Kingdom of Saudi Arabia
King Faisal University
College of Computer Sciences & Information Technology

Reverse engineering in internet of things (IoT) and cloud computing

by

Ali Abduljaleel Alshawaf (**220026479**)

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Introduction:

Reverse engineering is a way to find how something works by taking it apart and looking at its parts. Reverse engineering can be used to improve cloud-based IT systems, which are systems that use the internet to store data and process data. Cloud-based IT systems are important because they can make things faster and easier for people and businesses [1].

First reason why reverse engineering can be used to improve cloud-based IT systems is that it can help fix problems and make them secure. cloud based IT systems have bugs or errors that make them not work properly or cause them to crash. Reverse engineering can help find these bugs and fix them by changing the code or the firmware. Reverse engineering can also help patch cloud-based IT systems, which means updating them to protect them from hackers or viruses. Hackers or viruses can try to break into systems and steal or damage the data. Reverse engineering can help patch the systems by finding the weaknesses and closing it [2].

Second reason why reverse engineering can be used to improve cloud-based IT systems is that it can help make them more efficient. cloud based IT systems can be slow or use too much energy or resources. Reverse engineering can help make them faster and use less energy or resources by optimizing the code or the firmware [2].

Reverse engineering can also impact other IT technologies, like cloud computing and IoT. IoT means many devices that are connected on the internet and can communicate with each other. For Example, smart phones, smart watches, smart TV, and smart cars are all IoT devices. Cloud computing means a way of using the internet to share data and services from different devices. For example, Dropbox and Google Drive are all cloud computing services [3].

Reverse engineering can impact IoT and cloud computing in positive and negative ways. On the positive side, reverse engineering can help make IoT and cloud computing more secure and efficient by finding and fixing problems, patching vulnerabilities, and adding new features. On the negative side, reverse engineering can also pose some risks and challenges for IoT and cloud computing. Example, reverse engineering can be used by hackers or criminals to break into IoT and cloud computing systems and cause harm or steal data. Reverse engineering can also be used by competitors or enemies to copy IoT and cloud computing systems and gain an advantage or cause damage [4].

There are also other new technologies that already use reverse engineering or should consider using reverse engineering in the future. Example, biotechnology, which is the use of living things to make services, can use reverse engineering to understand and modify the genes of animals or humans. This can help create new medicines or foods [5].

In conclusion, reverse engineering is a way to finding how something works by taking it apart and looking at its parts. Reverse engineering can be used to improve cloud-based IT systems, which are systems that use the internet to store and process data. Reverse engineering can also impact new IT technologies, such as IoT and cloud computing, in positive and negative ways. There are also other new technologies that either already use reverse engineering or should consider using reverse engineering in the future. Reverse engineering is a useful and powerful tool for IT, but it also has some challenges that need to be considered.

Reference:

[1] What is Reverse Engineering? | Astro Machine Works

[2] Fundamentals of IoT firmware reverse engineering | Infosec (infosecinstitute.com)

[3] IoT and Cloud Computing: Shaping the Future of Technology in 2023 (cloudpanel.io)

[4] jiot-2875240-pp.pdf (ne.ro)

[5] Reverse Engineering in Biology - Serious Science (serious-science.org)