CAP444
OBJECT ORIENTED PROGRAMMING USING C++

Lecture #0
The kick start session

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Course details

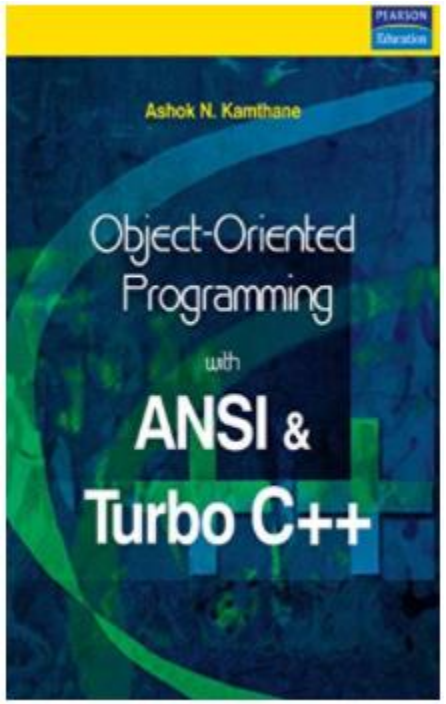
- LTP – 3 0 0 [Three lectures/week]
- **Text Book**

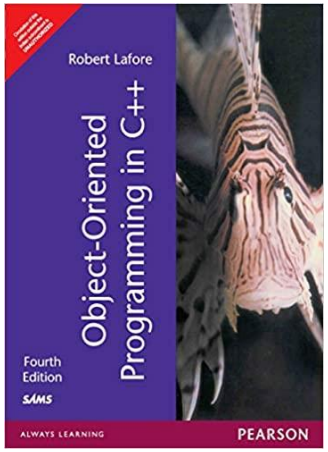
OBJECT ORIENTED PROGRAMMING WITH ANSI & TRUBO C++ by ASHOK N. KAMTHANE, PERASON EDUCATION

- **Reference Books:**

OBJECT ORIENTED PROGRAMMING IN C++

BY ROBERT LAFORE, GALGOTIA PUBLICATIONS





Course Assessment Model

Marks break up

• Attendance	5
• Continuous Assessment(2 out of 3)	25
• MTT	20
• ETT	50
• Total	100

The hitch…

The three BURNING questions in mind…

- Why are we learning C++ language?
- What would we do with it?
- What will be the course outcome?

Course Outcomes:

- ✓ understand the concepts of Object-oriented programming
- ✓ differentiate between the procedure-oriented and object-oriented programming languages
- ✓ apply the concept of file handling and exception handling mechanisms
- ✓ develop applications using the concepts of Object-oriented programming
- ✓ validate the code formulation by passing various test cases

Learnings for you…?

#1) Games development

#2) GUI Based Applications. Adobe Systems. ...

#3) Database Software. MYSQL Server.

#4) Operating Systems.

#5) Browsers. Mozilla Firefox. ...

#6) Banking Applications. ...

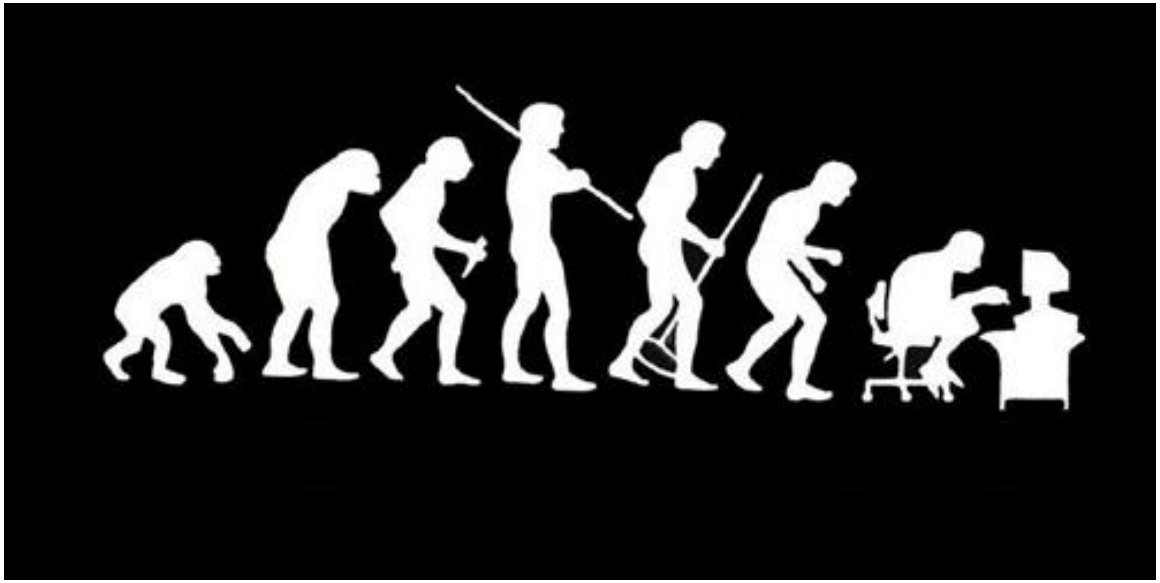
#7) Cloud System

Let us re-invent ourselves

To begin with basics…

Let us go to basics.

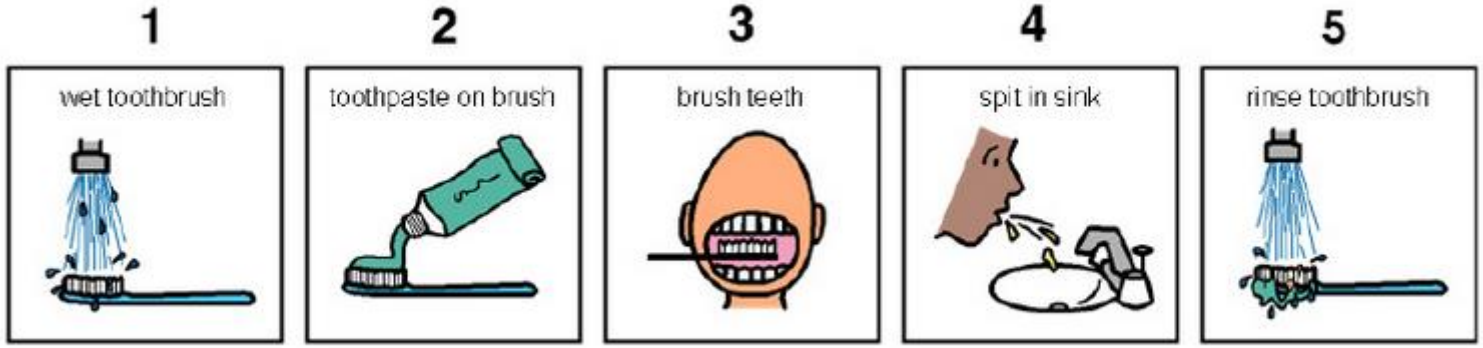
Let us begin from toddling to learn to walk



Get ready to be childish….

Daily routine

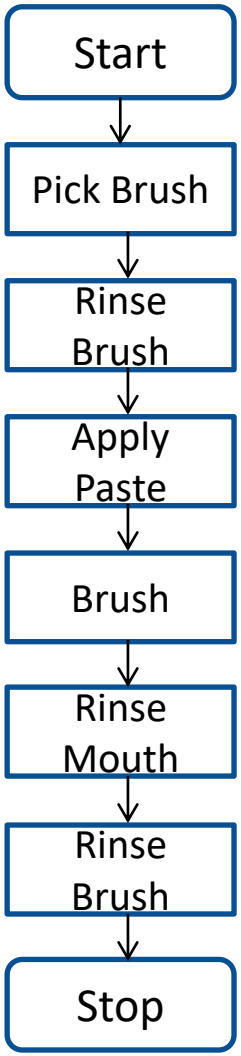
- Let us look around our daily routine…
- Let us see where all we do programming everyday
- Simple things we do to start the day



So there is ONE program you know which is there in you…

Daily routine

- There is a set procedure
- Each step is defined
- The occurrence is ordered
- Jump is NOT permitted
- A step cannot be skipped



Daily routine

- Let us explore more as the day goes by…

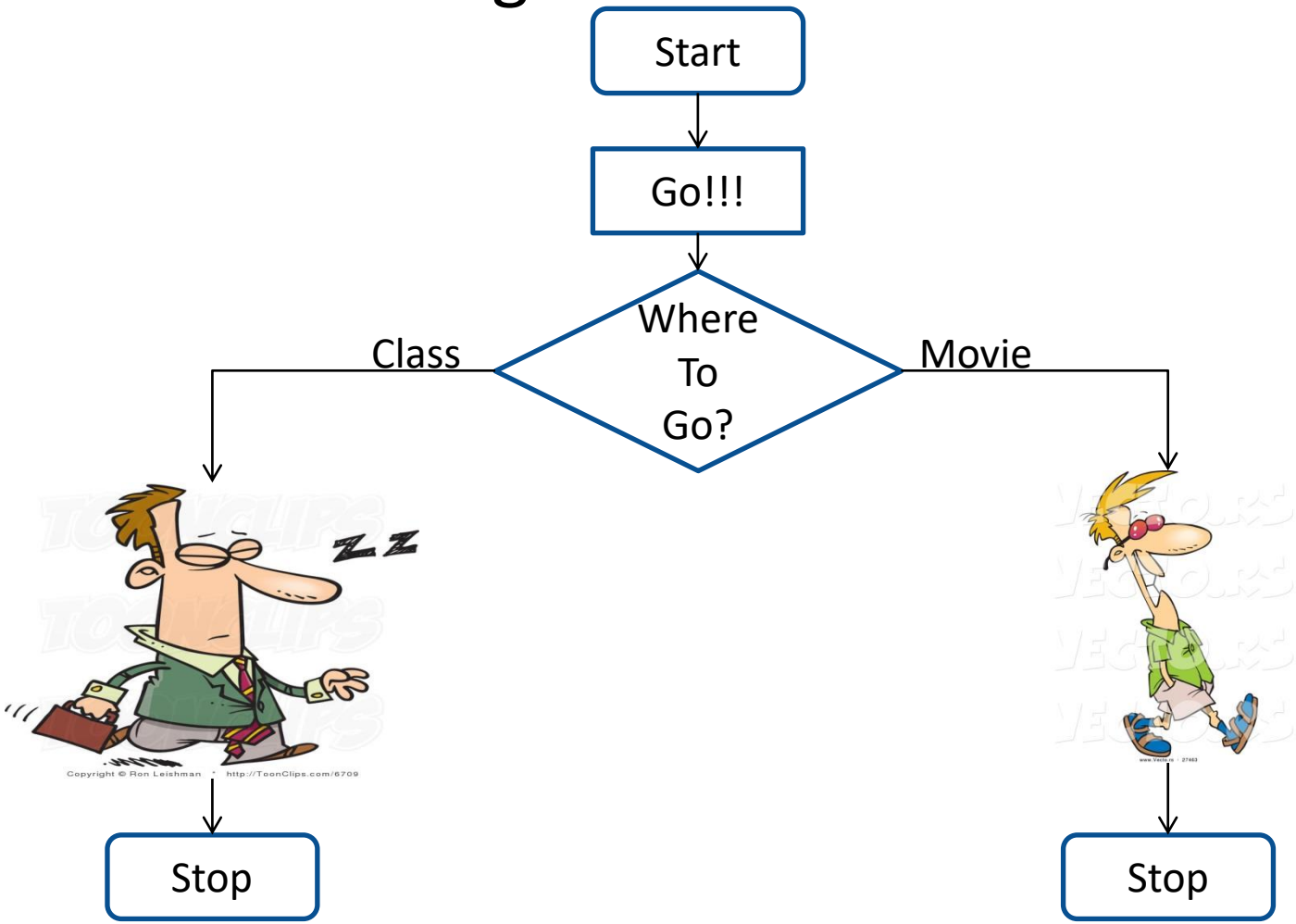
Going for a morning 0900 AM Class

Going for a movie at 0900 AM

It is all about WHICH program is loaded WHEN

Daily routine

- The flow changes



Daily routine

- Yet another example but more complex

Vision Sensor

Smell Sensor

Radiation Sensor

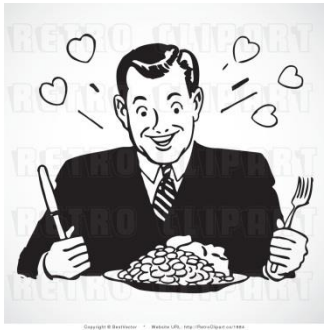
Touch Sensor

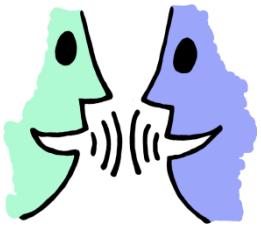
If all sensors = SIP

If even one is = WAIT!!!

So what does this mean?

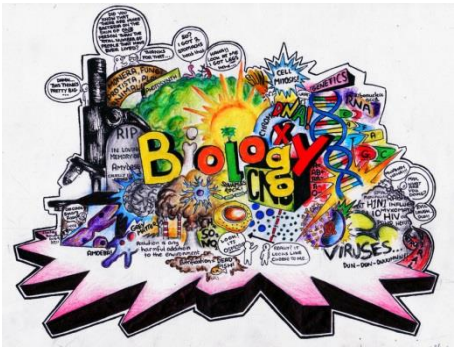
- Take ANY activity of the day…
- It will have a set procedure
- It has to be done in a designated way
- If not done the specified way will yield wrong results.
- Success in doing it depends on how closer one is to the prescribed method.
- This clearly shows that everything has a



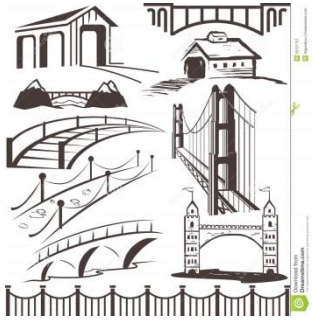


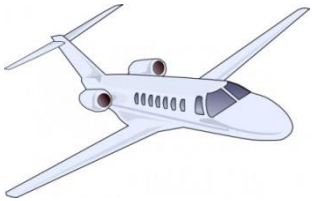
Logic

Logic, logic and logic



Logic





What next?

- If there is logic in anything and everything
- There has to be ways to represent logic
- There has to be modes to modify and re-represent logic.
- There should be methodology to implement and re-design logic.
- And for all this…

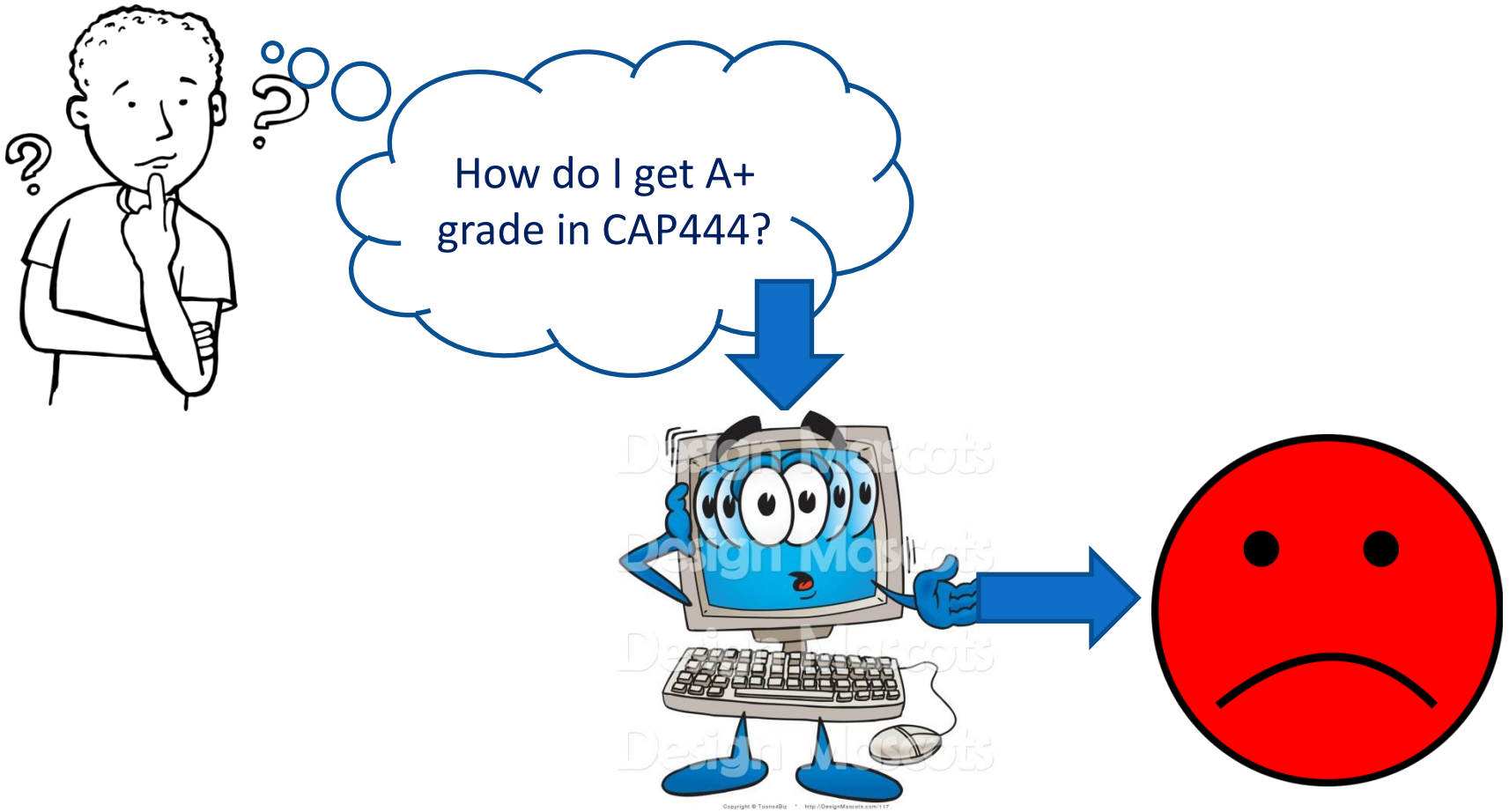
What next?

- There has to be logic machine to assimilate, understand, solve, store, retrieve and represent logic

- There has to be a LANGUAGE to communicate with the logic machine

Otherwise….

Diving deeper…



Diving deeper…

How do I get A+ grade in CAP444?

If marks are greater than or equal to 85. A program written in C++ language with **LOGIC**

The course contents

- Principles of OOP
- Operator Overloading and Type Conversions
- Run-time Polymorphism and Virtual Functions
- Working with Files and Streams
- Generic Programming with Templates
- Exception Handling

What do we need to know?

Unit 1

Tamil

தமிழ்

Punjabi

ਪੰਜਾਬੀ

Programming Language

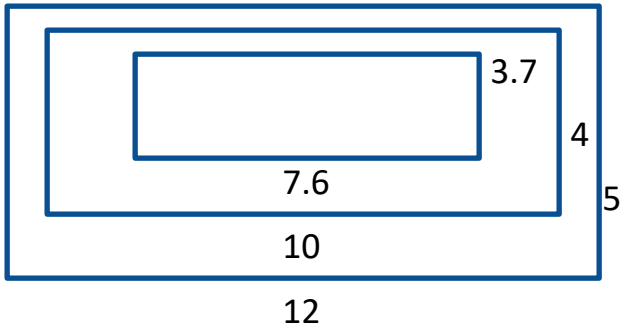
C++

program

Need of Language :: Introduction to programming Language

What do we need to know?

Unit 1



Principles of OOP's and C++ Basics

- How to do calculations

  Area = Length * Breadth

  Area = 12 * 5

  Area = 10 * 4

  Area = 7.6 * 3.7

Performing *Calculations* in C++ :: Variables and operators in C

What do we need to know?

Unit 1

Classes and Objects

Mobile

Symbian (Keypad Phone)

i-phone

Android phone

What do we need to know?

Unit 1

Constructors and Destructors

Inheritance and its types

father

mother

child

What do we need to know?

Unit 2

Operator Overloading and Type Conversions

One socket board → multiple work

Ice to water

What do we need to know?

Unit 3

Run-time Polymorphism and Virtual Functions

Preparing food according to hotel menu

Compile time)

During competition preparing food

(Run-time)

What do we need to know?

Unit 4

Working with Files and Streams

What do we need to know?

Unit 5

Generic Programming with Templates

interview

Resume Format

What do we need to know?

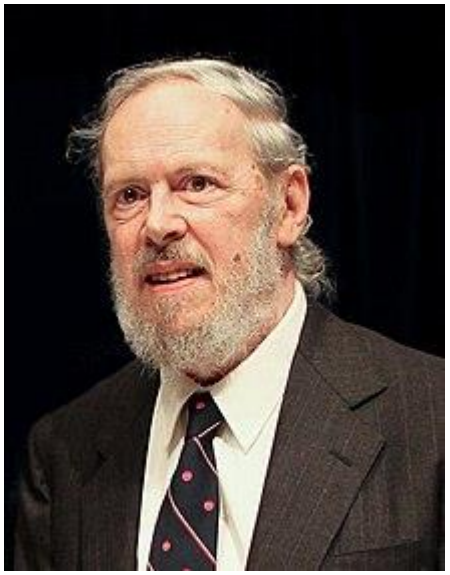
Unit 6

Exception Handling

Acknowledgements

- The Khan Academy
- EdX
- Coursera
- Cplusplus.com
- www.cppforschool.com
- Learncpp.com
- And Above all…

COMMON SENSE



Can you Recognize?

A. Dennis Ritchie
B. James Gosling
C. Bjarne Stroustrup
D. Ken Thompson

Select odd one

A. C language
B. C++ language
C. C# language
D. Java language

Next :Principles of OOP