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Analysis of Web application

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Abstract

Web analysis is not just a tool for measuring web traffic but also a tool for business and market research to improve the effectiveness of websites .Web analytics is the measurement ,collection, analysis , reporting of web data for the purpose of understanding and optimizing web usage. Taint analysis is form of information flow analysis .Taint analysis can probing many common susceptibility to attack of injury. In this paper we discuss various analysis of web application.

Keywords: Web application , Taint analysis , Information flow violation , Hybrid thin slicing.

1. Introduction

Web sites are typically complex and highly dynamic .They require the short development phase in order to get the product up and running quickly. Frequently ,developers go straight to the coding phase without really understanding what they are trying to build or how they want to build it. Server site coding is often done ad hoc, database tables are added as needed. The Object- Oriented Hybermedia Design Method (OOHDM) is one of a number of method s proposed for webApp design.

It focuses on these point:

The analysis of potential Web application focuses on three important points;
(1) What information is to be presented ;
(2) What functions are to be performed to the end - user;
(3) What behaviors will the web application exhibit as it presents contents and perform functions.
Web engineers ,non technical content developers ,and stakeholders participate in the creation of analysis of web application.

Steps

There are several steps of analysis of web application:-
1 - Content analysis identify content classes.
2- Interaction analysis describe basic elements of user interaction, navigational and system behaviors that occur as a consequence.
3- Function analysis web applications functions that are perform for the end-user.
5- Configuration analysis identifies the operational environment in which the web application resides.

2. There are some conditions when web engineers should embrace analysis modeling:-

- The Web App to be built is large and /or complex.
- The number of stakeholders is large.
- The number of web engineers and other contributors is large.
- The success of the Web App will have a strong bearing on the success of the business.

2.1 Requirements analysis for Web Apps:-

Requirement analysis for web Apps encompasses three major tasks. During formulation , the basis goals and objectives are identified, and the categories of the users are definition d. As requirements gathering begins ,communication between the web engineering team and stakeholders (as customer and end users)intensifies.

According to the Watts Humphrey-“the engineering principles of planning before designing and designing before building have withstood every prior technology transition ; they’ll survive this transition as well.

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- Categories of web analytics:-

- Off site web analytics refers to the web measurements and analysis regardless of whether you own or maintain website.

- On site web analytics measures the performance of your web sites in a commercial context .it measures a visitors behaviors once on your website.

Information flow violations comprise the most serious security vulnerabilities in today's web applications. In fact , according to the Open Web Application Security Project(OWASP),they constitute top six security problems. Automatically detecting such vulnerabilities in real –world Web applications may be difficult due to their size and complexity.
TAJ(taint analysis for java), a tool designed to be precise enough to produce a low false –positive rate. TAJ incorporate a number of techniques to produce useful results on the extremely large applications. TAJ supports many complexity features of java platform, Enterprise Edition(Java EE).TAJ consist of two stages . the first phase performs pointer analysis and builds a call graph . the second phase rums a novel slicing algorithms to track tainted data.

Method

we present a novel thin – slicing algorithm that combines flow –insensitive data –flow propagation through the heap with flow and context -sensitive data flow propagation through local variables.
It performs a demand driven traversal over a special system dependence graph called HSDG(hybrid special system dependence graph.)
There are two types of edges in HSDG-

- Direct edges
- Summary edges.

Direct edge connects a store to a load and represents a data dependence computed by a preliminary pointer analysis . summary edge connect s to t if t is transitively data –dependant on s purely via flow through local variables. summary edges are obtained on demand by computing context sensitive reachability over a no heap SDG.

TAJ (taint anlysis of java consis)consis two stages . The first phase performs pointer analysis and built a call graph. the second phase runs a novel slicing algorithm to track taited data.

The TAJ employs any preliminary pointer anlysis and call graph construction algorithm. Taint -specific API , such as source and sinks , are also anlysed with one level of call -string context.

Hybrid thin slicing alogoritm can be discribed in terms of RBPA(Refinement Based Pointer Analysis).Our direct edges from source to load correspond to match edges in RBPA.

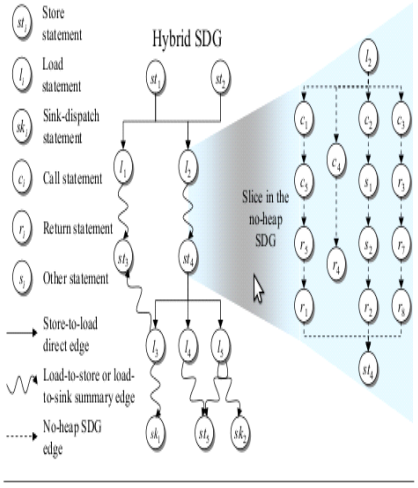
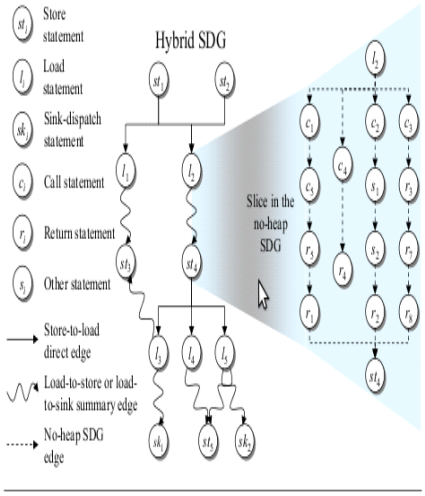


Figure 2. Fragment of the HSDG



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Conclusion and Future work :

In this paper we have presented TAJ , an approach to taint analysis suitable for industrial applications. Hybrid algorithm TAJ use for slice construction is an attractive compromise between context sensitive and context insensitive thin slicing. It will not work for modular analysis. We will proposed an algorithm that will analysis for modular applications. It may be used for incremental analysis.

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