Research work 3

1. What is IDE and complier list out differences

An integrated development environment (IDE) is a software suite that consolidates basic tools required to write and test software. Developers use numerous tools throughout software code creation, building and testing. Development tools often include text editors, code libraries, compilers and test platforms.

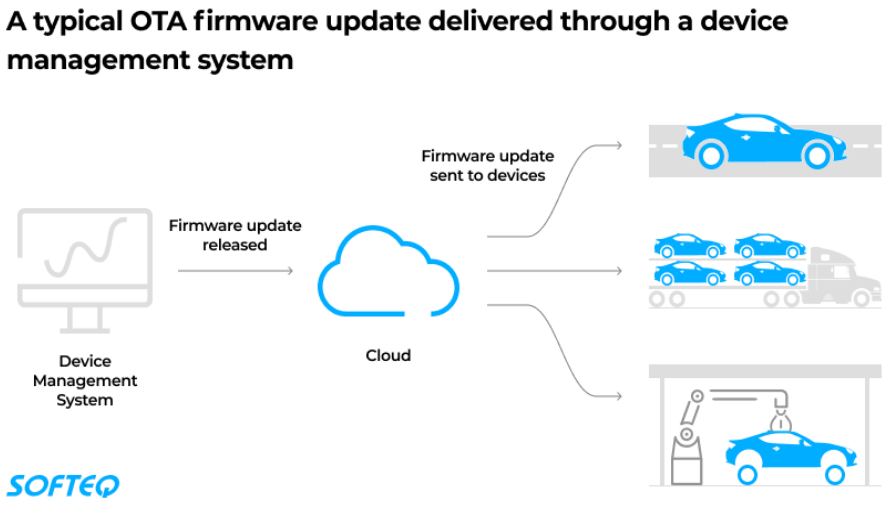
A compiler is a special program that translates a programming language's source code into machine code, bytecode or another programming language.

Sr.no	IDE	complier
1.	A software application that provides comprehensive facilities to computer programmers or software development	Ab software that transfers is computer code written in one programming language into another programming language
2.	Provide tools to create built and taste software it also provides programmable editor and data modelling, libraries, build automation tools etc.	Translate the source code machine code so that it can be exhausted by the computer
3.	Examples net beans ellipse Microsoft visual studio and code blocks	example JNU GCC

2. Bootloader and its working-
   A bootloader, also spelled as boot loader or called boot manager and bootstrap loader, is a computer program that is responsible for booting a computer.

   Working-
   A boot loader is a critical piece of software running on any system. Whenever a computing system is initially powered on, the first piece of code to be loaded and run is the boot loader. It provides an interface for the user to load an operating system and applications

3. OTA-
   An over-the-air update is a way of remotely distributing new software, configuration settings, and even encryption keys to devices like mobile phones, tablets, set-top boxes, cars or secure voice communication equipment.



4. Difference between BareMetal and RTOS-

SR.NO	BareMetal	RTOS
1.	On a simpler note, bare-metal programming means writing an application directly on your hardware without using an external application programming interface i.e., without any operating system.	Using RTOS we use an operating system interface between the application and processor.
2.	BareMetal applications tend to be written at a low-level, where the application developer is directly accessing registers using their own software	A RTOS is a collection of libraries that are designed to aid a developer in creating a multi-tasking and deterministic run-time environment.

5. how to choose between bare metal and RTOS for project

   In general, you need bare-metal programming when the project is simple or, even more importantly, when the penalty for failure is high.
   RTOS used when there a lots of tasks, lots of desktop-style I/O, or a sophisticated user interface.