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# Collaborative Generic Module Design for Object Oriented Quality Profiling

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***Abstract*—Object process (modeling) Methodology (OPM) Provides a Collaborative modeling environment that can fit and relies on generic modeling OPM, a holistic,bi-modal textual visual approach to the study and development of systems, integrates the object – oriented and process oriented paradigms into a single frame. These refine abstract Mechanism combines with characteristics, makes OPM ideal for process modeling; this is based on client server architecture. The Server holds a single OPM model for each system is a central level. For OPM model there are three access levels: workgroup, OPM model and diagram. The diagram level is unique for OPM, aims to reduce the conflicts between updates (concurrent) and preventing modelers from affecting shared elements (While allowing them to refine elements). Users can simultaneously update the model according to access permission level.***

***Key words:*** **- Test data, Meta data, Metric, Object Oriented Quality Profiling.**

## I. INTRODUCTION

In the age of technology quality is a necessary and important factor because quality is adapted and evolved with different technologies and then applied on any product. Now a day's industries are also focusing and forcing on software quality. All these considered under the software engineering paradigms and Software engineering is an integrated approach of computer science and mathematics. Generic modeling is one of the important processes of software development, including specification, development, validation and evaluation. Inspection and metrics makes software programs successful due to their quality control aspect. Metrics includes collection and analysis of software data as well as attributes and measurement scales. Metrics is a tool which provides a means to extract useful and measurable environment about the structure of a software systems. There are lots of examples of metrics also. The aim of any software project is the accomplishment of software requirement, as stated above are as specifications, development, validations, evaluation and measurement that means to get best quality output or we can called it as product. Development industries have a focus on some factors are as-

- Quality metrics.
- Standards.
- Indirect and direct measures i.e. lines of code.

Test data is the data used in software application were we enter some data for testing most of the features of a program or applications. This kind of data which is used in test is generally termed as test data. In other words we can say that test data is used in test of a software system. Actually test data is used to verify the software behavior to invalid input data. Now the question strikes in mind that how the test data is generated for software development and for its validation? Normally it is generated by testers or by automation tools which supports testing. It is having one best quality is, that it can be re used after verifying. Generally testers used specific terminology for the test data is "TEST BED" preparation. In test bed all software and hardware requirements are set using the predefined data values. To build a comprehensive data set we can use existing sample test bed and append our new test case data each time to get same module for testing in future also. For any test environment one of the best possible ways is to keep data intact by making personal copies in any of the format. The ideal test data would be if all application errors get identified. The ideal test bed designed by considering the following test bed categories –

- No data.
- Valid data set.
- Invalid data set.
- Illegal data formats.
- Boundary conditions data set.
- Data set for performance, lode and stress testing.

Designing of the test bed is a core part of "Project test environment set up". Test bed ideality is depends on time and cost factor. Creativity, judgment and skills are additional tips to create standard data to test. Test bed is one of the essential elements, required for software testing. The test bed consisting of both inputs test data and database test data. In brief we can explain test bed technically as "test bed is an execution environment configured for software testing. It consists of specific Operating system, Hardware, network, configuration of the product to be under test, Software and some other applications". On the other hand test bed is run through a computer program to test the software. It has effective controls on the software.

## II. LITERATURE ANALYSIS

Numerous works are available in the literature related with the Object Oriented Quality Profiling, A brief summary of

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some of the significant researches is as follows: Modeling is traced as a work of Allen, Cohen and Perrault [23,24,25] and Elain Rich[26,27].In their early work, all user modeling was performed by the application systems. In several cases, there were no clear distinction between components and tasks. After mid eighties, onwards such separation came on ground level [28,29,30,31],but still lacking reusability of modeling component. Kobsa [32] was the first author who use the term "User modeling shell systems" for such kind of tools. Van Melle[33]and Bauchanan and Shortliffe[34] all three had condensed the experiences made with the medical experts systems MYCIN[35] in to EMYCIN(essential MYCIN),is an "Empty "expert systems, had to be filled with "real" expert systems. Commercial expert systems shell (Example Knowledge Craft [36]) KEE [37] and ART [38] became popular in seventies and eighties."Shell" a user modeling had similar purpose as expert systems shells, but underlying aims like ,abstraction, decompositions, support reusability and modifications, is of course older than expert systems shells. Tim Finin (1986) published his GUMS[39,40](General user Modeling Systems"), allows programmers of user adaptive applications. At runtime, GUMS accepts and stores new facts, provided by application systems, and answers queries of the applications concerning current assumptions. Albeit GUMS never used together with an application systems, and set the stage for future generic modeling systems. At the time of development there is a provision of services at runtime. Earlier systems usually include a representation systems for the expression of the content (such as logic formation, rules, or attributes-value pair)and a reasoning mechanisms with detection of inconsistency of model.

## III. PRINCIPAL COMPONENT ANALYSIS

For example of user modeling shell systems were developed after generic user modeling system, comprised of different representation mechanisms for user models. UMT (1) "user modeling system" allows developer the definition of ordered user stereotypes, and of rules for user model inferences of contradiction detection. Information received from the application is classified as assumptions. When new information Signals stereotype becomes active and contents added to the user model. Ultimately resolution strategies applied ie "truth mainte nance." PROTUM (2) i.e. Prolog based Tool for user modeling presents content as a list of constants (It is associated type and with confidence factor UMT is related with protum. TAGUS (3) A user learner modeling system, supports powerful updates and Evaluation Requests. It represents assumption about the user in first order formulas. UM (4,5) i.e. users modeling toolkit – It records times stamps of conclude the value of components. In this users can inspect and edit user models (6). Servers (UM):-Purpose of UMS is like modeling shells i.e to separate user modeling functionality from user's adaptive application system. Disadvantages of UMS:-

- Centralized single platform.
- Potential bottleneck and
- Virtual integration.

## III. EXAMPLES OF MODELING SERVERS

A. **Group lens** (7):- It employed various filtering algorithms (8,9). Problems occurred due to this are Memory problem and performance problem. Which can temporarily solved by reduced size models?

B. **ATG** (Adaptive Scenario Engine) [10]:-It Follows" stereotype approach" [11].

C. **Enquire Identity server** [12]:- It supports the development of user modeling servers by introducing flexible virtualization. It helps in elimination of the dependency.

## IV. CHARACTERISTICS OF GENERIC USER MODELING SYSTEM

Modeling servers aimed at condoning basic structure With processes into systems. Therefore they deemed important for user adaptive system. Kobsa [13] suggested following frequently services for user modeling shell system.

- The representations of assumptions about one or more types of user's characteristics in models.
- The representation of relevant common characteristics of user's subgroups of the application system.
- The classifications of users as belonging to one or more and the integration of the typical characteristics of these subgroups into current individual user models.
- The recording of behavior of user with the system.
- The formation of assumptions.
- The generalization of interaction histories.
- The drawing of additional assumptions.
- Consistency maintenance in the user model.
- Provisions of justifications for assumptions.
- Evaluation of user mode and the comparison with standards.

Above mentioned list of course changes when new forms of adoptions to the user require new services from generic user modeling system. It is stable through i.e. by and large valid today. The important addition now a day would be services to secure users data and to protect privacy. Previously researchers tactically strived for "universal generic user modeling systems that would perform all the modeling services. Presently a generic modeling system only delivers a small portions of services listed in the paper, it is unlikely change very much in near future.

### *A. Characters*

Over the years generic user modeling systems and there characteristics had been regarded as very important. Some

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requirements were already proposed very early in the history of generic user modeling, while remaining requirements became important only few years ago When commercial generic modeling come is to existence for web site personalization.

***B. Generality, including domains independence*:**

This required character states that user modeling systems should be usable in, as many domains as possible and even many moduling tasks are also possible, but this requirement is less so to date."Subclass" evolve prominently for student-adaptive tutoring systems that imposes specific requirement on generic student moduling systems [14,15,16,17,18]

***C. Expressiveness and strong inferential capabilities:***

Shell systems express different type of assumptions, includes believes, goals, plans and preferences of user as well as reflective assumptions [19, 20]. Generic user modeling systems were also performs all sorts of reasoning.

**D.*Extensibility:***

Present user modeling server support a number of model acquisition and methods, but companies want to integrate their own methods (third party tool).APIs (Application Programmer Interfaces) and interfaces allows for the exchange of user information between modeling tools.

***E. Support for quick adaption:***

Several commercial user modeling servers can therefore select between more than one modeling methods with different degree of complexity (depends on data availability).

***F. Management of distributed information:***

Current commercial user modeling servers integrate this information at a greater or lesser extent [21].In the future; support for the management of distributed information will also facilitated the integration of mobile user models and in smart user appliances.

***G. Import of external user-related information:***

Due to ligancy business process and software, the user-related info has continued to be updated in parallel to e-commerce application, and needs to be continually integrated at reasonable cost.

***H. Load balancing:***

User modeling servers should be able to react to increased lode state through lode distribution (likely with CORBA based components) and possibly by restoring to less through user model analysis and Support for open standard.

**I. *Transactional consistency:***

By selecting transaction management strategies [22] inconsistencies must be avoided.

***J. Privacy support:***

Legislation has considerable impact for privacy support.

***Failover strategies:*** Require fall back mechanisms in case of break.

## V. FUTURE TRENDS OF SPPCIFIOATIONS

Due to rapid changes in the application scenarios for computing devices of personalization, the demonstration benefits both users and providers. Therefore the necessity comes into existence for generic tools systems. The exact shape which is needed for future modeling will be contingent on many characteristics of future systems usage. The future avenues considerations likely:-

- Models for Mobile users.
- Models for smart appliances.
- Models for agent based user modeling system.
- Models for multiple -purpose usage.
- Models for diver's generic user modeling systems.

## VI. CONCLUSION

In eightees till nineties a tactic assumption were made that only few modeling shell systems/server systems would be needed to support the complete range of personalized applications. The increase in scenario for personalized services with inherent demands and constraints had made "User modeling pearl systems," but instead of all these we will likely see a variety of generic user modeling systems in near future, each of which will support only few different personalized and uses of information of users. The use of legacy systems and exchange of user information will enforce some standardization, at least at the communication level. Importance of study is in fact lives inside our objective i.e. Prototyping which defines source code metrics and analyze internal behavior by data minimizing .We can co –relate each kind of refactoring by a specific change in metrics.

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