

Department of Automation & Computer-Aided Engineering**ACE 1050 Design Computing (Fall 2007)****Assignment #1 Suggested Solution**

1. Assembly language – Symbolic language for coding machine language instructions.
Machine language – Program to which computer can respond directly. Each instruction is a binary code that corresponds to a native instruction. High-level language – Uses a vocabulary and structure closer to the problem being solved. Detailed knowledge of the machine is not required. For program to be executed, it must be translated.

2. A Java Virtual Machine (JVM) is an interpreter that both translates and executes a source program.

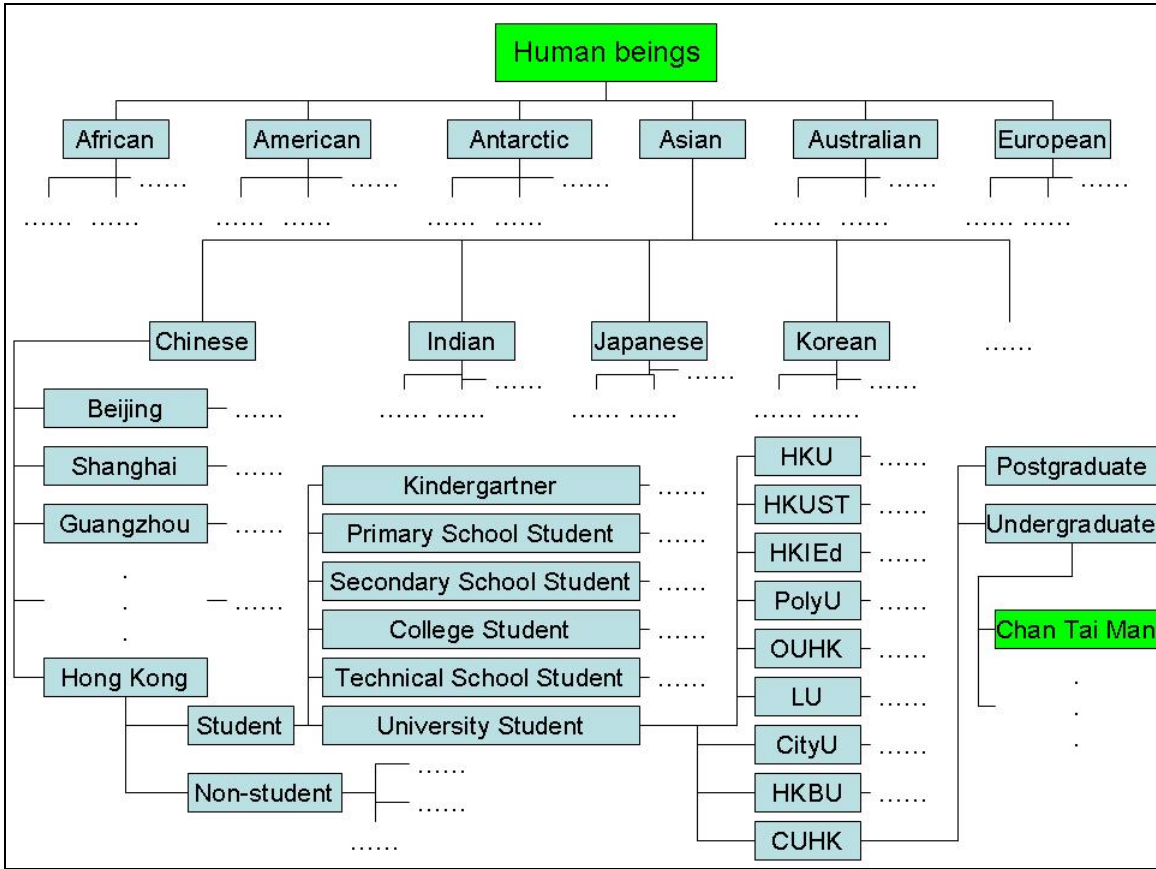
3. (a) For an ATM user, the relevant properties of an ATM are the interface, transaction functions provided and its reliability --- What functions does the ATM provide? Can I access information about own accounts (balance and available balances). What denominations does it provide cash in? What limits are there (total allowable cash withdrawal or number of transactions)? Does the ATM keep a reliable, accurate record of transactions especially if a transaction fails for some reason? Etc...

- (b) For an ATM repair man, the relevant properties of an ATM are the consistence and workable design of an ATM --- Is there an inbuilt diagnostic system for faultfinding, are parts readily available? Etc...

- (c) For a Bank Teller, the relevant properties of an ATM are the machine accuracy and the ATM user feelings --- Does ATM maintain accurate account balance information, respond to customer requests appropriately, provide reliable service (few breakdowns), and generate relatively few customer complaints? Is the ATM easy to use, with sensible instructions to help customers unfamiliar with ATM services? Etc...

- (d) For a Bank president, the relevant properties of an ATM are its services provided to customers, reliability, cost and profit --- Reliable service for customers. Accurately maintain customer records and dispense correct amount of money or not. Provide good security for cash stored in machine and customers records accessed via machine. Does it have an advantageous (to the bank) cost benefit factor (includes factors like machine purchase and service costs, cost of dealing with complaints and instruction of customers and staff in use of ATM)? Etc...

4. Following is a sample hierarchy structure, from a human being to an undergraduate student of CUHK under the concept of O-O technique:



5. Following is the example code:

```
public class KoPuiHangAsn1 {
    public static void main (String [] args) {
        System.out.println("I'm \"KO PUI HANG\", here is my information:");
        System.out.println("Student ID: 051415\tM\tYear:2");
        System.out.println("I like Java Programming.");
    }
}
```

