

Essential Characteristics for Ubiquitous Projects

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Abstract-Context-aware applications are used in ubiquitous projects. Context-aware applications adapt their behavior according to changes of physical environment. The aim of this paper is to understand and extract the various ubiquitous characteristics of my projects in terms of context-awareness. Various ubiquitous characteristics of these projects has been find out and generated the tabular form.

Keywords: context; context-awareness; ubiquitous; ubiquitous computing;

1. INTRODUCTION

Context is any information which is characterizes an entity such as location of a user, name of a user, weight of a user. So information which is characterizing an entity is a context. This definition used activity is a key to context awareness. Context-awareness is used in ubiquitous computing systems to records user activities, manage audit trail of user action to understand user may want in the feature.

Context-awareness computing have ability to changes in applications according to the environment. In context-awareness needs to consider location, activity, identity, time which is explain the characteristics of entity. In context-awareness the context types are depends on computer system. However more data can be collected to enhance a computer system.

Ubiquitous computing is creating an environment that is change according to requirement of an application. Ubiquitous computing technology disappears and transparent the user. Ubiquitous computing system is context-aware to have the user information, such as identity, location, time, activity and system also become adaptable, flexible and proactive. Ubiquitous computing system is very effective, it track and record the user's intent [1].

Need of the ubiquitous computing

Need of the huge research are generally interoperability, range of motion, customization, safety, level of privacy in addition to understanding. This specific portion define a various requirement means need of ubiquitous computing.

Interoperability

Interoperability is solitary of a many needed Requirements associated with ubiquitous software. Interoperability is usually a sub-characteristic including integrability in addition to is in part described simply by interconnectivity, versions ability including computer software ingredients to

Communicate along with Exchange information.

Services

Within common products and services your stability systems should service authentication, certification, discretion, trusted exchange and comfort of communication

and information, end program and end users destinations and security in opposition to refusal of service episodes.

Adaptability

In ubiquitous computing services must adapt the environment according to the changes of the requirement .it must adapt the behavior according to the user & the system perspective.

Context awareness

Context-aware programs employ wording to deliver relevant data or maybe products and services with a individual. Many of us defined groups of context-aware programs —that are generally business presentation regarding data along with products and services, programmed performance regarding products and services, along with adding data.

Why ubiquitous computing used???

The purpose of the ubiquitous computing system is to create an environment that is saturated with communication capability. Environment that integrate with the human user. With successfully creation of this type of environment user become transparent & disappears. With the context aware system, ubiquitous computing system can become adaptable, proactive, flexible& invisible to the users.

With increase in mobility the user context such as location of the user & object around her is more dynamic. Ubiquitous computing can access information services whenever they are. Anyone conditions need to have ways to conform solutions suitably.

The categorization of context aware future has been two steps to develop taxonomy. Information for that person obtain instantly dependant on wording is referred to as computerized contextual reconfiguration. It really is practice which often ends up with a computerized presenting for the easily accessible useful resource dependant on current wording. Process in which executes get for that person by hand is referred to as contextual get applications. Applications that execute command automatically is used context –triggered actions [1].

There are few key areas in the ubiquitous computing that can be increased with the use of context awareness.

Proactiveness

For the ubiquitous computing, it is more effective. It must track all the user information. Without this, system will not be able which system action & event will help the user.

Invisibility

Invisible ubiquitous system to the user needs to ensure the minimal intrusion to the user guide.

Adaptation

For the ubiquitous computing system, to be very most effective system, its needs to be a adaptive environment in any place. When there is a mismatch between the demand & supply resources. The only way the system can do this relative information to the user environment.

Security& privacy

Authentication & verify the user both are used for security & privacy in the ubiquitous system. Context awareness & ubiquitous assistive technology give optimal functionality & independence assuming. This technology fully meets the user for the given context [4].

2. VARIOUS UBIQUITOUS PROJECTS

Project1. Context for ubiquitous data management

The requirement of computer systems might be all-pervasive and also context-aware. In this paper describe various characteristics of situation and also dependence on situation conscious system with regard to info administration system [2].

Project2. The meaning in addition to attributes associated with huge learning.

Learner provides adequate information at any time and any where during the u-learning. In this document we have now offered the attributes as well as description involving u-learning program. The very idea of u-learning help in planning, arranging as well as creating u-learning applications. Greatest about these kinds of attributes as well as description, we have now design and style our personal u-learning description as well as attributes to boost the comprehension of u-learning [3].

Project3. Context awareness – why is this characteristics important

Context-awareness is important characteristic of ubiquitous computing systems. Context-awareness play major role in ubiquitous computing. Context-awareness need to invisible ubiquitous computing system to the user. To invisible system, make correct and effective decisions using data with no interactions from the user. Context-aware system is rich in data. Using this data system can perform truly ubiquitous.

Using context-aware ubiquitous computing system adapt changes like user location. System can gather this information using context-aware that was collected and adapt appropriately. Without context-aware this is not possible. Context-aware characteristics of ubiquitous computing system help to integrate systems gracefully to the user's environment. This enables the devices to adjust and adapt to the user's needs [4].

Project4. Understanding of context and context-awareness

Context is very dynamic in the ubiquitous computing. Using context aware change the current situation of the user. To be able to more effective using the particular wording, we now have utilized wording in addition to context-awareness ubiquitous processing techniques. Context can be just about any data that can be used to go into detail an organization. Organization could be a man or woman, location as well as subject. These kinds of organizations tend to be anything highly relevant to connection between your user in addition to application. Context-aware programs provide facts in addition to providers on the user. Context-aware application makes use of location, personality, occasion in addition to task since main wording kinds [5].

Project5. Toward framework conscious workflow managing intended for ubiquitous processing.

Framework conscious workflow managing adjusts workflow performance conduct regarding present circumstance info. All-pervasive campus direction-finding technique integrates a variety of heterogeneous sites. The machine provides the info with regard to end users with the graphical & textual method while using consumer present area Multilevel talk about [6].

3. CHARACTERISTICS OF VARIOUS UBIQUITOUS PROJECTS

3.1 SYSTEM PERSPECTIVE

Accessibility

Ubiquitous computing system get access the information from any location, any time and everywhere.

Immediacy

Ubiquitous computing system provides immediate useful information at any time.

Interactivity

Ubiquitous computing system that communicates with peers, experts, teachers, students, tutors during the learning process.

Dynamic connection

That's link may be dropped or not available link when a sensor can be momentary not available and also have to be re-established when it's readily available over and over [3][2].

3.2 USER PERSPECTIVE

Adaptability and personalization

Context-aware system key is adaptiveness and personalization. It is the main characteristics of ubiquitous learning. Ubiquitous computing system that have capture the right information at right time in everywhere.

Privacy and security

Context-awareness systems have high security and privacy.

Proactiveness

The context-awareness system knowing user would want to do and detecting behavior [4][2].

3.3 CONTEXT-AWARE

Presentation

Delivering the particular determined info along with services gives to the end user.

Programmed delivery

A service execute automatically.

Marking

Wording marking with regard to data along with providers with regard to outside collection [1].

3.4 OTHER

Situation

Ubiquitous computing systems have ability to understand the user situation by using sensor readings and applying to the learning process.

Seamlessness

Ubiquitous computing systems have ability to continue learning progress. This is started in other place.

Calmness

Sensor and learning devices become invisible and quiet [7][2].

4. OUTCOMES

No of characteristics described given below-
 AC=Accessibility
 IM= Immediacy
 DC= Dynamic connection
 AD&P=Adaptability& personalization
 SEAM=Seamlessness.
 PRO= Proactiveness
 CALM= Calmness
 IT=Situation
 E= Automatic Execution
 P&SEC= Privacy & Security
 PR= Presentation
 T=Tagging

5. CONCLUSION & FUTURE WORK

In our literature survey, we have taken the several projects. Based on the study, we track the various characteristic of ubiquitous. We have shown the result in a tabular form in which we detect whether that particular characteristic is present or not. We have quantified the various characteristics of ubiquitous projects its means some of characteristics present & other are not. In future, we will design the authenticate model which will give the correct value of these characteristics.

TABLE I. DESCRIBED THE CHARACTERISTICS OF VARIOUS PROJECTS.

		RELATIONSHIP OF CHARACTERISTICS OF DIFFERENT PROJECTS															
		NAME OF CHARACTERISTICS															
NO OF PROJECTS	SYSTEM PERSPECTIVE			USER PERSPECTIVE				CONTEXT AWARE			OTHERS			SYSTEM QUANTIFICATION			
	ACIM	IN	DC	AD &P	P &SEC	PRO	PR	E	T	SIT	CALM	SEAM	SP	UP	CA	OTH	
PROJECT 1:																	
UBIQUITOUS LEARNING	√	√	√	X	X	X	X	√	X	√	X	X	X	75%	0%	67%	0%
PROJECT 2:																	
DATA MANAGEMENT	X	X	X	√	√	√	√	X	X	X	X	X	X	25%	100%	0%	0%
PROJECT 3:																	
SENSOR TECHNOLOGY	√	√	√	X	√	X	X	√	X	√	√	√	√	75%	33%	67%	100%
PROJECT 4:																	
CONTEXT & CONTEXT AWARENESS	X	X	√	X	√	X	X	√	√	√	X	X	X	25%	33%	100%	0%
PROJECT 5:																	
WORKFLOW MANAGEMENT	X	X	X	√	√	√	√	√	√	√	X	X	√	25%	100%	100%	33%

Table 1 shows the ubiquitous characteristics present in the Ubiquitous environment.. Characteristics identified on the Different projects .based on the different characteristics We find out the system quantification. This table shows the Relation between the no of projects and ubiquitous Characteristics.

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