ACS College of Engineering
Approved by AICTE New Delhi, Affiliated to VTU, Belagavi
(A Unit of RajaRajeswari Group of Institutions)
CET Code : E186 COMED-K : E003 PGCET : T918

FICE

Department of Biomedical Engineering

In collaboration with FICE

Intel Intelligent Systems Labs

Webinar on "Building New Era AI Applications with Intel oneAPI Toolkit"

Open for students of ACS COLLEGE OF ENGINEERING

Date: Tuesday, 27 July 2021

Time:11 am to 01:00 pm

Resources Person: MOHAMMED AMEER, SME, FICE

About FICE:

FICE promotes market-relevant education and strives to create a coherent innovation and entrepreneurship oriented ecosystem for all.

About Resource Person:

A highly skilled experienced tech professional in the field of Internet of Things and Artificial Intelligence. Ameer is an innovative professional with years of experience in tech solution development, content curation and content delivery around IoT and AI. He has delivered enormous number of tech sessions, webinars and workshops to varied set of audience. Over the years he has conducted more than 200 workshops covering pan India catered to more than 8000 participants on various technologies. He has mentored various projects around IoT, computer vision, automation and AI. Ameer Lives in Bangalore.

ABOUT EVENT:

Intel's oneAPI is an open, accessible and standards-based programming system that enables developer engagement and innovation across multiple hardware architectures, including CPUs, GPUs, FPGAs, AI accelerators, and more. These tools all have very different properties and are thus used for various operations–which oneAPI attempts to simplify by unifying them under one model.

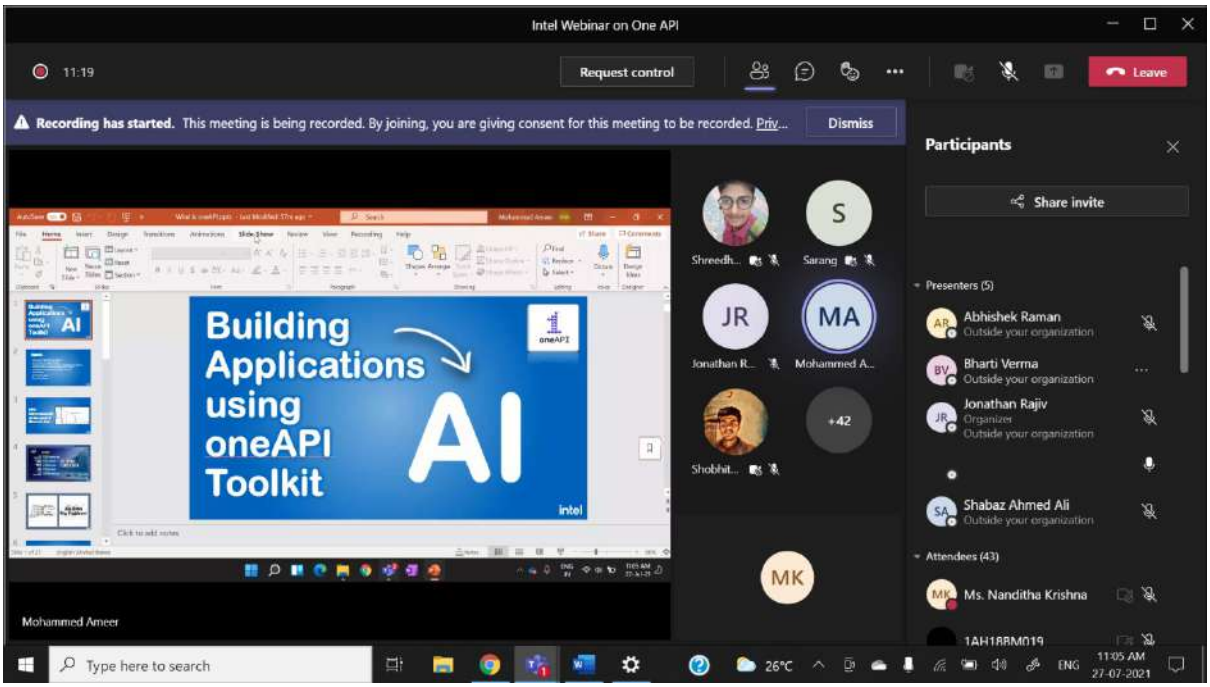
A persisting problem faced by developers even today is the volume of programming environments our increasingly digital world offers. Disparate programming environments disable time-saving strategies such as code reusing and turn into real hurdles for software developers. Intel unveiled oneAPI at its Supercomputing event in 2019 as a part of its software-first strategy. The model signalled Intel's ambitions to have a unified programming framework as a solution to limiting proprietary programming platforms.

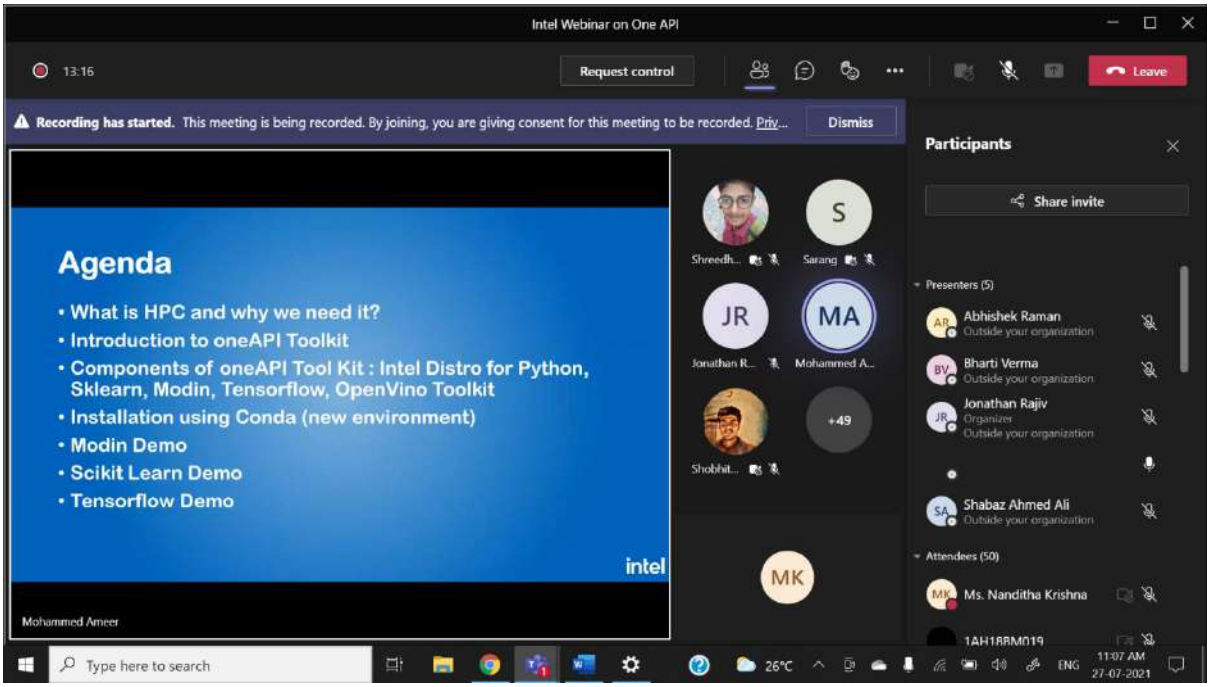
oneAPi enables developers to work without the exhaustion of juggling with different languages, tools, libraries and different hardware. Here are a few top features of oneAPI:

Data Parallel C++

To make oneAPI possible, Intel developed the data-parallel language DPC++ (or Data Parallel C++). This language, which is open-sourced, incorporates C++ and the Khronos Group's SYCL to support data parallelism and heterogeneous programming. The language is reportedly

similar to how standard C++ works, with added extensions to it, making it easy for developers to transition to DPC++.

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Agenda
• What is HPC and why we need it?
• Introduction to oneAPI Toolkit
• Components of oneAPI Tool Kit : Intel Distro for Python, Sklearn, Modin, Tensorflow, OpenVino Toolkit
• Installation using Conda (new environment)
• Modin Demo
• Scikit Learn Demo
• Tensorflow Demo
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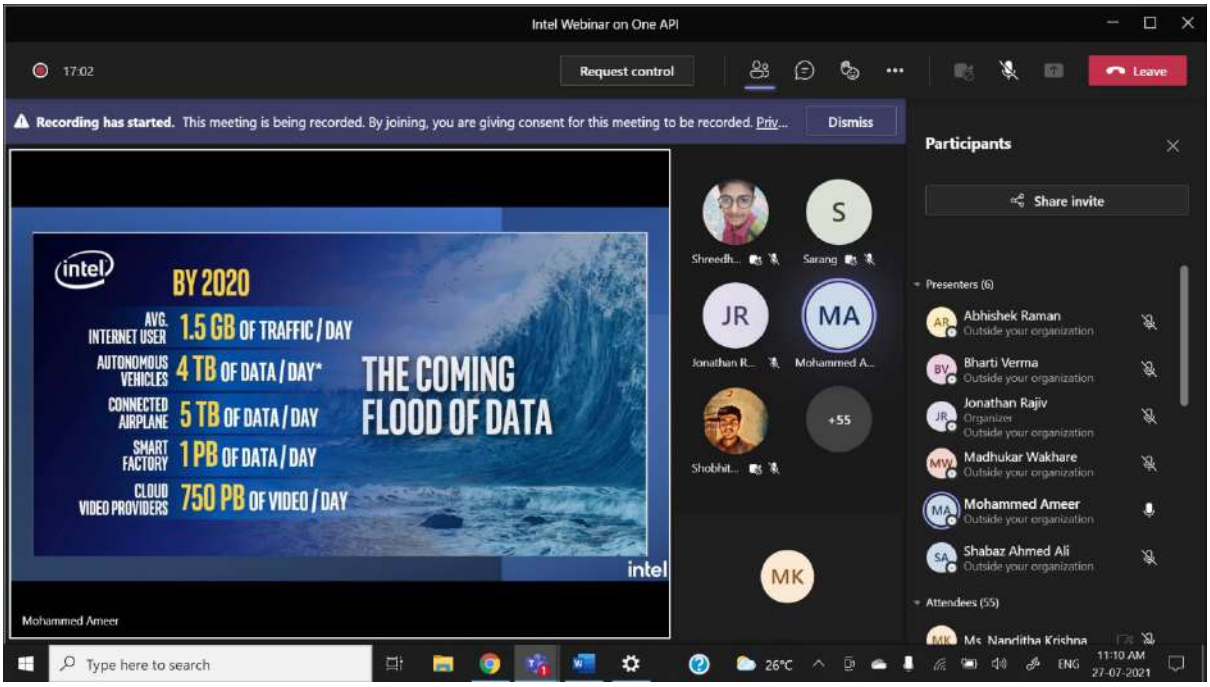
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AVG. INTERNET USER 1.5 GB OF TRAFFIC / DAY
AUTONOMOUS VEHICLES 4 TB OF DATA / DAY*
CONNECTED AIRPLANE 5 TB OF DATA / DAY
SMART FACTORY 1 PB OF DATA / DAY
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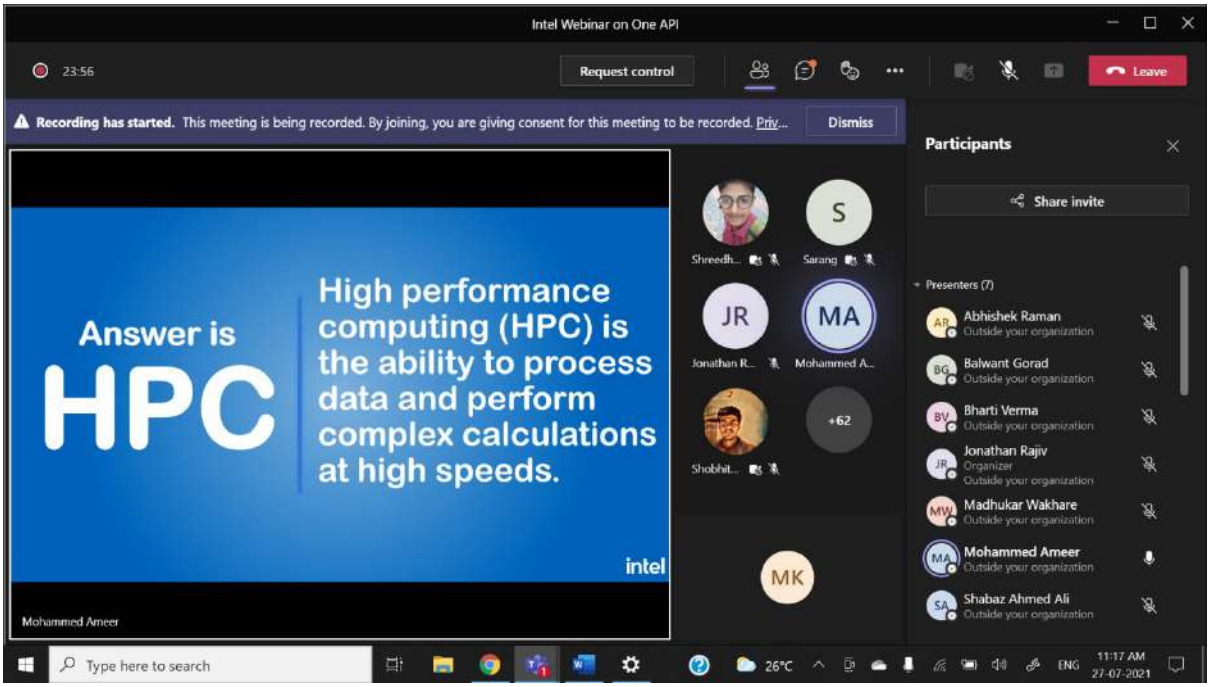
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Answer is
HPC
High performance computing (HPC) is the ability to process data and perform complex calculations at high speeds.
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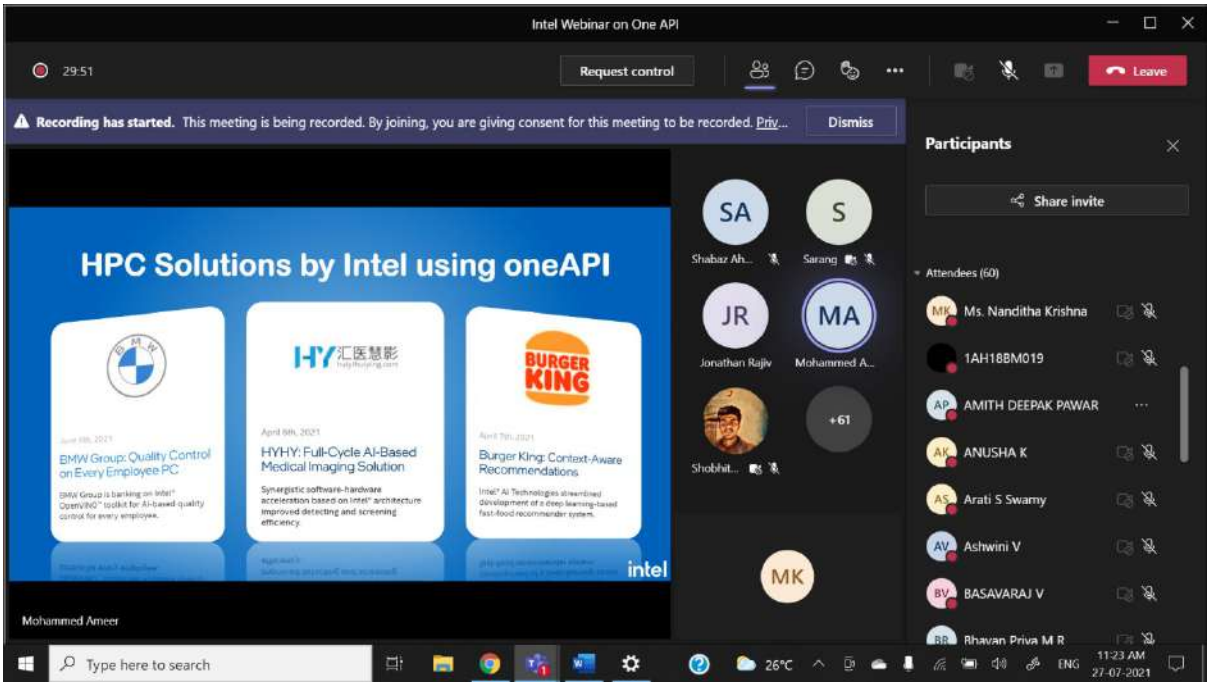
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HPC Solutions by Intel using oneAPI
BMW Group: Quality Control on Every Employee PC
HYHY: Full-Cycle AI-Based Medical Imaging Solution
Burger King: Context-Aware Recommendations
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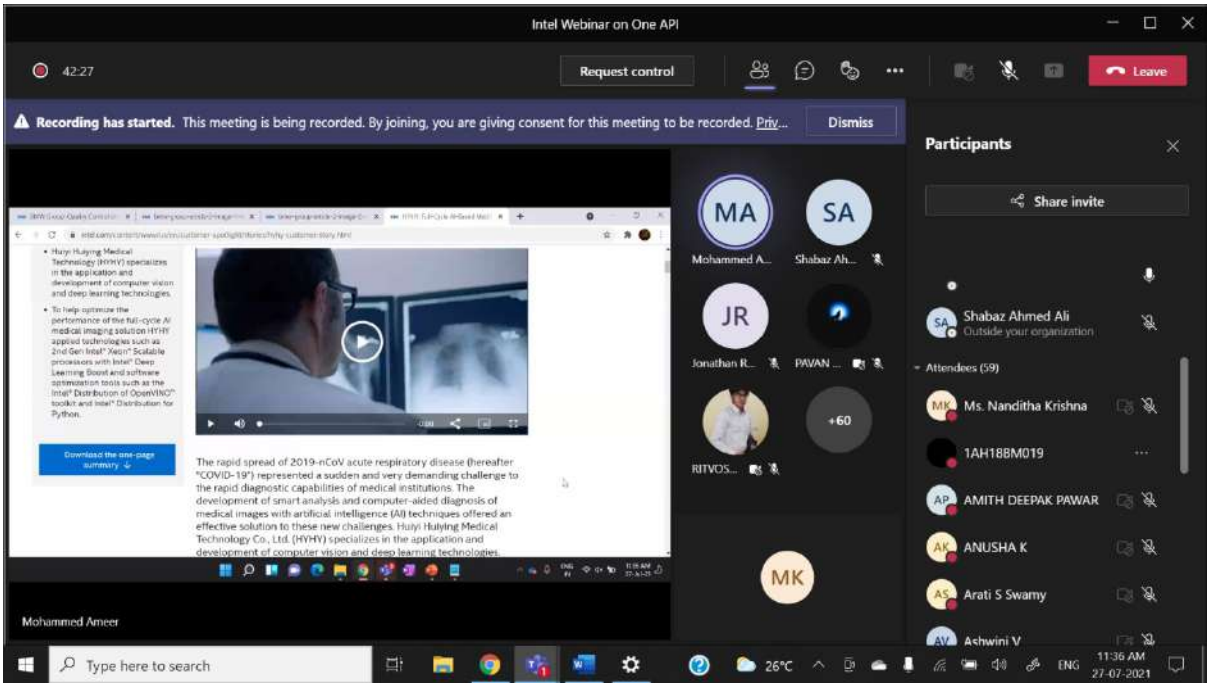
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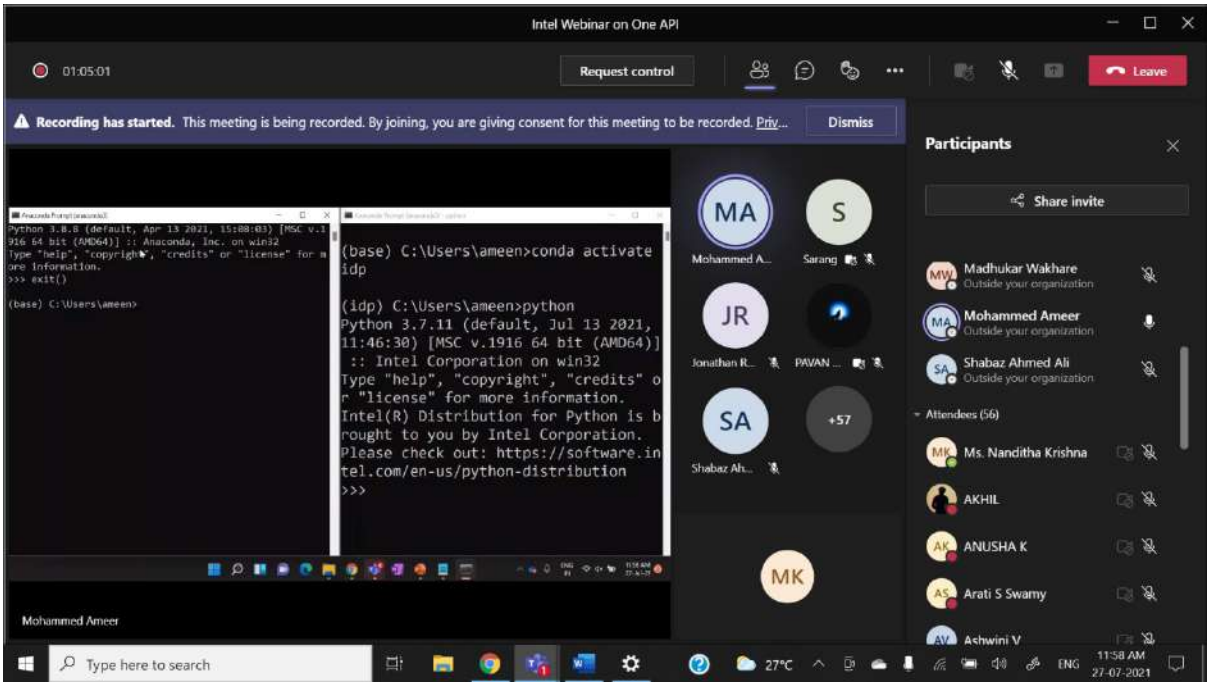
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(idp) C:\Users\ameen>python
Python 3.7.11 (default, Jul 13 2021, 11:46:30) [MSC v.1916 64 bit (AMD64)] :: Intel Corporation on win32
Type "help", "copyright", "credits" or "license" for more information.
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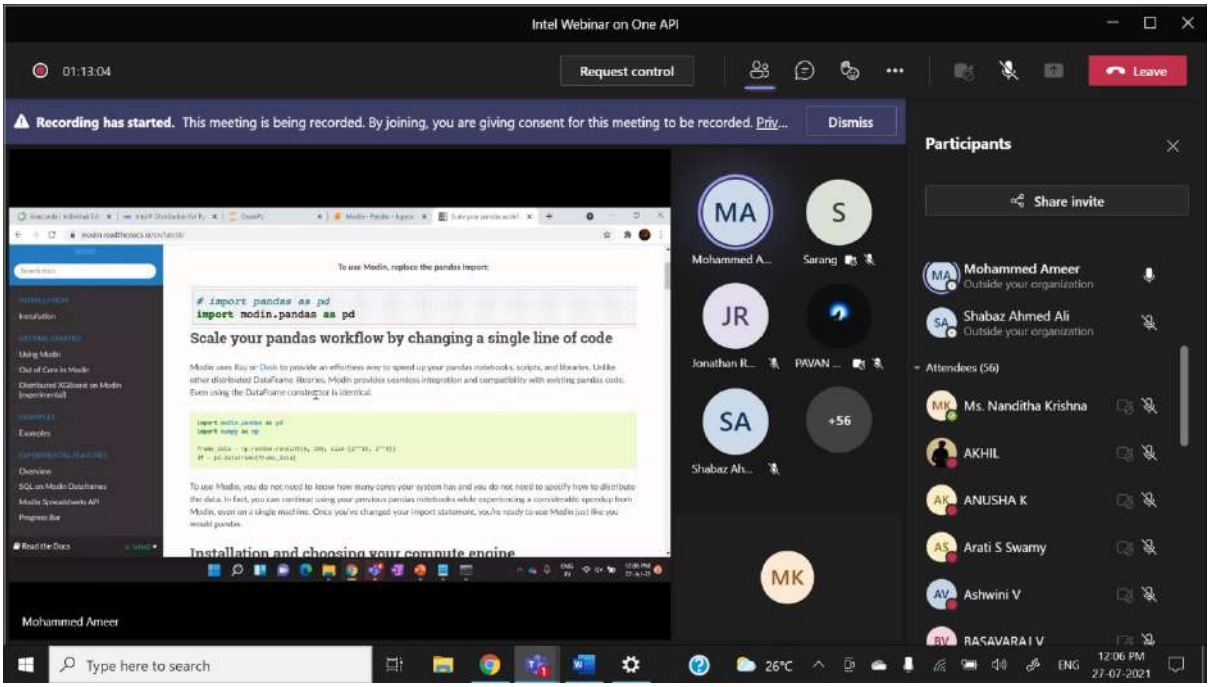
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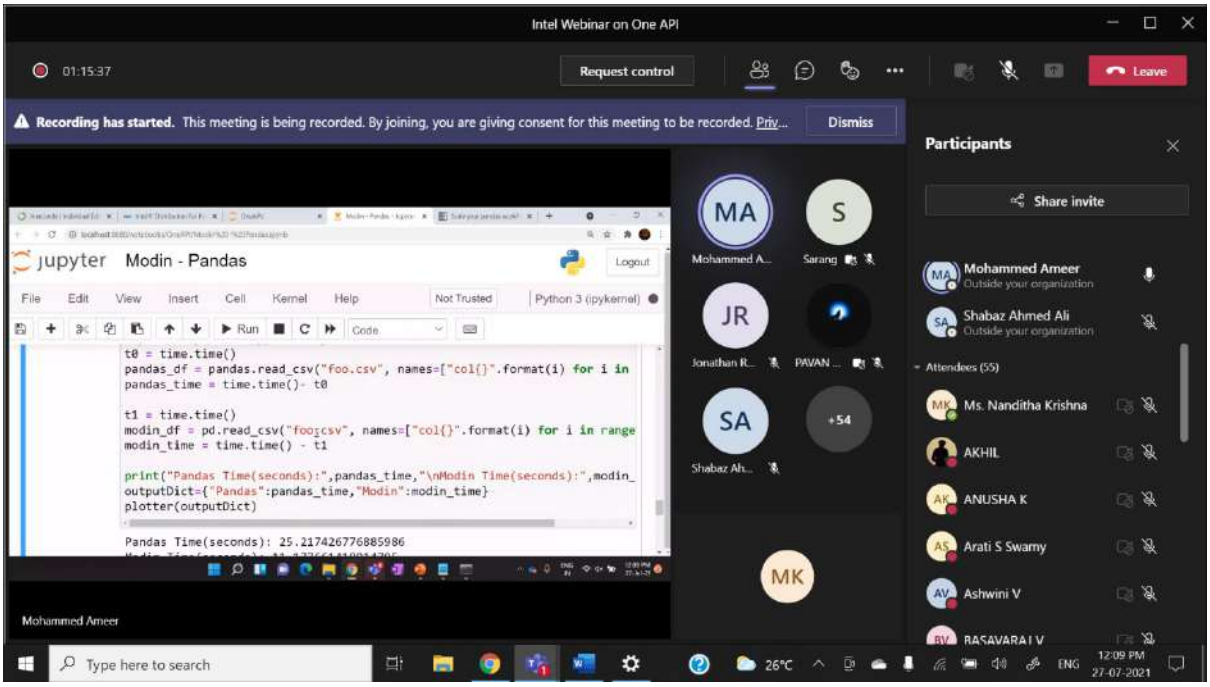
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Not Trusted
Python 3 (ipykernel)
Run
Code
t0 = time.time()
pandas_df = pandas.read_csv("foo.csv", names=["col{}".format(i) for i in
pandas_time = time.time() - t0
t1 = time.time()
modin_df = pd.read_csv("foo.csv", names=["col{}".format(i) for i in range
modin_time = time.time() - t1
print("Pandas Time(seconds):",pandas_time,"\nModin Time(seconds):",modin_
outputDict={"Pandas":pandas_time,"Modin":modin_time}
plotter(outputDict)
Pandas Time(seconds): 25.217426776885986
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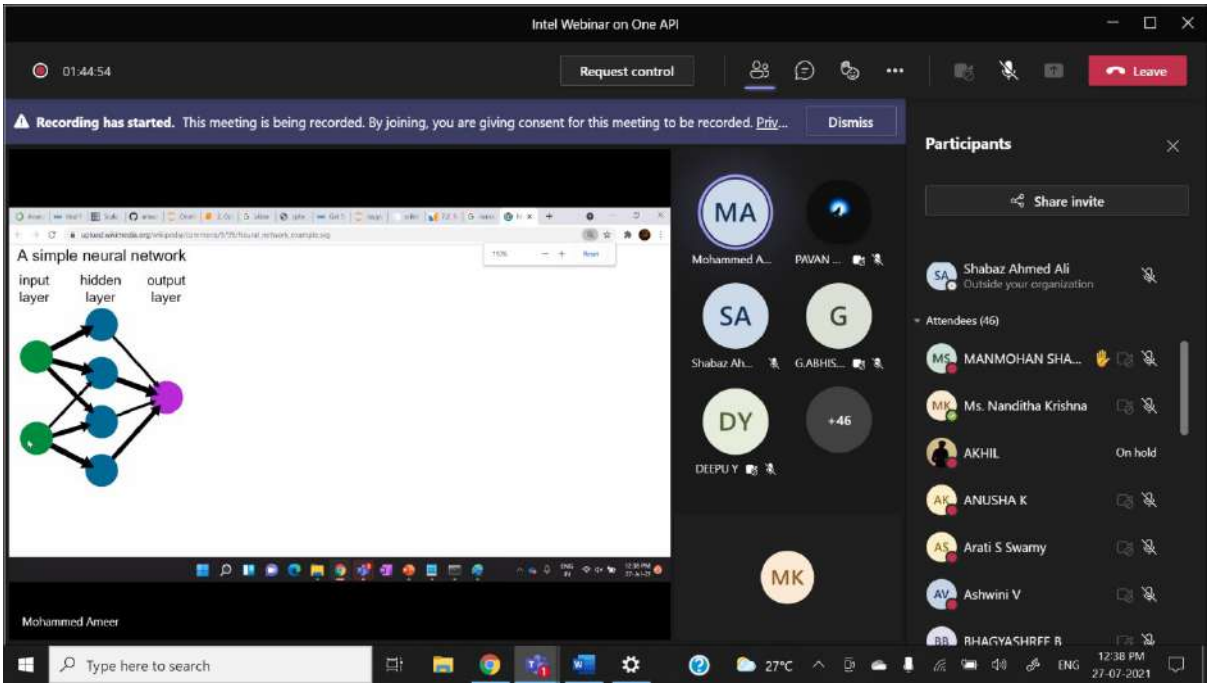
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hidden layer
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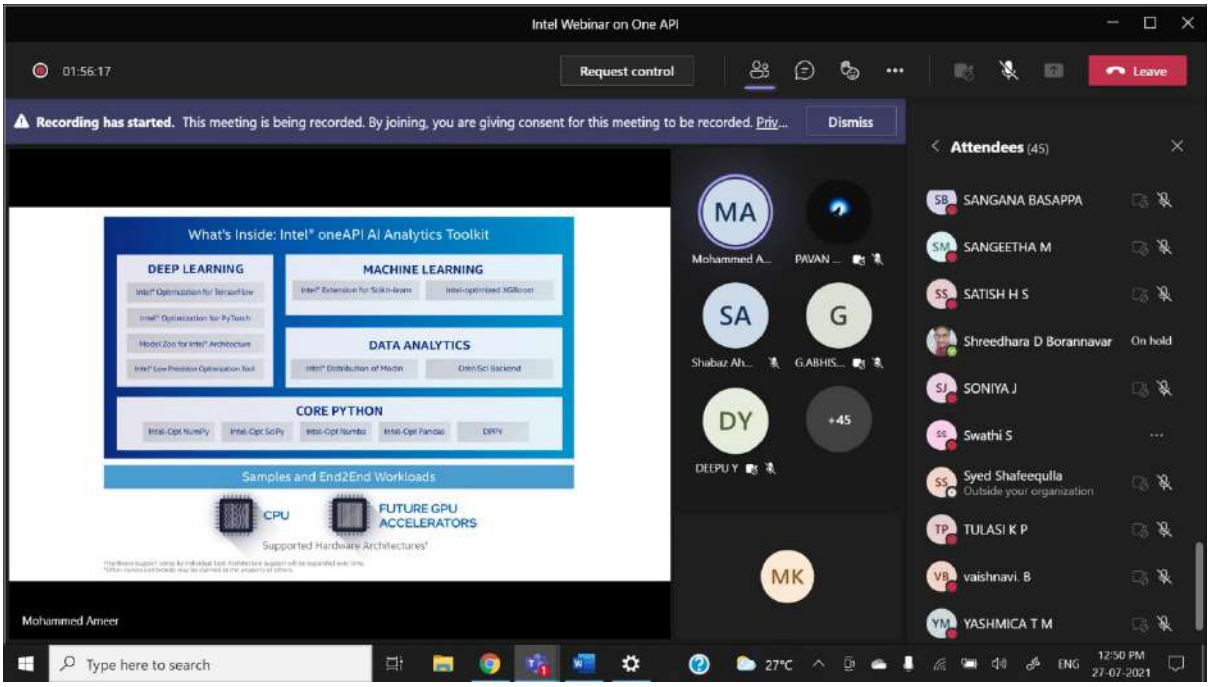
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MACHINE LEARNING
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CORE PYTHON
Samples and End2End Workloads
CPU
FUTURE GPU ACCELERATORS
Supported Hardware Architectures
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