GeoMoB – A Geo Location based browser for secured Mobile Banking

Abstract:

With banks reaching its users via mobile banking, it is becoming one of the essential feature that is demanded by almost every smartphone user. Mobile banking via a mobile browser is similar to internet banking. Browsing-based threats for smartphones are just the same as those for personal computers, elevating the need to focus on mobile security. Among the several authentication schemes, geolocation authentication is gaining importance as it is found most suitable for mobile devices. In this paper, GeoMoB, a dedicated secure mobile browser for mobile banking that makes use of multifactor authentication is designed and developed. GeoMoB features a geolocation based authentication scheme which ensures security of mobile transactions based on the user location. In addition to the existing two factor authentication scheme using user ID, password and OTP, the mobile number and geolocation is used to authenticate the user. The geolocation intimates the banks location from where the transaction is going to be performed thus helping banks to ensure secure transactions. The geolocation of the user is acquired through the network provider and hence the need for using GSM is eliminated. The multifactor authentication used in GeoMoB ensures security while performing mobile transaction and prevents users from various attacks.

Introduction:

Smartphones offer several ways to access a services which may include mobile apps, mobile browsers and even as widgets. It comes to the decision of the business to choose how to reach their customers. Though mobile apps are being commonly used among the users, mobile browsers find their own importance. Mobile browsers are the ones that enable the user to view websites on their hand-held devices whereas mobile apps or applications are the ones that are to be downloaded on the user's mobile phone in such a way that once downloaded it may be used any time. Though

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mobile applications are the easiest way in accessing a service, mobile browsers are preferred in accessing various services as they have certain advantages when compared to the mobile applications. A mobile browser called a minibrowser, microbrowser or wireless Internet browser (WIB), is a web browser designed for mobile phone and tablets. They are specially designed so as to display web content for small screens. Mobile browser software must be small and efficient to accommodate the low memory capacity. Some common mobile browsers are Google Chrome, iris, Mozilla Firefox, kindle, Apple Safari, Opera, Internet Explorer, Maxthon, Blackberry, UC browser, etc. According to current statistics, it can be observed that the trend of mobile internet is growing tremendously over desktop internet. Since 2013, more tablets and smart phones were sold than PC's., bringing in the need for mobile browsers. Now a days, world is tending towards mobile dominated web. One out of every ten costumers are coming to a site using their mobile devices. More people in Africa have a mobile phone than access to electricity.Mobile browsers make the various websites instantly available unlike mobile applications that need to be downloaded for accessing services. The mobile web browsers are capable of rendering websites in a common fashion whereas in case of apps, the operating system has to be considered. The advantages that mobile browsers is that there is no need for frequent updates and makes the websites instantly available. The mobile banking scenario has several threats associated with it. All time connectivity to the internet in the mobile devices have paved way to several attacks including man in the middle attack, phishing attacks etc making security an important factor to be considered when providing services to the user.

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