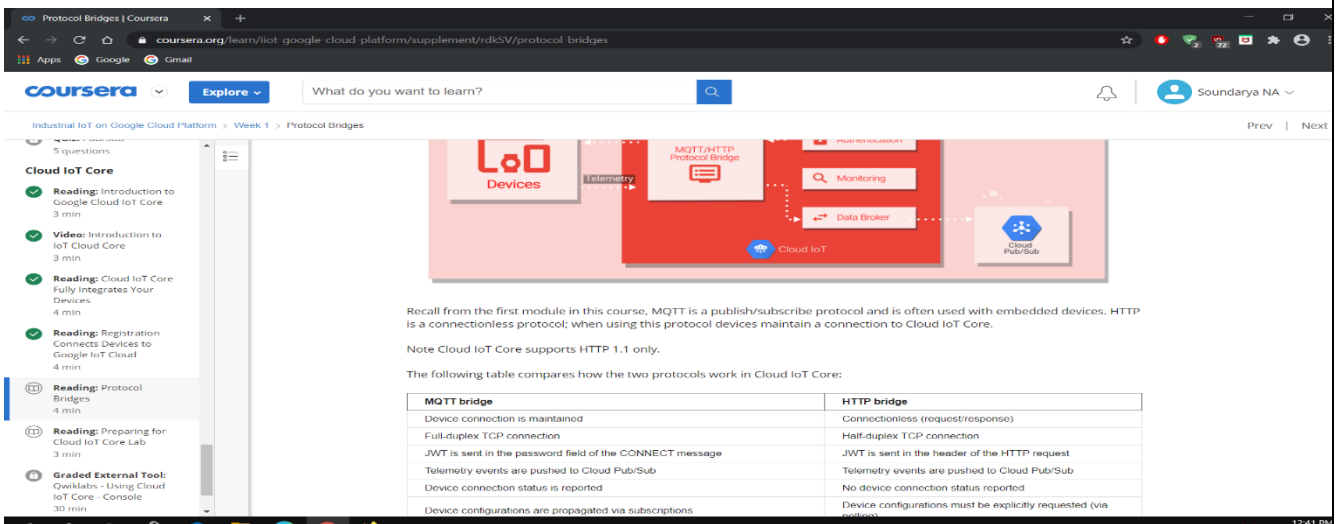
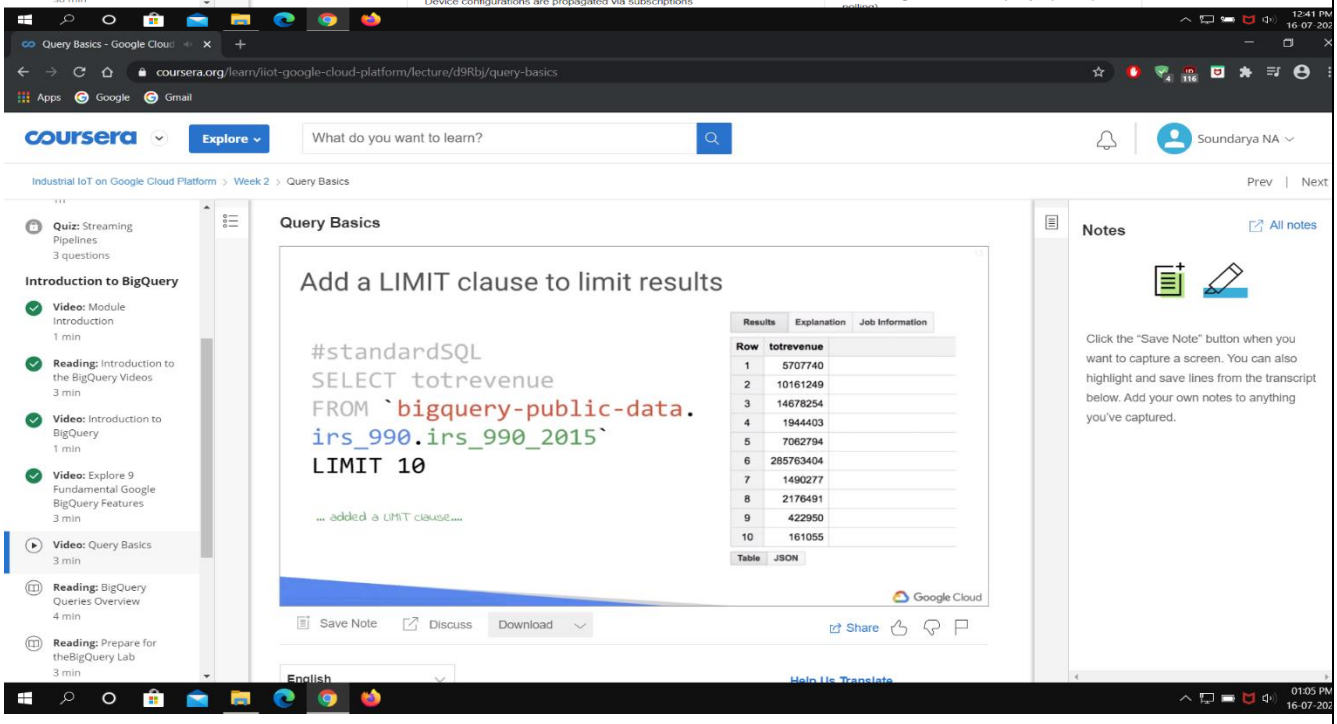
DAILY ASSESSMENT FORMAT

Date:	17th July2020	**Name:**	Soundarya NA
Course:	Coursera	**USN:**	4AL16EC077
Topic:	Industrial IOT on Google Cloud Platform	**Semester & Section:**	8th - B
Github Repository:	Soundaryana-courses		

FORENOON SESSION DETAILS

Image of session





Report:

The Internet of Things (IoT) refers to a network comprised of physical objects capable of gathering and sharing electronic information. The Internet of Things includes a wide variety of “smart” devices, from industrial machines that transmit data about the production process to sensors that track information about the human body.

The Internet of Things promises to transform a wide range of fields. In medicine, for example, connected devices can help medical professionals monitor patients inside and outside of a hospital setting. Computers can then evaluate the data to help practitioners adjust treatments and improve patient outcomes.

Another field that’s also experiencing a transformation is urban planning. When sensors that have an IP, address are placed under a busy street, for instance, city officials can alert drivers about upcoming delays or accidents. Meanwhile, intelligent trash cans are able to notify the city when they become full, thus optimizing waste collection routes.

The use of smart devices will also likely mean a competitive advantage for businesses that use them strategically. For instance, by tracking data about energy use and inventory levels, a firm can significantly reduce its overall costs. Connectivity may also help companies’ market to consumers more effectively.

By tracking a consumer’s behavior inside a store, a retailer could theoretically make tailored product recommendations that increase the overall size of the sale. Once a product is in a consumer's home, that product can be used to alert the owner of upcoming service schedules and even prompt the owner to book the appointment.

As with all questions of personal data, there are many privacy concerns that have yet to be addressed when it comes to the Internet of Things. The technology has advanced much faster than the regulatory environment, so there are potential regulatory risks facing companies that are continuing to expand the range of Internet-connected devices.

Embedded systems have become an important part of every modern electronic component such as – microwave oven, washing machine, remote control, RFID tags, routers, modems, PDAs, mobile phones etc. Embedded system is a part of large device that perform specific task of the device. For instance – they are used as home automation embedded systems to control lights, sensors, sense climate change, AV systems etc.

Today, IoT is one of the hottest topics of the industry and has taken its place in conventional business Jargon. However, it brought host of challenges for developers — as they need to develop devices that allow seamless connectivity. To help embedded developers meet the challenges posed by IoT, an RTOS must be designed that delivers scalability, connectivity, modularity, safety and a cutting-edge feature set to comply with the demands of highly connected remotely managed IoT solutions.

As IoT solutions present all industries with business opportunities, it gives tremendous opportunities for embedded system developers too. For an embedded developer, it is all about connecting multiple devices to the internet. However, there is a lot more than just being connected to the internet. IoT for embedded systems is more about collecting and analyzing large amount of data from different perspectives and summarizing it into useful information to improve the way services and devices are used today.

Major players in embedded hardware and software development are aiming to bring these transformations into their products to take advantage of growing IT market. Smart embedded systems need architecture and design elements to suit real time operations. With billions of devices expected to join in the coming years, analysts expect that IoT will have significant impact on device design. Working with these devices is a different domain for most of the application developers. The key difference between a general OS and RTOS lies within the high degree of reliability and consistency on timing between the task acceptance and completion.

With growth and advancements in the field of electronics and wireless communications, devices around us are able to communicate in a better way than one can imagine. The future of embedded systems and IoT lies in the advancement of technologies that enable faster communication with high

interwoven connections between different devices. IoT is gradually sneaking into our lives and is expected to become more persuasive in future. It is going to become a lot more than just a concept, and the interaction between embedded devices will revolutionize the way data and devices are interconnected.

No doubt, the future of IoT embedded devices is going to be bright with the easy access of internet in every corner of the world. Internet of things will play a significant role in the manufacturing of devices, as a result of which people will have complete access to products at home — even if they are away from home. The Internet of Things (IoT) holds a promising future, especially in North American embedded industry where companies come up with innovative products.