

Introduction

1/2565

กิจกรรม #1

- ในความคิดเห็นของนักศึกษา ระบบปฏิบัติการมี
บทบาทหน้าที่หลักอะไรบ้าง

Roles of the Operating System

גראם

- Referee
 - Resource allocation among users, app
 - Isolation of different users, app from each other
 - Communication between users, app

ສະກອນ ທົມນາກ ພັນຍາກ App ຖື່ນີ້ດີເກີດ ທີ່ສະກອນຫຼັບ

05 ចំណាំងឯកត្រាទៅទេ
គម្រោន ឱ្យអ្នក ការណ៍ ការងារ ត្រូវបាន — ការងារត្រូវបាន

សំណើលីកខ្លួន ការណែនាំតិចពីរបាយ — ការអ៊ីនុញ្ញ

ສະກອນ ທົມນາກ ພັນຍາກ App ຖື່ນີ້ດີເກີດ ທີ່ສະກອນຫຼັງນີ້

អ៊ីកសវិនាម សាស្តា

- Illusionist (illusionist)

- each app appears to have the entire machine to itself 
 - Infinite number of process, (near) infinite amount of memory, reliable storage, reliable network transport
[សំគាល់ RAM] ជាន់ខ្លួន និង OS រាយការណ៍ App (មិនត្រូវគិតឡើង)

Os กั้นแมว

Glue ^{m2}

- ## - library User Interface

กิจกรรม #2

- ระบบปฏิบัติการคืออะไร?

What is an Operating System?

សាក្រាវិធីសម្រាប់ user & app ងារ

- a set of software that manage compu's resource for use and their app

បន្ថែម

- May visible or invisible to the user និងអាមេរិកនៃប្រព័ន្ធដែលបានបង្ហាញដោយប្រើប្រាស់
- 2 major kind
 - General purpose Os សម្រាប់គ្រប់គ្រង
 - specific purpose Os សម្រាប់គ្រប់គ្រងទូទៅ

กิจกรรม #3

- หางานนักศึกษาต้องประเมินระบบปฏิบัติการหนึ่ง นักศึกษาจะประเมินด้านใดบ้าง และแต่ละด้านจะวัดอย่างไร

Operating System Evaluation

Os សមតាត្រូវការងារបែងចែក functional

- Reliability and Availability

↳ ផ្ទាល់ខ្សោយនឹង(1.) ដើម្បីជាង Os និង restart

- Security ផ្លូវការងារទាន់បាន ការអនការ និងស្ថិតិយ៍

Multi User និង User និងសាលា ក្នុងក្នុងផ្ទាល់ខ្សោយ

- Portability និងនាម Plat form និងស្ថិតិយ៍ → រាយការ ប្រាក់ប្រាក់ការងារ

• AVM , API , HAL → និងកិច្ច និងការងារនៃការងារ និងការងារនៃការងារ

- Performance ការងារ

សមតាត្រូវការងារ និងការងារ

• Overhead, efficiency

ជាដីនការងារនៃការងារ

• Fairness, response time, throughput

និងការងារនៃការងារនៃការងារ

• Performance predictability

និងការងារនៃការងារ ?

ជាដីនការងារ

ការងារនៃការងារ
និងការងារនៃការងារ

- Adoption

ការងារនៃការងារ

និង window និងការងារ

Os/z និងការងារ

* សំណង់

និងការងារ

Design Tradeoffs

- Must balance between the 5s

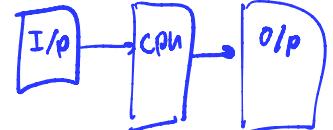
Ex

- Preserves legacy API → Portability ↑, reliable ↓, secure ↓
- Breaking an abstraction → Performance ↑, Portability ↓, Reliability ↓

ENIAC គឺអាមេរិកទៅក្នុង ក្រោយ!
 ↳ ការបន្ទាយទូទាត់ 10

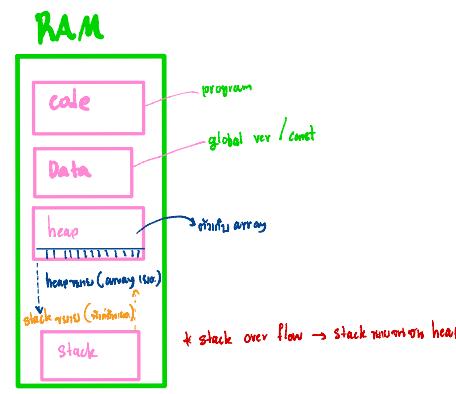
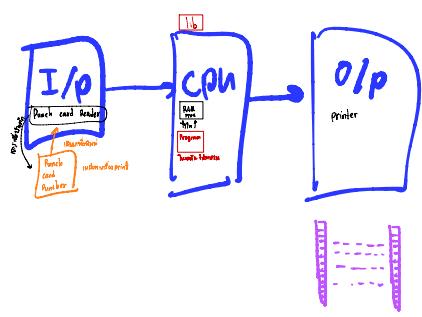
Computer Performance Over Time

	1981 OS เហ៊ី	1997	2014	Factor (2014/1981)
Uniprocessor speed (MIPS)	1	200	2500	2.5K
CPUs per computer	1	1	10+	10+
Processor MIPS/\$	\$100K	\$25	\$0.20	500K
DRAM Capacity (MiB)/\$	0.002	2	1K	500K
Disk Capacity (GiB)/\$	0.003	7	25K	10M
Home Internet	300 bps	256 Kbps	20 Mbps	100K
Machine room network	10 Mbps (shared)	100 Mbps (switched)	10 Gbps (switched)	1000
Ratio of users to computers	100:1	1:1	1:several	100+



Early Operating Systems: Computers Very Expensive

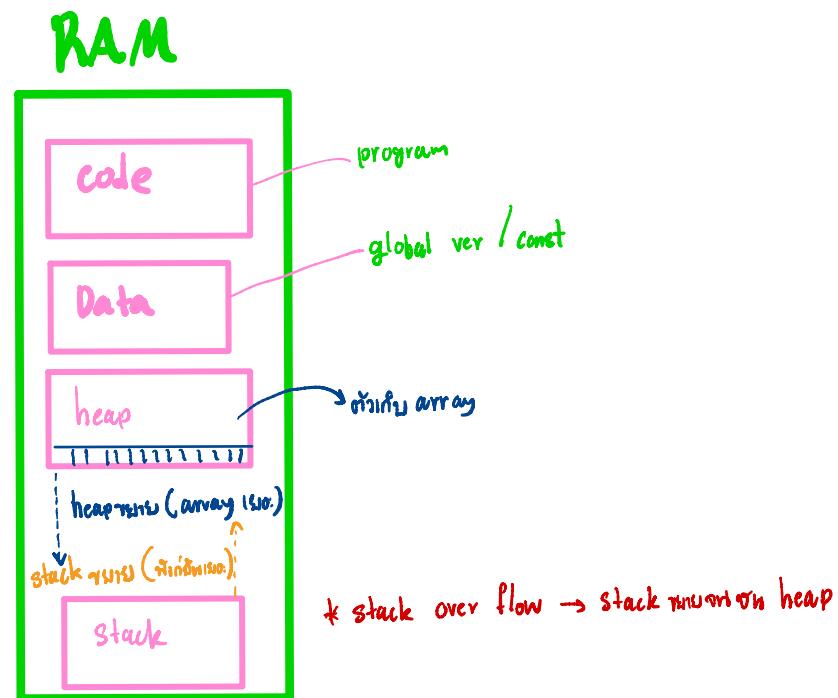
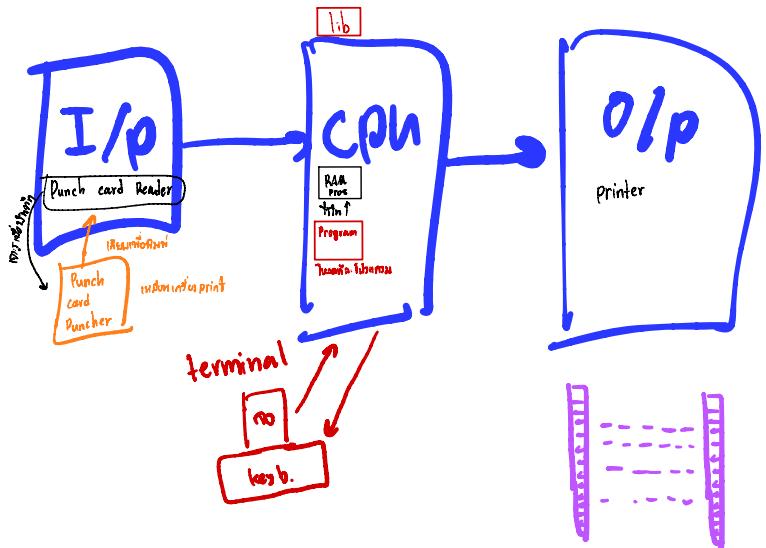
- One app at a time
 - Had complete control of hardware
 - OS was run time library
 - User would stand in line to use the computer
- Batch System
 - keep CPU busy by having a queue of jobs
 - Os would load next job while current one runs
 - User would submit jobs, and wait, and wait, and



Time-Sharing Operating Systems: Computers and People Expensive *1980 Informatics*

- ពេលវេលាអ្នកប្រើប្រាស់

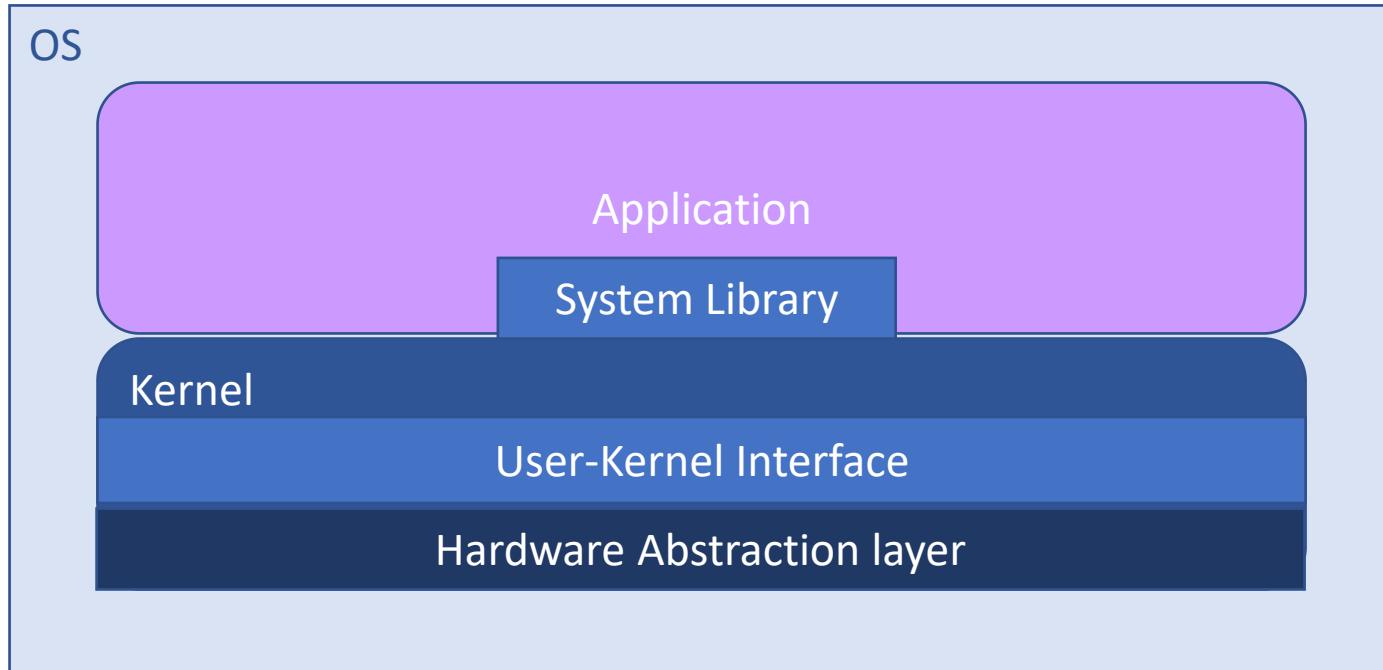
- ជាមួយប្រព័ន្ធដែលមានពេលវេលាលើកទូទៅ
- Interactive performance : try to complete everyone's task quick
- As Compu. become cheaper , more important to optimize for user time, not Compu. time



နိဂုံးပို့ Today's Operating Systems: Computers Cheap

- Smart Phone
- Embedded Sys မြန်မာစာတမ်းပါတီ
- laptops
- Tablets
- Virtual machines
- Data Center servers

User(s)



Hardware

ឧណាគម

Tomorrow's Operating Systems

- Giant scale data centers
- Increasing numbers of processors per Compu. សម្រាប់ប្រើប្រាស់ (core)
-  Compu.s / User ^(ឧបតាថ្មី) (ប្រើប្រាស់ជាពិនិត្យការងារ)
- very large scale storage ផែករាយអាជីវកម្ម (google drive cloud)