ASSIGNMENT 3

Question 1:

Explore the DVM instructions and prepare a summary of the same atleast for 5 instructions in a detailed format

i) instruction name:

ii) syntax

iii)example

Answer:

Dalvik is the process virtual machine (VM) in Android operating system. It is the software that runs the applications on Android devices.  Programs are commonly written in java and compiled to bytecode. They are then converted from JVM -compatible .class files to Dalvik-compatible. .dex (Dalvik Executable) files before installation on a device.

Tha instruction format is as follows:

1>instruction name- Move

Syntax-move destination ,source

Example-move v0, v1 - Moves the content of v1 into v0. Both registers must be in the first

256 register range.

2> Name and syntax : move-result destination

Example: move-result vx Move the result value of the previous method invocation into vx.

3> Name and syntax :move-object destination ,source

Example: move-object vx,vy Moves the object reference from vy to vx.

4> Name and syntax: return-void

Example: return void -returns without return value

5> Name and syntax: array-length arrayobj , var

Example: array-length vx , vy Calculates the number of elements of the array referenced by vy and

puts the length value into vx.

6> Name and syntax: monitor-enter src

Example monitor-enter vx Obtains the monitor of the object referenced by vx.

Question 2:

Differentiate between mobile and cloud computing

Answer:

|  |  |
| --- | --- |
| **Mobile computing** | **Cloud Computing** |
| 1>Mobile computing  is human computer interaction by which a computer is expected to be transported during normal usage.  2>mobile computing involves taking a computer and all necessary files and software out into the field.  3>mobile computing uses computing capability without a pre-defined location and/or connection to a network .It has effective portability. | 1. mobile computing  involves a large number of computers connected through a real-time communication network such as the internet. 2. Cloud computing involves  the ability to run a program or application on many connected computers at the same time. 3. Cloud computing relies on sharing of resources to achieve coherence |

Question 3:

Give an example of an application simulating an environment of  context aware computing and justify.

Answer:

Context In general the term “Context” refers to the general situation of the person, device

or application.

Over the years this general definition has been broadened and clarified.

Context is any information that can be used to characterize the situation

of an entity. An entity is a person, place, or object that is considered

relevant to the interaction between a user and an application, including

the user and applications themselves.

**Context-aware computing :** “Context-aware computing” has been established as the practice of incorporating

contextual information into services to allow them to react and adapt to their

environment .

**ENVIRONMENT**

A fictitious smart home with three rooms, shown in Figure, will serve as the systems

environment.

|  |
| --- |
| Room1 Room2 |
| Room3 |

Simulated smart home

It is assumed that the environment is equipped with an appropriate sensory network to

allow to track the users location. For the purpose of the experiment this is simulated by

projecting the whole map in a single, physical room and using a Microsoft Kinect with

appropriate software to map the users relative coordinates within a

simple, two dimensional coordinate space. depicts this setup.

Only coordinates are provided to the context-awareness middleware systems to better

emulate the output of established indoor positioning solutions.

Two video streaming clients, “Stations”, are virtually placed within the environment.

Physically, both are running on the same machine but report different locations and

capabilities to the context network as shown in Table

|  |  |  |
| --- | --- | --- |
| Stations | Location | Computational Class |
| 1 | Room1 | 3:High Quality |
| 2 | Room 3 | 1:Low Quality |

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Demonstration stations