



# **SNS COLLEGE OF ENGINEERING**



**Kurumbapalayam(Po), Coimbatore – 641 107**

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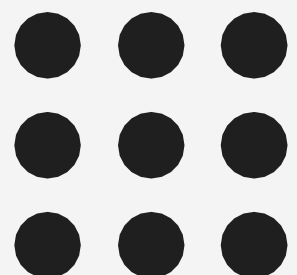
## **Department of Information Technology**

**Course Name – IT8075 Software Project Management**

**IV Year / VII Semester**

**Unit 2 – Project Lifecycle and Effort Estimation**

**Topic 9- COCOMO II**



## COCOMO II

COCOMO – COnstrucitve COst MOdel

- Developed by Dr. Barry W Boehm in 1970's
- Developed based on study of 63 projects
- Software Project Cost estimation model.

It predicts or estimates

- Effort required for project
- Total project cost
- Scheduled time for project

It estimates above parameters based on number of lines of code i.e size of project



# COCOMO II



Formula

$$(effort)=c(size)^K$$

Effort – Measured in PM (person months)

Units of 152 working hours

Size – measured in kdsi

Thousands of delivered source code instructions

c and k are constants

First step

Derive estimation of system size in kdsi.

c and k based on system type

```

composite IOdhol
{
  graph
  (stream<rstring fileName> DirectoryScan_1_out0) as DirectoryScan_1 =
  DirectoryScan() {
    param
    directory : "/home/nicholls/stocks" ;
  }
  (stream<rstring ticker, rstring time, rstring transactionType,
  decimal32 price> FileSource_1_out0) as FileSource_1 =
  FileSource(DirectoryScan_1_out0) {
    logic
    onTuple DirectoryScan_1_out0 : {
      appLog(Log.info, fileName) ;
    }
    param
    format : csv ;
  }
  (stream<rstring ticker, rstring time, rstring transactionType,
  decimal32 price> Filter_1_out0) as Filter_1 = Filter(FileSource_1_out0) {
    param
    filter : ticker == "IBM" ;
  }
  (stream<rstring transactionType, decimal32 avgPrice> Aggregate_1_out0) as
  Aggregate_1 = Aggregate(Filter_1_out0 as inPort0Alias) {
    window
    inPort0Alias : sliding, count(5), count(1), partitioned ;
    param
    partitionBy : transactionType ;
    output
    Aggregate_1_out0 : avgPrice = Average(price) ;
  }
  () as FileSink_1 = FileSink(Filter_1_out0){
    param
    file : "ibm.transactions" ;
    flush : 10 ;
  }
  () as FileSink_2 = FileSink(Aggregate_1_out0){
    param
    file : "avg.IBM.prices" ;
    flush : 10 ;
  }
}

```

## COCOMO II

Boehm's system classification

Organic Mode – small team developed s/w, familiar in house environment, small system.

Ex – Information systems - Simple

Semi-detached Mode – Combination of organic and embedded mode - Intermediate

Embedded Mode – constrained and changes were costly

Ex – Real time systems - Advanced

System Type	C	K
Organic	2.4	1.05
Semi-detached	3.0	1.12
Embedded	3.6	1.20



## COCOMO II

### COCOMO II

New model with wide range process models

Estimates needed for different lifecycle stages

It support three different stages

Application composition

Early design

Post architecture



**THANK YOU**