B. Tech. IT 5th SEM SoS(E & T), GGU, Bilaspur C G

1

ELECTIVE-I SOFTWARE ENGINEERING(ITo5TPE11)
BY-MRS. AKANKSHA GUPTA

Unit-4 Content

- Coding- Top Down & Bottom UP approach
- Structured Programming
- Information Hiding
- Programming Style
- Internal Documentation
- Verification
- Metrics
- Monitoring & Control(Covered in Unit-2)

Coding

- Translate the design into given programming language.
- Affects both testing & maintenance phase.
- Programming Practice-
- Simple
- Easy to test
- Easy to understand & modify
- Simplicity & clarity

Top Down (TD)

- TD- Implementation starts from top of the hierarchy...
- STUBS have to be written..
- When building a prototype TD approach is used.....

Bottom Up(BU)

- Implementation starts from bottom of the hierarchy....
- DRIVER modules are needed...
- For many complex system like OS, Networking etc.....

Information Hiding(IH)

- Only access function can access the data structure...
- IH can reduce coupling....
- Effective tool for managing the complexity of developing software.....

Programming Style

- Name
- Control construct
- Gotos
- Information Hiding
- User Defined Types
- Nesting
- Module Size

Programming Style

- Module Interface
- Program layout
- Side Effects
- Robustness

Internal Documentation

- Comments===Prologue
- Prologue- Providing comments for modules
- Structure of Prologue-
 - Module Functionality
 - o Parameters & their purpose
 - Assumptions
 - Global Variables

Verification

- Verification in 2 Categories—Dynamic & Static.
- Methods-
 - Code Reading
 - Static Analysis
 - Symbolic Execution
 - Proving Correctness
 - Code Inspection/Reviews
 - Unit Testing

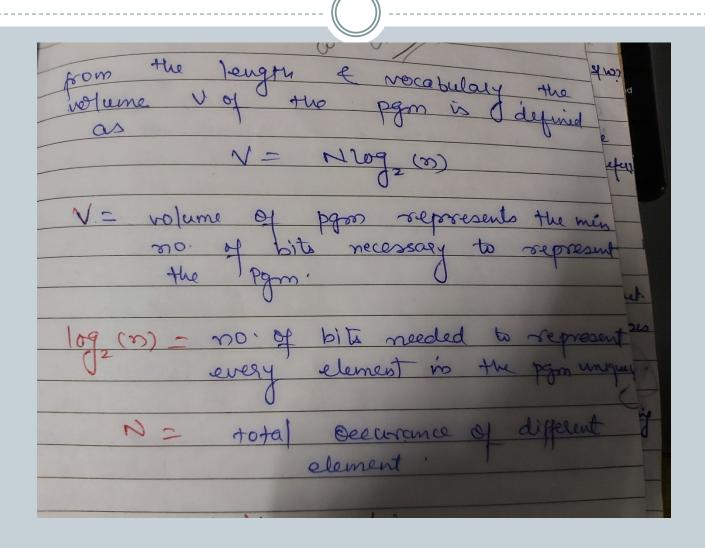
Metrics

- Size Measures
- Complexity Metrics(will be covered in Unit 5)

Size Measures

à Size Metrics (volume) Halstood proposed meterics too length Evolu a pgm based on the mo o no of distinct operator n2 = no of 11- operands = no of occurrences of the it most for New Pasameless

Size Measures



Thank You

• Any Doubt in Unit-4 Coding?????