ASSIGNMENT -1

NAME-SHAMIMA KABIR

ID-20-42304-1

SEC-B8

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WEB OF THINGS

The Web of Things is a computing concept that describes a future where everyday objects are fully integrated with the Web. The prerequisite for WoT is for the "things" to have embedded computer systems that enable communication with the Web. Such smart devices would then be able to communicate with each other using existing Web standards.

WEB OF THINGS--

A Web Thing has four architectural aspects of interest: its *behavior*, its *Interaction Affordances*, its *security configuration*, and its *Protocol Bindings*, as depicted in Figure 19. The behavior aspect of a Thing includes both the autonomous behavior and the handlers for the Interaction Affordances. The Interaction Affordances provide a model of how Consumers can interact with the Thing through abstract operations, but without reference to a specific network protocol or data encoding. The protocol binding adds the additional detail needed to map each Interaction Affordance to concrete messages of a certain protocol. In general, different concrete protocols may be used to support different subsets of Interaction Affordances, even within a single Thing. The security configuration aspect of a Thing represents the mechanisms used to control access to the Interaction Affordances and the management of related Public Security Metadata and Private Security Data.

HOW/ DOES IT WORK--

WOT (Web of Trust) **is** an online reputation and Internet safety service which shows indicators of trust about existing websites. ... The service also provides crowdsourced reviews, about to what extent websites **are** trustworthy, and respect user privacy, vendor reliability and child safety.

✔ WOT protects you while you browse, warning you when you visit dangerous sites, scams, malware, phishing, rogue web stores, dangerous links, and more
✔ Reputation icons are displayed next to search results, social media, email, and other popular sites to help you make informed decisions online
-Red indicates potential danger
-Yellow tells you to be careful
-Green means it's a safe website
✔ Website reputations are calculated by combining advanced algorithms with millions of user reviews

THE WOT STORE--

As previously mentioned, the W3C Web of Things (WOT) standards constitute a novel and effective approach to enable the seamless integration of heterogeneous IoT components, abstracting from their implementation [2]. Several IoT markets, traditionally characterized by the fragmentation of the protocols and communication technologies, might greatly benefit from the definition of a reference architecture providing a way to describe, in a non-ambiguous way, the interfaces and the interaction patterns of the IoT components [7] [8] [9] [10]. At the same time, the goal of our research was not to target a novel application scenario of the W3C WOT, rather to leverage on the novel opportunities offered by a world of W3C Web Things, being them native (i.e. implementing the architecture defined in [2] from scratch) or adapted from traditional deployments (e.g. via a proxy). More specifically, we addressed the following key questions: (i) how to ease the discovery and the management of W3C Things, by supporting both private (i.e. only visible within a local network environment) and public (i.e. reachable by the whole Internet) environments? The WoT management means general-purpose functionalities like for instance: find the Things satisfying specific requirements (e.g. location), perform actions on them, display property values, that we expect to be present in any W3C WOT deployment, regardless of the use-case. (ii) given that the Thing Descriptor (TD) provides a interface of the behaviour of a Thing and of the way to interact with it, how can we ease and even automatize the deployment and execution on WOT applications composed by multiple, heterogeneous Things.

FEATURES—

The features offered by the WOT Store platform can be grouped in three main modules:

1.Things manager

2.Application manager

3.Data manager

BENEFITS OF WEB OF THINGS—

- Access information. You can easily access data and information that is sitting far from your location, in real time. ...
- Communication. ...
- Cost-effective. ...
- Automation. ...
- Privacy & security. ...
- Complexity. ...
- Lesser jobs. ...
- Dependability.

APPLICATION OF WEB OF THINGS—

The Web of Things depends upon applications for its value. In the Interest Group. we've talked a lot about thing descriptions and APIs, but very little about applications, and I think this is holding us back.

A microcontroller may be dedicated to a single application. This is the model for the Arduino framework where each device is limited to one application sketch. For home hubs and cloud platforms we need to enable multiple applications to be installed and run. Some apps run in the background without a human machine interface, e.g. a data logger that stores sensor data onto a memory card or which uploads the data to the cloud. Other apps run in the foreground and require a human machine interface.

Imagine using a smart phone to access apps on your home hub. One of these will allow you to manage the installed apps. It will allow you to review the existing apps, to run them, to delete them, and even to install new ones. One way for this to work is for the home hub to act as a web server. At the minimum the hub will need to support HTTP, but it would be better if it can also support Web Sockets for asynchronous bidirectional messaging. The hub would also need to support the protocols and communications technologies to access IoT devices.

When it comes to finding new apps to install, you would visit a website on the Internet that is trusted by your home hub. By this I mean that the hub provides the CORS headers that enable a script on web page loaded from an Internet site to communicate with the hub. The CORS header might enable any domain, with the hub requiring a certificate to be provided by the website. I can imagine the web page passing the URI for the app to the hub for it to download, subject to your approval. An app could be delivered as a zipped collection of files. The hub would verify their integrity and install them on local storage. The files would include the human machine interface for the apps, i.e. the HTML and related resources for the web page for accessing the app. The files would also include the scripts for accessing the things hosted by the hub as proxies for the connected WoT devices.

CONCLUSION—

Our society is now totally dependent on the biggest ever network, the Internet; one of the major and most astonishing of human inventions. In this network, most of the information traffic is created and generated by people through email, the web and other user services.

In **conclusion**, **web of Things** is the concept in which the virtual world of information technology connected to the real world of **things**. The technologies of **Internet of things** such as RFID and Sensor make our life become better and more comfortable.