Chapter IV

Sizing Web Applications

Abstract

Surveying and classifying previous work in a particular field brings several benefits, which are to (a) help organise a given body of knowledge, (b) provide results that can help identify gaps that need to be filled, (c) provide a categorisation that can also be applied or adapted to other surveys, and (d) provide a classification and summary of results that may benefit practitioners and researchers who wish to carry out meta-analyses. This chapter presents a literature survey of size measures (attributes) that have been published since 1992 and classifies these measures according to a proposed taxonomy. We also discuss ways in which Web companies can devise their own size measures.

Introduction

Since 1992, several hypermedia and Web size measures have been proposed, motivated by the need to help the development (authoring) process of applications and
for use in Web effort estimation. It is important that such a body of knowledge be structured and made available to give practitioners access to existing measures so they can assess whether or not the measures are applicable to their own environment; in addition, researchers may use this body of knowledge as a starting point to understand trends in Web size measures and measurement.

The literature to date has published two previous surveys on Web measures (Calero, Ruiz, & Piattini, 2004; DeMarco, 1982). However, neither of them has looked specifically into hypermedia and Web size measures, or measures for authoring and effort estimation. We briefly describe these two surveys in this chapter to inform readers. Each survey is briefly documented below.

**First Survey**

Dhyani, Ng, and Bhowmick (2001) classified 52 Web measures according to the following categories, which are also illustrated in Figure 1.

- **Web graph properties**: Set of measures that measure structural properties of Web applications and sites. Here, Web applications and sites are represented using a graph structure where Web pages denote nodes and hyperlinks denote directed edges. Measures are arranged into three types: centrality, global, and local.

- **Web page significance**: Set of measures used to rank Web pages in order to determine their relevance to keyword queries, and also measures the quality of Web pages, where quality in this context represents the relevance of a page characterised by how easy it is for that page to be reached within the hyperdocument’s structure. Measures are arranged into two types: relevance and quality.

- **Web page similarity**: Set of measures that measure the level of connectedness between Web pages. Measures are arranged into two types: content and link.

- **Web page search and retrieval**: Set of measures used to measure the performance of Web search and retrieval services. Measures are arranged into two types: effectiveness and comparison.

- **Usage characterisation**: Measures users’ behaviour with regard to the way they browse Web resources; these measures are used to provide feedback to improve the content, organisation, and presentation of Web applications.

- **Information theoretic**: Set of measures that measure attributes related to information needs (e.g., does this page provide useful content?), survivability, and the maintenance rate of Web pages.
A Novel Approach to Construct Semantic Mashup using Patterns
www.igi-global.com/article/a-novel-approach-to-construct-semantic-mashup-using-patterns/170369?camid=4v1a