Заметки по курсовой

Метрики программного обеспечения

I. Product metrics
   A. Number, width, height of inheritance hierarchies
   B. Number of classes inheriting specific operation
   C. Number of classes that a specific class is dependent on
   D. Number of direct users of a class or operation
II. Metrics Design Model
   A. McCabe Cyclomatic Complexity: represents method or a procedure as a graph of all possible paths of evaluating the program; complexity is calculated as «connections - nodes + 2»; CC is the less the better
   B. Source Lines of Code: number of statements (for ex. in C - lines of code terminating with ';'); doubtfully can be considered as context independent metric
   C. Comment Percentage: relation of commented lines to all; SATC has found CP of 30% to be the most effective
III. CK Metric Model (Chidamber and Kemerer)
   A. Weighted Method per Class: measured the complexity of a class throw its methods (that are for ex. estimated with McCabe CC); the less the better
   B. Depth of Inheritance Tree
   C. Number of children: as it progresses, reuse increases along side with testing difficulties
   D. Coupling between objects: use of methods of another class
   E. Response for a Class: the number of methods that are invoked in response to a message; reflects testing difficulty; existing realisation - RefactorIT
   F. Lack of Cohesion in Methods: how much different methods (perhaps of different classes) are similar
IV. MOOD Metrics Model
   A. Method Hiding Factor: relation of hidden the number of methods in all classes to all methods in all classes
   B. Attribute Hiding Factor: the same as MHF but for attributes
   C. Method Inheritance Factor: relation of the number of inherited methods in all classes to all methods in all classes
   D. Attribute Inheritance Factor: the same as MIF but for attributes
   E. Polymorphism Factor: relation of number of all overridden methods in all classes to a sum of products of the number of new methods of a class to number of descendants of this class
   F. Coupling Factor: something strange with the formula, page 33
V. Additional Metrics
   A. Number of Attributes per Class
   B. Number of Methods per Class