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Touch-down

Putting your finger on security.

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When it comes to security, numbers and pin-codes usually are the go-to solution for keeping sensitive data safe. We now expect smartphones that are equipped with handling complex tasks at the fraction of a second, because it all comes down to speed, speed, speed! Speed in the world of technological advancement is not only considered smart but essential. We expect the most out of our devices and we expect top-line performance but bear in mind that nothing in life works a hundred percent of the time. Antibacterial soap kills 99.9% of germs, so... 100% chance of the *iPhone's* **Touch ID** working? Impossible!!!

Speed is the direction in which *Apple* went with the iPhone. Introduced in 2013, the **Touch ID** authentication system was the new revolutionary feature added to the iPhone 5s. Since its release the **Touch ID** software has been refined over time to be 99.9% accurate at scanning a fingerprint and instantly unlocking the *iPhone*. While the 0.1% would be software complications struggling to identify the fingerprint. So, how did *Apple* invent such a genius solution to most of *Apple's* biggest security questions and queries? Well, they put their finger on it.

Touch ID works by taking a fine, mathematical representation of your fingerprint represented through data points. Underneath the **Sapphire Crystal plate** (known as the home button) an assortment of chips and microprocessors analyse this data and uses it once the steel ring around the home button detects a finger. The fingerprint reading then begins. **Touch ID** intelligently analyses precise information about the fingerprint as it maps out ridges and the nature of your touch, creating a virtual password for the user. **Touch ID** can record numerous fingerprints on one device, provided permission is granted by the owner of the *iPhone*, of course.

Before **Touch ID** was embedded in the 2015 – 2017 iPhone models (*iPhone* 5 - *iPhone* 8), consumers were already occupied with questions about their rights to privacy. Security of apps that handled credit card information were once quite limited.

Laser-cut saphire crystal

Saphire crystal plate protects the Touch ID sensor and acts as a lens to precisely focus on finger.

Who can access your data? Will they access sensitive information embedded in applications?

Many *Apple's* consumers will say they admire the intelligence behind *Apple's* **Touch ID**. However, blogs and other logistic reports have surfaced in the past couple of years, stating that **Touch ID** is not the miracle password protection that the public expected it to be.

Fingerprints can be used for identity theft. It is a tricky process and complicated affair, but it is not impossible; as proven by German hacker who was able to hack the **Touch ID** software on the *iPhone* 5s. Apple Pay is a very convincing argument to discuss and consider when pointing out the negatives to **Touch ID's** security. *Apple* Pay uses the **Touch ID** technology to make contactless payments with the use of the user's fingerprint. Users' finger can also make payments on the *App Store, iTunes Store*, bank transfers and other online banking processes. It saves the user from inputting individual segments of the credit card information, therefore limiting the

chance of stolen data through unsecured networks and or websites.

The only downside to *Apple Pay*, thanks to **Touch ID** is the risk of being hacked or compromised. Fingerprints can be forged the same as currency; through detailed reproduction. So, when the consumer relies on a fingerprint to keep their information safe and secure, other vulnerabilities are exposed. By using **Touch ID**, we the consumer are subconsciously driven to choose weaker passwords for our phones and apps as a backup. This theory is supported in a recent case study by "Effectiveness of *iPhone's* **Touch ID**". This begs another question. Is **Touch ID** just as reliable as the six-digit pin *Apple* users commonly rely on?

Modern smartphone technology may satisfy our needs to complete complex tasks within a fraction of a second, but; is our privacy really safe or are we exposing ourselves through trusting devices with confidential information?

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Laser-cut saphire crystal

Stainless steel detection ring

Capacitive single-touch sensor

Touch ID sensor

Tactile switch