Week 1:
A few General OO and Java questions to refresh your brains

Get stuck in…

Write java code – as close as you can – for the following

Write the code for an Account class with three attributes

- accountNum - integer
- CustomerNum - integer
- acctBalance - double

Constructor which sets up all the variable

Two methods

- deposit – takes in a deposit amount – and adds to the balance
- withdraw – takes out a particular amount, and decrements the balance
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Encapsulate the variables

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Second class – Deposit Account, inherits from Account

Has a variable – interestAmt: double

Overriding method – withdraw (double takeAmount) - updates the amount, and adds on the interest amount too.

Write a control class (with a main method) to instantiate a variable

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INTERFACES

- All accounts need to be be easily verified by the Bank. To support this, the ValidatedAccount interface has been introduced to all account classes in the Account hierarchy, with behaviour to indicate that an account has a name and balance. It has two methods:
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  - getDetails() - which should System.out.print the account type (deposit account or account) - and the account balance and account name as a readable string.
  - valuableAccount() – which should System.out.println the account balance as a readable string.

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Centrally allocated Account number

- Implement functionality to keep track of the account number allocated – so that every account object (Account or Deposit account) is allocated the next available account number.

  How?

Concepts discussed

- Encapsulation
- Inheritance
- Method overloading / overriding
- Static variables
- Interfaces
  - Contain empty, predefined methods
  - Behaviour that a class “signs” up to

- Type of an object
- Casting

Why are interfaces useful?

- A way to guaranteeing behaviour across a set of unrelated classes
- A “contract” of behaviour that the class signs up to..
- If you know a class implements an interface, can invoke the i/f methods safely.
- Some interfaces are useful for “tagging” classes.. An interface with no methods in it is referred to as a **tagging** interface (marker interface pattern)
  - `.e.g Serializable interface`