

## FreeRTOS

An operating system is a piece of software that runs on a computer or mobile phones that performs various functions . First , it is responsible for running the background functions on phones or computers . It is the OS which manages time for all the background functions . Secondly , it manages all the files, folders and documents on the device allowing users to access them as and when required . OS provides device drivers for systems which enables system to read and write from an external disk or memory device , respond to keyboard or mouse inputs etc. We might be familiar with general purpose OS like windows , mac , android , IOS etc .

Sometimes , the time management function of OS is limited to certain time intervals , means OS may not know exactly which task to perform and for how long it needs to be performed . If we want to give strict schedules to a task we cannot use general purpose OS . This is where we require Real Time OS . RTOS can be defined as a part of software which can perform multiple tasks at the same time . RTOS can split a complex task into multiple tasks and perform each based on priority . 'Priority' here means that task with high priority is performed first , for example user inputs(like pressing a key on keyboard) is given higher priority than the background functions like downloading an application . RTOS is light weight as compared to general purpose OS .

FreeRTOS is free of cost and open source . It is an RTOS for embedded systems . Embedded system is a system which performs a particular function . It cannot perform more than one function . Examples of embedded systems are watches , washing machines etc . Microcontroller is another example of embedded system . We might be familiar with Intel core processor . It is an example of a microcontroller , it works as a small computer which has memory . Some examples of FreeRTOS are Amazon FreeRTOS , SAFERTOS, and OPENRTOS .