**Tech Vision, Div. of Niwant Andh Mukta Vikasalaya** Date 20 March 20, 2013

1. A Small Intro of Computers
2. The way computer works – The language computer understands (only 0 and 1 – on and off)
3. The usage of computers in real world [various fields/industries – listing those fields/industries]
4. In order to get the work done from computer – we need to instruct computer (because Computer in itself is dumb).
5. A set of such instructions to achieve a specific task (get the specific task done from computer) is nothing but a program.
6. A Set of such programs is nothing but a software.
7. Types of software – a) Application Software b) System Software
8. Brief on point a) and b)
9. Programming languages come under the umbrella of Application Software.
10. Types of programming languages - a) Low level programming language b) High level c) Middle level
11. Brief on point a), b) and c)
12. What are the types of programming approaches/methodologies on broad level – a) Linear Programming b) Structured Programming c) Object-oriented programming
13. Elaborate on a), b) and c) a bit
14. What are the basic elements of any programming language –
15. a)Data b) Datatypes c) Variables d) Operators e) Programming Constructs…(this list can be amended)
16. Elaboration on the above elements
17. With their background of the above 4 elements, we can introduce them with small to-dos(assignments) which can help them think how to think logically or how to program. We can make them write small algorithms using plain English language. E.g. Addition of 2 numbers, Identifying the given number – whether its odd or even, Finding out the largest among given 3 numbers.
18. A basic differentiation between Structured Programming and Object oriented programming
19. Elaborating more on Object-oriented programming using the OOPS concepts like Abstraction, Encapsulation, Polymorphism and Inheritance. Lots of real world examples can be given here to help them understand Object Orientation. The ultimate aim should be to make them think in terms of objects [developing object oriented thought process].
20. A small acquaintance/overview of existing object-oriented languages.
21. Then slowly we can move to Ruby – one of the leading object-oriented programming language.
22. At the last – we can introduce them the concept of database via Front-End & Back-End terminologies.