ASSIGNMENT 3

Q1> 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

**1.compare less or equal:**

mneumonic n.cmple

description Perform an integer comparison between two general purpose register. The result is stored in the first register.

example n.cmple SGP1,SGP3

**2.add**

mneumonic n.add

description

Adds the value of a second general purpose register to the first general purpose register. If the current value of the first register plus that of the second register is greater than MAXINT then a trap is raised. Otherwise the result is stored in the first register.

example n.add SGP1,SGP6

**3.char type to int type**

mneumonic n.c2i

description Converts the (unsigned) *char* type value in *greg2* to an (unsigned) *int* type value which is stored in *greg1*.   
 example n.c2i SGP2,SGP3

**4.unconditional jump**

mneumonic n.jump

description Perform an unconditional jump. The program instruction pointer is set to the value in the general purpose register.

example n.jump SGP1

**5.memory lock**

mneumonic n.lock

description Place a lock on a memory address. When a processor places a memory address onto the bus (DEB) it is ANDed with all lock registers. If a locked address is matched, the processor in question is placed into a spin lock and released when the Lock Event register is cleared (by another SCP).   
The lock register (LR) is identified in *greg1*; if its value is non-zero then the lock is missed. It is therefore advisable that each SCP only operate one lock register, indexed by its own identity, or only one SCP use locks within an application.

example n.const SGP3,0x12345678

**6.shift left**

mneumonic n.shl

description Perform a constant left-shift on the contents of a general purpose register. The constant shift is range limited between 0 and sizeof( word). The result is stored in the register.

example n.shl SGP2,SGP3

Q2> Differentiate between mobile and cloud computing

|  |  |
| --- | --- |
| Cloud computing | Mobile computing |
| Cloud computing is defined as the trend in which resources are provided to a local client on an on-demand basis, usually by means of the internet.  It allows us to store files and folders in a “cloud” area on the Internet, allowing access to all of files and folders wherever in the world – but we do need a physical device with Internet access to access it. | **Mobile computing** is [human–computer interaction](http://en.wikipedia.org/wiki/Human–computer_interaction) by which a [computer](http://en.wikipedia.org/wiki/Computer) is expected to be transported during normal usage. Mobile computing involves [mobile communication](http://en.wikipedia.org/wiki/Mobile_communication), mobile hardware, and mobile software.  It is taking a physical device with us. This could be a laptop or a mobile phone or some device which enables us to [telework](http://en.wikipedia.org/wiki/Telecommuting) – working wherever we go because of the small size of the device we are using. |
| One of the main benefits of cloud computing is reducing downtime and wasted expenditure for servers and other computer equipment. A given company is required to purchase the minimum amount of hardware necessary to handle the maximum points of stress on their system. | Mobile computing involves other external hardware to store data and to access data.  But data can also be accessed using cloud that is  “mobile cloud computing”. |
| Difficult to use and often the average user (even me, an advanced user) gets confused as to where the files are actually stored and/or where else they are stored. | Not very difficult to use. |
| Even though we don’t need to carry round a laptop with us, we still need some physical device to access your service which almost defeats the point anyway. | We need the physical device compulsory to get the data stored in the device. |
| Unlimited storage. | Limited storage if data is stored in the mobile device storage itself. |
| Access to lightning quick processing power. | Depends on the processing power of the device |
| The main method used for ensuring data security in the cloud is by encryption. Encryption seems like the perfect solution for ensuring data security; however, it is not without its drawbacks. Encryption takes considerably more computational power, and this is multiplied by several factors in the case of databases | No much/high level encryption is involved unless data is tranferred through internet. |
| By enabling online sharing of information and applications, the cloud offers users new ways of working together. | No special ways of working together. |
| Limitless flexibility: With access to millions of different databases, and the ability to combine them into customized services. | Data is retrieved as it is if stored on the local mobile device. |
| Better reliability: users no longer need to worry about their hardware failure, or hardware being stolen. | Life's short with no support  Finally, the churn of new devices means that the support lifecycle of smartphones and tablets will be shorter than businesses are used to with desktop and laptop systems.  If the hardware is lost then the data stored in the device is also lost. |
| Legal issues: There are several regulatory requirements, privacy laws and data security laws that cloud systems need to adhere to. One of the major problems with adhering to the laws is that laws vary from country to country, and users have no control over where their data is physically located. | No such severe legal issues |

Q3> Give an example of an application simulating an environment of  context aware computing and justify.

SMART SETTING:

Smart Settings is a tool to automate and optimize device settings, for both context-awareness and power saver.

For example, when the device connect to meeting room’s Wifi, the “Meeting” profile will be automatically activated, or when you leave your company’s Wifi, it turns to “Outdoor” profile.

**How Smart Setting works**  
A profile is a group of device settings, including:  
☆ Network (airplane mode, Wifi, mobile data, GPS, bluetooth),  
☆ Ringer (volume, ringtone, vibrate),   
☆ Notification (volume, ringtone, vibrate),   
☆ Alarm (volume, ringtone),   
☆ Display (brightness, wallpaper)   
☆ Other settings (sync, media, DTMF, voice call, system).

One can use pre-defined common profiles and custom profiles  
☆ Normal,   
☆ Silent,   
☆ Outdoor,   
☆ Battery Saver  
☆ Last known profile (special profile to restore last settings)  
☆ Custom profiles (as many as you wan