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A study of various Characteristics and Categories of Web Applications

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Abstract:

This kind of application is accessible through the World Wide Web Consortium's technologies and standards. The Web browser is utilised as a user interface for these software systems. Tiers are logical portions of a web application, and each tier has a job assigned to it. It's natural for web apps to have an n-tiered structure since they're designed to be used on several devices at once. Three-tiered applications are the most prevalent, although there are numerous variants. The presentation, application, and storage layers are sometimes referred to as the presentation, application, and storage tiers. There are three tiers in a web application: the first is the web browser, the second is a dynamic content engine (such as CGI, JSP/Java, PHP, Perl or Spring), and the third is a database. When a user accesses a website, the middle tier responds to their requests by doing database queries and changes and generating a user interface.

Keywords: Web Applications, Web Application Characteristics, Traditional applications, software etc.

Introduction:

Software that is intended to run on the web using web-specific resources is called a web application. Large and small-scale web apps may be found on the internet. The complexity of web applications has increased over time. There are various ways to describe its complexity, such as its dynamic nature and its usage of multimedia, as well as its performance.

Application development in the past has been characterised by a focus on minimization of functionality while maintaining a high degree of simplicity. “Because of the restricted capability and low level of involvement, no timely updates were possible. Web applications with dynamic content, massive amounts of information, and the ability to schedule and plan are all features of advanced web apps. Increased safety will allow you to outperform your competition.

Characteristics of web applications:

1. Product related characteristics
2. Use related characteristics

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3. Development related characteristics
4. Evolution related characteristics

1. Product related characteristics

An essential aspect of a web application is its database. In short, it's made up of: Now, Hypertext, and What?

• Present: The presentation of a product is critical to its success and survival in the marketplace. The initial impression of an application's success or failure is based on how it looks and feels. As a result, the application must be visually appealing and appealing in terms of current market trends.

• Hypertext: The foundation of a web application is hypertext. Hypertext consists of three essential components: links, nodes, and anchors. Disorientation, cognitive overload, and non-linearity make apps more engaging and enhance performance by implementing these aspects. Path

It's important to remember that content is all about conveying information. One of the most crucial aspects of content creation, integration, and updating is its availability. Multimedia is included as well as documents and tables. Quality, reliability, consistency, and currentness are all essential criteria. There must be a correct arrangement of the papers.

2. Use related characteristics

It is difficult to predict the usage frequency of a web application because is varies according to the user, devices used by the users etc. we can divide the user related characteristics of web application as: Natural content, Social content and Technical content.

- **Natural Content:** It includes the geographical location from where the web applications are accessed and availability of the web application. Global accessibility of web application with 24*7 availability improves the performance, stability and demand of the web application.
- **Social Content:** It is related to user specific aspect. There are thousands of competitive web applications around the globe, the user need spontaneous and immediate benefits. Scalability and multiculturalism are extremely essential feature required for web application.

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- **Technical Content:** It is related to network of web application and the devices where web applications are used. Connection bandwidth, stability, reliability etc. are some essential features that affect the performance of web application. Device specification, browser configuration, version etc. are responsible for web application performance and accessibility.

3. Development related characteristics

It includes: Development team, Development process, Technical infrastructure and Integration.

- **Development Team:** Development team must be highly knowledgeable in their field. There must be proficient designers, database developers, IT experts, hypertext experts, application developers. The team members must be knowledge freaks, willing to work, innovative and interested in latest technology and tools.
- **Development Process:** The development process must be flexible. There must be parallel processes of development.
- **Technical Infrastructure:** The web application must be bugs free and development should be under time limit. Server and Browser are the two external components that should be considered at the time of development. As the use of browser is not exactly known, it depends on user preference, server is usually configured and operated as desired.
- **Integration:** The web application must have support for integration with already existing system or with external content and services.

4. Evolution related characteristics

As per the changes in requirements there occurs some changes or upgradations in the web application. This evolution may concern all the other three characteristics viz. Product, Use and Development. Market competition or short time development may cause the changes.

Categories of Web Applications:

We can categorize web applications as follows:

1. Document centric web application
2. Interactive web application
3. Transactional web application
4. Work-flow based web application

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5. Collaborative web application
6. Portal-oriented web application
7. Ubiquitous web application
8. Knowledge-based web application

1. Document centric web application

Document centric web sites are static html documents stored on web server that is sent directly to the client on request. The web pages are manually updated with the help of respective tools. These applications are static, simple, stable and take less time to respond. These applications are costly to maintain (at the time of update), having inconsistency problem because of being static, no timely update of information.

2. Interactive web application

Interactive web applications are offered by CGI, HTML Forms. It includes radio buttons, selection menus, forms etc. These applications are simple and fast. In this kind of application the web pages and links are generated according to user input.

3. Transactional web application

These kind of web applications have facility of modification by user. These applications are more interactive and support structured queries from database. The database system handle data consistently and efficiently.

4. Work-flow based web application

These kinds of web applications are capable of handing the workflow among companies, private authorities or public authorities. Web services are included for interoperability. It is robust, reliable and flexible to handle workflow with autonomy of companies. B2B e-commerce solutions are best example of such applications.

5. Collaborative web application

These kinds of applications are mainly used as group applications where group communications are important part. Chat rooms, online forums, e-learning websites or websites where information are shared with option of editing like Wikipedia are some examples of such web application.

6. Portal oriented web application

These kinds of web applications are those where single access point is there to separate different sources of information and services. Search engines, community portals etc. are best examples of portal oriented application.

7. Ubiquitous web application

These kind of applications provides customized facilities for any device from anywhere at any time. It has limited interaction facility and support limited device. It requires advance knowledge of context where the web application is being used for dynamic adjustment. A service based on location is an example of such web application.

8. Knowledge-based web application

This kind of application is used for providing knowledge for both human and machine. The knowledge management is based on semantic web technologies. Mining the web, linking and reusing knowledge are a few examples".

Conclusion:

There are more stakeholders, more tasks and interaction styles, more complicated technical infrastructure, and more contextual concerns in a web application than in a conventional application. The qualities of a web application may influence the usability attributes, and vice versa; the relevant usability attributes can dictate the potential characteristics that should be taken into account by a web application. Future studies will investigate the link between web application features and usability qualities.

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