RESOURCES

- Andrew S Tanenbaum and Herbert Bos, Modern Operating Systems, Pearson, 2021. ISBN: 9789332575776.

Course Resources - MOOCS

- Introduction to operating systems

<https://classroom.udacity.com/courses/ud923>

- Introduction to Operating Systems Specialization

<https://www.coursera.org/specializations/codio-introduction-operating-systems>

- Intro to Operating Systems 1: Virtualization

<https://www.coursera.org/learn/codio-intro-to-operating-systems-1-virtualization>

Thank You