Object Oriented Programming In Internet

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Abstract: *In this paper a novel idea was proposed to show how the Objected Oriented Programming (OOP) concept is conjugated with Internet. The main purpose of this concept is how data are hided in objects to prevent people seeing it and in case we want a different implementation. Object oriented in internet is the real options to designing or deploying methods and supporting tools to make people cooperation possible. Object oriented concepts are freely expandable approaches for infrastructure of the internet.*
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I. Introduction

Terminology invoking "objects" and "oriented" in the modern sense of object-oriented programming made its first appearance at MIT in the late 1950s and early 1960s. In the environment of the artificial intelligence group, as early as 1960, "object" could refer to identified items with properties [1].Superficially the term object oriented means that we organize software as a collection of discrete objects that incorporate both data structure and behavior. This is in contrast to conventional programming in which data structure and behavior are only loosely connected [2]. Objects in terms of the programming world, are simply abstractions of code with specified properties. These abstractions make objected oriented programming such a useful way to think about how computers should manipulate and utilize data to achieve specified goals. In the real world, objects are items that are in many ways equally identified by properties they possess. Internet become abstracted into data driven models that can be tangibly analyzed, categorized and used to manipulate data in ways never before thought possible. In a sense, the Internet-ready objects we own create a situation where our lives can be abstracted into something very much like an Object Oriented Program state. Such a model could shed considerable light on deriving the means to make humans and businesses far more productive than ever before [3].

II. Object Oriented Development

In this context development refers to the front portion of the software life cycle: analysis, design and implementation. The essence of object-oriented development is the identification and organization of application domain concepts, rather than their final representation in a programming language, object-oriented or not [2].

2.1. Modeling Concept

Object oriented development is a conceptual process independent of programming language until the final stages. Object oriented development is fundamentally a new way of thinking and not a programming technique. It greatest benefits come from helping specifiers, developers and customers express abstract concepts clearly and communicate them to each other. It can serve as a medium for specification, analysis documentation and interfacing as well as for programming [2].

2.2. Object Oriented Methodology

The methodology consists of building a model of an application domain and then adding implementation details to it during the design of a system. We call this approach the Object Modeling Technique (OMT). The methodology has the following stages:

2.2.1. Analysis

The analysis model is a concise, precise abstraction of what the desired system must do, not how it will be done. The object in the model should be application domain concepts and not computer implementation concepts such as data structures. The analysis model should not contain any implementation decisions [2].

2.2.2. System design

The system designer makes high-level decision about the overall architecture. During system design the target system is organized into subsystem based on both the analysis structure and the proposed architecture.

The system designer must decide what performance characteristics to optimize, choose a strategy of attacking the problem, and make tentative resource allocation [2].

2.2.3. Object design

The object designer builds a design model based on the analysis model but containing implementation details. The designer adds details to the design model in accordance with the strategy established during system design. The focus of object design is the data structured and algorithms needed to implement each class [2].

2.2.4. Implementation

During implementation it is important to follow good software engineering practice so that traceability to the design is straight forward and so that the implemented system remains flexible and extensible [2].

2.3. Three Modes

The OMT methodology uses three kinds of models to describe a system: the object model, describing the objects in the system and their relationships; the dynamic model, describing the interaction among objects in the system; and the functional model, describing the data transformations of the system.

2.3.1 Object Model

Describes the static structure of the objects in a system and their relationships. The object model contains object diagram. An object diagram is a graph whose nodes are object classes and whose arcs are relationships among classes [2].

2.3.2. Dynamic Model

Describes the aspects of a system that change over time. The dynamic model is used to specify and implement the control aspects of a system. The dynamic model contains state diagrams. The state diagram is a graph whose nodes are states and whose arcs are transition between states caused by events [2].

2.3.4. Functional Model

Describes the data value transformation within a system. The functional model contains data flow diagram. A data flow diagram represents a computation. A data flow diagram is a graph whose nodes are processed and whose arcs are data flows [2].

2.4. Objected Oriented Themes

There are several themes underlying object-oriented technology. Although these themes are not unique to object oriented systems they are particularly well supported in object oriented systems.

2.4.1. Abstraction

Abstraction consists of focusing on the essential, inherent aspects of an entity and ignoring its accidental properties. In system development, this means focusing on what an object is and does, before deciding how it should be implemented. Use of abstraction preserves the freedom to make decisions as long as possible by avoiding premature commitments to details. Most modern languages provide data abstraction, but the ability to use inheritance and polymorphism provides additional power. Use of abstraction during analysis means dealing only with application domain concept, not making design and implementation decision before the problem is understood [2].

2.4.2. Encapsulation

Encapsulation (also referred as Information Hiding consists of separating the external aspects of an object which are accessible to other objects, from the internal implementation details of the object, which are hidden from other objects. Encapsulation is not unique to object oriented languages, but the ability to combined data structured and behavior in a single entity makes encapsulation cleaner and more powerful than in conventional languages that separate data structure and behavior [2].

2.4.3. Sharing

Object-oriented techniques promote sharing at different levels. Inheritance of both data structure and behavior allows common structure to be shared among several similar subclasses without redundancy. The sharing of code using inheritance is one of the main advantages of object-oriented languages. Object oriented development not only allows information to be shared within an application, but also offers the prospect of reusing designs and code on future projects. [2]

2.4.4. Combing Data and Behavior

The caller of an operation need not consider how many implementation of a given operation exist. Operator polymorphism shifts the burden of deciding what implementation to use from the calling code to the class hierarchy [2].

III. Internet Functions

The internet is a network of networks. Millions of computer all over the world are connected through the internet. Computer users on the internet can contact one another anywhere in the world. In internet a huge resource of information is accessible to people across the world. Information in every field starting form education, science, health, medicine, history and geography to business, new, etc. can be retrieved through internet.

The main services used in the internet include are Web Browsing: supported by the HTTP protocol, this function allows users to view web pages using a web browser. And next one is E-mail: Allows people to send and receive electronic messages. Other lesser-used services include telnet, FTP and gopher.

Internet is not a government organization. The ultimate authority of the internet is the internet society. This is a voluntary membership organization whose purpose is to promote global information exchange. The internet provides for the following two functions which support communications. Without the communications support mentioned below, the internet could not function. First one is Physical lines that data is sent across. And the second is Routing of data: there are special machines on the internet called routers, which determine where data needs to go to get from the sender of the data to the receiver of the data [4].

3.1. Internet Organization

ISP (Internet Service Providers): They provide the connection to the internet for users and also provide routers that direct internet traffic.
Corporations or Web hosting providers with mail servers and web servers: They provide the information posted on the internet and virtual data connections to other mail servers [4].

3.2. Accessing the Internet

People use an internet browser to access web pages that are available across the internet. Internet browsers include Microsoft Internet Explorer, Netscape Navigator, Mozilla, Firefox and others. Web pages are created in a marked up form of the text file called HTML(Hyper Text Markup Language). The markup within the text indicates document structure showing where paragraphs begin and end what items are in a list, headers, tables and other document structure. The links are location for specific pages and indicate the three things [4]:
 i.   Protocol being used such as http or ftp.
 ii. The domain that the web page is found on. This will point to a specific organization or company's web server.
 iii. The location of the page on the server including the directory path and file name.

IV. Object Oriented Internet

OOP is all about hiding your data and leaving your options open. The wire is all about giving away your data in a well defined format [5]. The internet has become a dominant feature of most programs. This is not saying much. The fact is, most people today are writing programs that in some way interact with the internet. There are so many kinds of programs which do this. Of course, web applications. Object-oriented programming is supposedly all about data. Apparently, OOP is about State, Behavior and Identity. We want to hide our data in objects to prevent people seeing it and in case we want a different implementation. Polymorphism or Dynamic Dispatch is a powerful mechanism here. That is, you don't know anything much about the object you're dealing with. Protection modifiers (public, private etc) are somewhat less good at this but still favorable [5].

4.1. Evidence for usefulness of Object-Oriented Development

We have been actively using object-oriented development in internal applications at the General Electric Research Development Center (GER&D). We have used object-oriented techniques for developing compiler, graphics, user interfaces, database, an object-oriented language, CAD systems, simulations, meta models, control systems and other applications. We have used object-oriented models to document existing programs that are ill-structured and difficult to understand. Our implementation targets have ranged from object-oriented language to non-object oriented language to relation databases. We are enthusiastic supporters of object-oriented development and see no reason it should be used on most software projects. The main benefit is

not reduced development time; object-oriented development may take more time than conventional development, because it is intended to promote future reuse and reduce downstream errors and maintenance [2].

The annual OOPSLA (Object Oriented Programming Systems, Language, and Applications) and ECOOP (European Conference on Object-Oriented Programming) conferences are the most important forums for disseminating new object-oriented ideas and application results. OOPSLA and ECOOP proceedings describe many applications that have benefited from an object-oriented approach. Many persons have heard of object-oriented technology but think of it as inefficient. This attitude is due to the early object-oriented language, such as Smalltalk, that we interpreted and were inefficient compared to C or Fortran. In any case, object-oriented design is broader than object-oriented programming and provides logical benefits regardless of the choice of implementation language
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V. Conclusion

This paper discussed, how the objected oriented programming concept in involved in the development of Internet and internet of thinking's. Also the functions of the internet were discussed to ensure the working process of the internet. Also the future development of internet is well discussed.

Acknowledgements

References

[1]. http://en.wikipedia.org/wiki/Object-oriented_programming
[2]. James Rumbaugh, Michael Blaha, William Premeralni, Frederick Eddy, William Lorensen, Object-Oriented Modeling and Designing, 2003, Prentice Hall of India Private Limited, pp.1-16.
[3]. http:// www.techgenyz.com/3016/03/34/object-oriented-programming-connected-internet-things/
[4]. S.M.Naidu, C.Mrlai Krishna, Information Technology (Introduction to Computer Science), 1st Edition, 2010, Studentshelpline Publishing House, pp.2.21 – 2.24.
[5]. http://whiley.org/2017/06/21on-the-internet-and-object-oriented -programming/.