
The Research And Analysis Of Apple Iphone 6S

iPhone 6s is a smartphone device developed and design by Apple Inc. iPhone 6s has a A9 chip with 2 GB of RAM, Touch ID sensor and good graphic quality and performance.

The range of activities possible with the device are:

Camera: A 12-megapixel camera with optical image stabilisation feature makes iPhone 6s much famous. Camera has autofocus with focus pixels, Panorama up to 63 megapixels, 5x digital zoom, automatic image stabilisation, Face detection, reduces noise, it has 1080p HD video recording, time lapse option for the video and slow-motion feature which makes the camera advanced and better.

Web Browser: The inbuilt browser app Safari gives a reliable web-surfing facility. This is an easier and safer way of surfing any information or website up on the internet, it is secured with pop-up blocker, its allows user to save the webpage for the future use or any research. User can use multiple tabs for different website with lots of features.

App Store: This is the favourite application for all the users around the globe as it allows user to search for an application related to their needs and demand including free of cost and payable. App Store contains thousands of application which is useful for different purposes. For example a social media app Facebook, a music app Garage band, Food delivery app Uber Eats, etc.

Settings: This is also an inbuilt application in an iPhone which allows user to access the change and access the software and hardware information about the iPhone. It has all the information about the contents and all the application, security setting where user can set their own sort of privacy settings and iPhone 6s also allows user to read their unique finger print and set that as a lock/unlock feature. Different manual changes can be made with the help of this app.

iPhone 6s is 143grams which is 5.04 ounces which easily fits in a palm, it has a 4.7inch widescreen Liquid Crystal Display with IPS technology, it has got a good size screen which easily fits in a pocket and very easy to carry around. It can be used as multiple purpose, it can be used as a phone, camera, book. It is a small device with lots of feature which is available in different colour, it has a fingerprint lock and unlock system at the bottom of the screen and contains a volume button, lock button, earphone plug and a charging connector.

The main components on its main system board are:

Processor: iPhone uses 1.85 GHz dual-core Apple A9 processor. This is a 64-bit ARMv8 processor which is manufactured by TSMC and Samsung both. It was first introduced on September 9, 2015. This is one of the powerful and fastest chip which supported LTE feature and Touch ID was upgraded on iPhone 6s.

RAM: iPhone 6s used 2GB which is twice as much as the iPhone 6 which was much faster and it could take twice the load compared to previous iPhones. It was a 2GB of LPDDR4 RAM which had better interface speed. The RAM made the usage of any application faster and much

reliable to the user.

Storage: iPhone uses NAND flash method as a storage which is designed by Toshiba, iPhone 6s upgraded with 16GB, 32GB, 64GB and 128GB with different pricing with the difference in the storage capacity. Four sizes availability was quite an option for the user around the globe according to the usage. iPhone also had a feature of an online storage as iCloud which held up to 5GB of the data which stores as a cloud.

Primary Memory for iPhone 6s is LPDDR4 RAM non-abbreviated as low power double data rate. This DDR4 RAM supports dual channel devices which provides a shorter data path and helps in less consumption of power with high bandwidth and faster rate of providing data. This has 1.1 volt which is less than LPDDR3 RAM. This adjusts automatic clock speed and power saver mode when the power saver mode is on. This RAM uses 2 or 4 clock architecture so each command uses 1, 2 and 4 clock cycle while transferring the information on the data bus on the positive edge of clock and the number of input pins are less than other DDR models.

In iPhone (ios based device) data are usually stored on the internal memory of the device. It has different sized NAND flash memory.

The main method of storage in iPhone 6s is the NAND flash in four different storage capacity which are 16GB, 32GB, 64GB and 128GB these are designed by Toshiba. They are named after NAND and NOR logic gates.

NAND gate uses floating gate transistor, every memory are similar to a standard MOSFET which has got an extra gate which is called as "floating gate" between control gate and main body and is isolated electrically and the gate having any charge stays for a length of time which is eventually used for storage. This has a two possible charge value which is with the negative charge storing a bit value 0 and with no charge with a bit value 1.

iPhone also has way of storing data in the cloud or using iTunes on the computer which is a facility provided by Apple itself. The iCloud helps to backup save and store files and folders from any of the devices connected to the iCloud account.

The 1.8 GHz dual core 64-bit ARMv8-A processor shows a basic change to ARM architecture. The AArch64 has a 64 bit registers that supports double-precision floating point. This is dual core chip which is also named as Twister which has 2 GB of LPDDR4 RAM in the device. The A9 directly combines a fixed motion coprocessor which is called M9 which recognises an Artificial intelligence called Siri which follows the voice commands of a user and performs the task over voice.

The A9 contains a per-core L1 cache of 64 KB for data and 64 KB for instructions , an L2 cache of 3 MB shared by both CPU cores, and a 4 MB L3 cache.

The A9 has its custom storage way, which is NVMe- based controller designed by Apple which contacts over a PCIe connection.

The instruction set used in an iPhone 6s is RISC which is Reduced Instruction Set Computer. This is small and highly optimised instruction set and it breaks down the instruction which is given to the system and makes them less time consuming and better.

This instruction set RISC mainly comes under ARM architecture processors which is mostly in smart phones, tablets, computers and it also uses its instruction in super computers. The simple code makes it easier to choose by programmers and operating system because of the easy and small instruction set which has good reputation with the processing speed since 2011. The main characteristics of RISC are they design very simple instructions which results a one cycle execution. This processor allows only special load and store operations for the memory access. Register to register operations simplifies the design a instruction set. This instruction also uses a large register which provides chance for the compiler to make an efficient usage and also can reduce calls and returns, it also has fixed length simple instruction format which allows for structured decoding and planning of instructions.

The operating system used by iPhone 6s is the iOS with the latest version is 11.4. Apple launched iOS in 2007 as it was called iPhone OS. It was Steve Jobs who first introduced iPhone in an Apple history on January 9th, 2007. The unrecognised OS was named 'Software' by Steve Jobs. In the beginning it had multi-touch gestures, visual voicemail, mobile web browsing on safari and YouTube application. Later in January 2008 an update came along with customisable home screen, Maps, Weather, Mail and stocks. Later in 2008 3G was introduced and iPhone started taking a huge platform with a reliable hardware and its software features. Multimedia messaging, spotlight search, a landscape keyboard and word functions made iPhone more popular. It took very big platform Apple started developing different features with the growing technology, the iOS started making every life easier and reliable on the planet. It was the convenient way which included all the features for the human need. It started with a inbuilt Artificial Intelligence called Siri which helps in recognising voice and performs the task as told by the user. iOS took very big leap on the planet making peoples life easier and more convenient.

The main method of creating software for iPhone is the famous programming language Swift which is made by Apple itself in 2014 for the progress of iOS and OS X. It is designed to work with Apple's Cocoa and Cocoa Touch frameworks and the large body of existing Objective-C runtime library which allows C, Objective C, C++ and swift code to run with one program.

Swift has features addressing some common programming errors like null pointer dereferencing and provide syntactic sugar to help avoid the pyramid of doom. Swift was introduced with help of LLVM compiler framework and Xcode, it uses Object C as a runtime and allows all the programs to run in one single program.