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BS-SE (5A)

ASSIGNMENT #1

OPERATING SYSTEM

Q.1

①

i) At Home :-

- Laptop, Mobile Phones
- Smart TV
- Calculator

ii) In Office

- Laptop
- Printer
- Projector

iii) During Commute

- Smart Phones
- Laptop
-



Q.2

- At Home :- (He might use distributed OS. some of them are)
- Windows (for easy to use interface)
  - Android/iOS (Smart Phones OS for interact with apps)
  - Linux (For high speed and security and office related work)

At Office :-

- Windows (Above reason)
- Android/iOS (Above reason)
- Linux (Most Corporate organization work with Linux for security purpose)

During Commute:

- Windows (Above reason)
- Android/iOS (Above reason)

At Home :

- Multicore Processor (allows to run multiple process at a time)
- Symmetric Processor (shared memory for all task assigned)
- Single core (he probably work simple tasks that can easily handle by single core processor)

At Office

- Symmetric processor (Above Reason)
- Multicore Processor (Above Reason)

During Commute

- Single core (Above reason)
- Asymmetric (No shared memory, master processor is controlling tasks)

Q.4

### At Home

- Personal computing environment used by a single user where he may perform what he likes (PC).
- Network Computing environment such as LAN may be used to exchange information around the world.

### At Office:

- Client server computing environment used by a system management to organize and divide the task b/w different servers & client.
- Time Sharing environment can be used so that multiple users are interacting with central CPU.
- Personal Computing environment can also be used for above reason.

### During Commute:

Personal computing environment for above reason.



Q.5

③

At home

General Ledger (RPA can help in organizing data)

At Office:

Fraud & Deletion (RPA can identify and flag the theft)

Q.6

1- Direction or navigation API

2- Maps API

Q.7

ARDUINO

RASberry Pi

→ It can perform single task at time.

→ It can perform multiple task at a time

→ Non efficient Processor

→ Efficient Processor.

## IOS

- Only has two rows of app icons.
- Swift, C, C++ is used as a programming language.
- Xcode is used for development.

## Android

- Allow use of widgets that acts up to date information of weather etc on screen.
- Java, Kotlin, XML, JS used as a programming language.
- Android Studio is used for development.

## Emulation

- Used to replicate original software and hardware.

→ Example blue stacks (Android apps on PC)

## Simulation

It is an environment which model after a real software.

Example calculator on many devices (PC, Mobile) mimics behavior of a calculator

Q.8

(4)

Applications are always dependent upon operating system as OS provide basic needs such as memory management, process management, input, output etc. Since applications require memory and CPU cycle the operating system is the only environment that connect the hardware and send it to kernel. and that is why applications are operating system dependent.



## Internet of Things:

### Architecture:

IOTs computer technology, control image display and communication technology to convert various facilities through the network. Anything in our home that uses electricity can be put on the home network. Receivers are used to detect signal from transmitter that gives user command.

### Computing Environment:

A simple personal computing environment is used in terms of operating system structure, this allows the device to be able to connect easily.

### Communication Needs:

The communication needs of IOTs that we need some sort of help that can give our commands to our device so most of the smartphone devices are radio powered we give commands through transmitter (telling light to be on or off) and the receiver on the device receives & perform that requirements.