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Class and Object expanded - Continued

**Section 1: Define / Answer**

Encapsulation-

Class- allows us to encapsulate.

Class helps to combine variables and methods together to perform specific task.

Attributes == variables

Actions == Methods

Constructor (what are building):

Object – We are building an object.

Multiple ways to interact with class.

|  |
| --- |
| Constructor with arguments/parameters |
|  |

Polymorphism-

It means from one to many.

Example of polymorphism is constructor chaining.

Constructor chaining are multiple ways to relating constructor each others.

**this**.keyword-

“this” is a keyword which can be used inside the Method or constructor of Class. It(this) works as a reference to the current Object whose Method or constructor is being invoked. The this keyword can be used to refer to any member of the current object from within an instance Method or a constructor.

**Programming Assignments:**

**USE OBJECT ORIENTATED PROGRAM DESIGN TO SOLVE PROBLEM**

Task 1- Create a class BMI. (Body Mass Index)

BMI = 703\*weight / height \* height //Weight in lbs, height in inches

The BMI class should also return the person’s name using the program.

Create a method for calculating BMI and round BMI to 1 decimal place

Create a method for returning the BMI possibilities

Severe Thinness < 16

Moderate Thinness 16.1 – 17

Mild Thinness 17.1 – 18.5

Normal 18.6 – 26

Overweight 26.1 – 30

Obese Class I 30.1 – 35

Obese Class II 35.1 – 40

Obese Class III > 40.1

Construct your class to contain multiple constructors.

Use the this. Keyword if you like.

Execute a few versions of the program

Passing different values into the program using different parameter and argument configurations.

**Output:**

The BMI for John is 26.5 which is the Over Weight Category.

or

The BMI for Susan is 17 which is in the Moderate Thiness Category















