Report on the

Training program on "Python Programming to Solve Scientific and Physical Problems"

Organized by:

Department of Physics
Kalyani Mahavidyalaya

Duration

15.06.2020 to 20.06.2020

Summary of the Training Program

The Department of Physics of Kalyani Mahavidyalaya in collaboration with IQAC has organized a 36-hour-longtraining programme on Python Programming starting from 11th January to 16th January 2021. This workshop was carried out under the guidance of Dr. Runu Das (Principal) and Dr. Manab Kumar Ghosh (Co-ordinator, IQAC, Kalyani Mahavidyalaya). The course coordinator of this workshop was Dr. Subhrangsu Taran (In-charge, Department of Physics) and the course supervisors cum instructors were Dr. Subhrangsu Taran,Mr. Sayak Mukherjee, and Mr. Bhaskar Biswas. Around52 students enrolled in the Workshop from different departments of the college.

Program Objectives and Outcomes

Python is a widely used high-level programming language. Google makes extensive use of Python in its web search system and employs Python's creator. Intel, Cisco, Hewlett-Packard, Seagate, Qualcomm, and IBM use Python for hardware testing. The YouTube video-sharing service is largely written in Python. The design of Python emphasizes code readability, and programmers find its syntax easy to express concepts in fewer lines of code than would be possible in other languages like Java, C, or C++. This language provides constructs that are intended to enable clear programs on a small as well as on a large scale. Python supports multiple programming paradigms, including object-oriented, imperative, and functional programming or procedural styles. It features a dynamic type system and automatic memory management and has a large and comprehensive standard library. Python interpreters are available for installation on many operating systems, allowing Python code execution on a wide variety of systems.

This course aimed to provide a basic understanding of the Python programming language. The course was designed in such a way that the students could read and write codes of their own by the end of the course. The basics that were covered during the course included installation, variables and data types, lists, dictionaries, loops, functions, etc. Apart from that the course also included various computational methods to solve scientific and physical problems such as Newton Raphson method, Euler method, Simpson 1/3 rule, Runge-Kutta method, etc. All the coding was done in the IDLE platform which is an integrated development environment for Python. It includes editing, interactive testing, debugging, and introspection features. Conclusively it is desirable to use Python as the principal teaching language as it is free from both source code and cost perspective. It is also trivial to install on a Windows PC and is flexible as it allows both traditional procedural programming and modern object-oriented

programming. In the end quicker to learn and in combination with its many libraries, this offers the possibility of more rapid student development.

Program Layout
Mode: Online

DAY 1	
Time	Theme
10.00-11.15 am	Registration and Inaugural Session/Opening Remarks
11.15-11.30 am	Break
11.30-12.45 am	Getting Started (Introduction & Installation)
12.45-1.30 pm	Break
1.30-2.45 pm	Variables and Simple data types – I
2.45-3.00 pm	Break
3.00-4.15 pm	Variables and Simple data types – II

DAY 2	
Time	Theme
10.00-11.15 am	Computational Numerical Methods – I (Newton Raphson Method)
11.15-11.30 am	Break
11.30-12.45 am	Computational Numerical Methods – II (Newton Raphson Method)
12.45-1.30 pm	Break
1.30-2.45 pm	Introducing Lists
2.45-3.00 pm	Break
3.00-4.15 pm	Working with Lists

DAY 3	
Time	Theme
10.00-11.15 am	Computational Numerical Methods – III (Trapezoidal and Simpson Rule)
11.15-11.30 am	Break
11.30-12.45 am	Computational Numerical Methods – IV (Euler and Runge Kutta Method)
12.45-1.30 pm	Break
1.30-2.45 pm	IF Statements
2.45-3.00 pm	Break
3.00-4.15 pm	Dictionaries

DAY 4

Time	Theme
10.00-11.15 am	Computational Numerical Methods – V (Euler and Runge Kutta Method)
11.15-11.30 am	Break
11.30-12.45 am	Computational Numerical Methods – VI (Solution of linear system of Equation)
12.45-1.30 pm	Break
1.30-2.45 pm	User Input and While Loops
2.45-3.00 pm	Break

DAY 5	
Time	Theme
10.00-11.15 am	Computational Numerical Methods – VII (2nd Order ODE – Fixed Difference Method)
11.15-11.30 am	Break
11.30-12.45 am	Computational Numerical Methods – VIII (2nd Order ODE – Fixed Difference Method)
12.45-1.30 pm	Break
1.30-2.45 pm	Functions
2.45-3.00 pm	Break
3.00-4.15 pm	Practical

DAY 6	
Time	Theme
10.00-11.15 am	PRACTICAL
11.15-11.30 am	Break
11.30-12.45 am	PRACTICAL
12.45-1.30 pm	Break
1.30-2.45 pm	PRACTICAL
2.45-3.00 pm	Break
3.00-4.15 pm	PRACTICAL

Kalyani Mahavidyalaya
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Kalyani, Nadia, Pin – 741235

TRAINING PROGRAM ON
'PYTHON PROGRAMMING TO SOLVE SCIENTIFIC AND PHYSICAL PROBLEMS'

Link for registration:
https://docs.google.com/forms/d/e/1FAIpQLScVcNLbj9YiqjZKoMZtzSJ8Yt16pIQM89D2IH3JrwgnItvp5g/viewform

From 15th June 2020 to 20th June 2020
Registration fee: NIL
Certificate will be provided to each participant after completion of the course

Register on or before 31.05.2020

Helpdesk Number: 9830738067
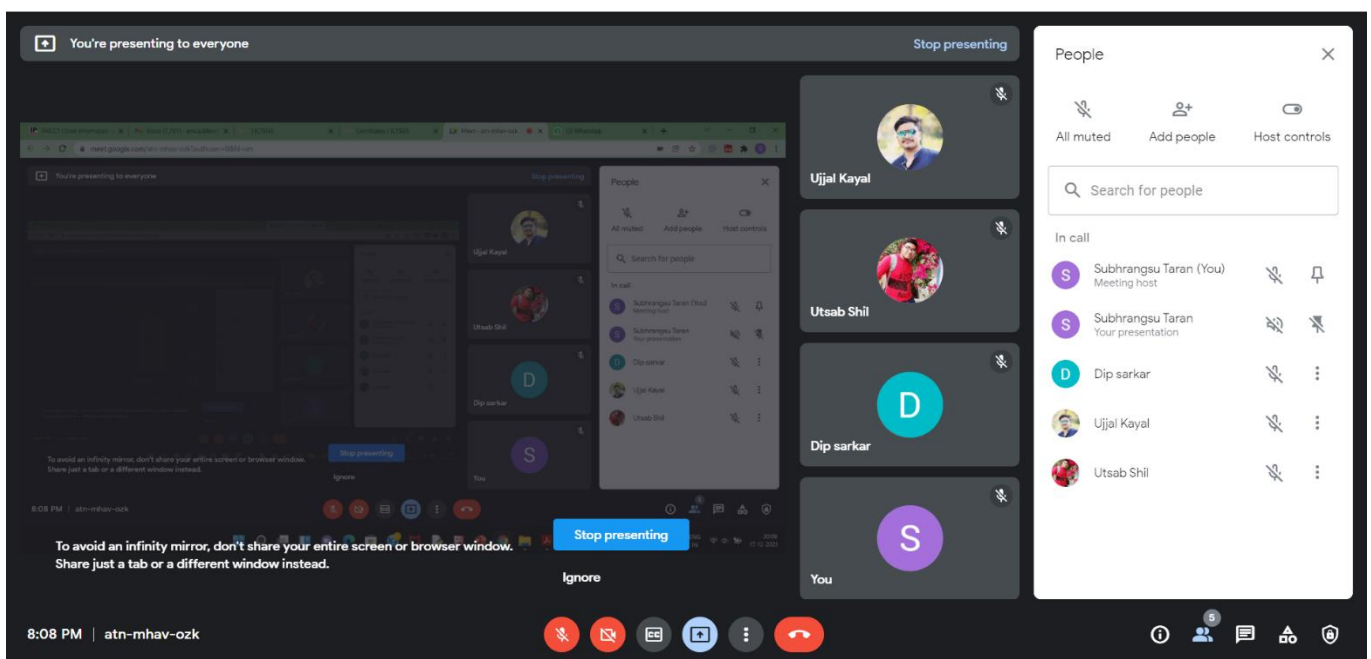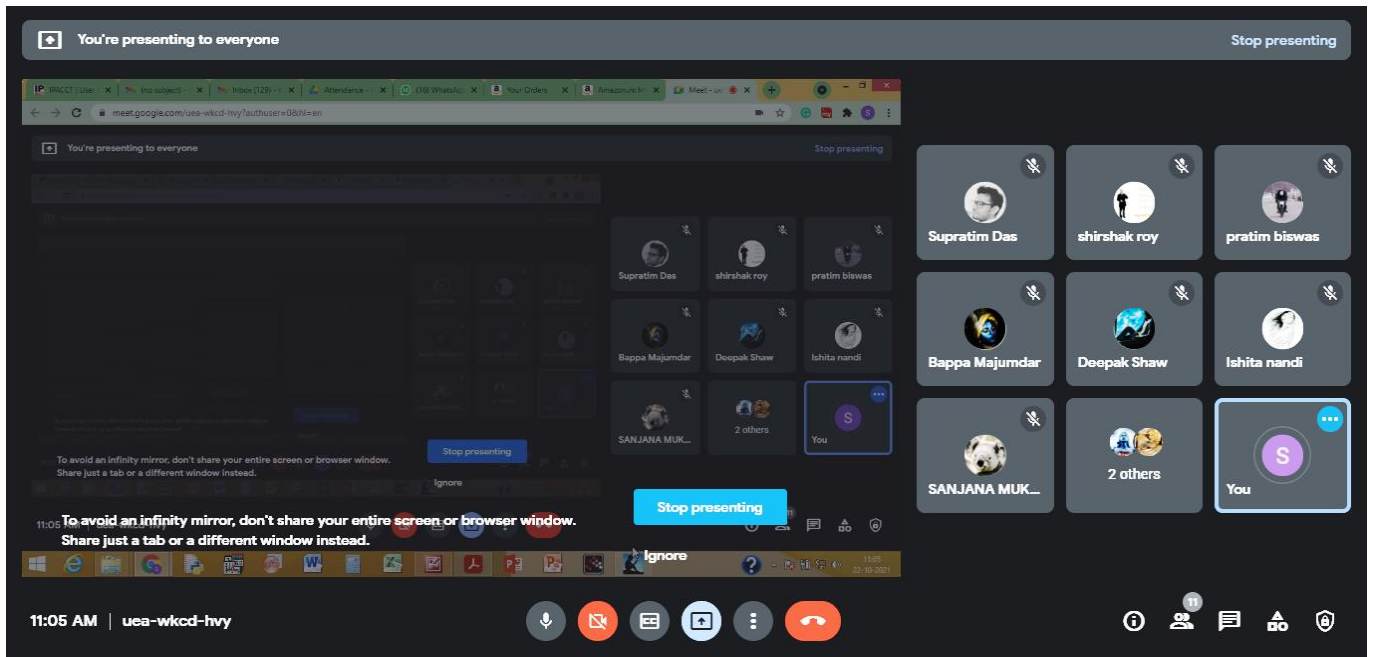
List of participants

Sl No.	Name	Name Of The Department	Registration No.
1	Anindita Roy	Mathematics	018849
2	Archita Das	Mathematics	018850
3	Bidisha Sarkar	Mathematics	018851
4	Debasmita Mandal	Mathematics	018852
5	Dipti Sarkar	Mathematics	018853
6	Gargi Biswas	Mathematics	018854
7	Ipsita Paul	Mathematics	018855
8	Jasonnita Das	Mathematics	018856
9	Jaya Mondal	Mathematics	018857
10	Joyita Debnath	Mathematics	018858
11	Kankana Mallick	Mathematics	018859
12	Komal Yadav	Mathematics	018860
13	Monishka Singh	Mathematics	018861
14	Nabamita Paul	Mathematics	018862
15	Riya Mondal	Mathematics	018864
16	Samrajny Das	Mathematics	018865
17	Sitara Soha Ali	Mathematics	018866
18	Sneha Sutradhar	Mathematics	018867
19	Soumili Biswas	Mathematics	018868
20	Suruti Shaw	Mathematics	018869
21	Akash Das	Mathematics	018871
22	Anal Mondal	Mathematics	018872
23	Ankur Paul	Mathematics	018873
24	Arindam Das	Mathematics	018874
25	Arnab Biswas	Mathematics	018875

26	Arup Dey	Mathematics	018876
27	Asif Al Mamun	Mathematics	018878
28	Avik Karmakar	Mathematics	018880
29	Bikram Sarkar	Mathematics	018881
30	Bishal Mohanta	Mathematics	018882
31	Biswarup Sikder	Mathematics	018883
32	Chandan Mondal	Mathematics	018884
33	Dipayan Mandal	Mathematics	018885
34	Gairik Roy	Mathematics	018886
35	Imanul Hasan Mandal	Mathematics	018887
36	Jeet Ghosh	Mathematics	018888
37	Kaife Shaikh	Mathematics	018889
38	Partho Tarafder	Mathematics	018890
39	Pradyut Modak	Mathematics	018891
40	Probir Biswas	Mathematics	018892
41	Prolay Samajdat	Mathematics	018894
42	Debarati Das	Statistics	018951
43	Mouli Pal	Statistics	018952
44	Sneha Nayak	Statistics	018953
45	Anirban Biswas	Statistics	018958
46	Arup Kumar Guin	Statistics	018959
47	Debraj Purkait	Statistics	018960
48	Dipanjan Mondal	Statistics	018961
49	Imon Chatterjee	Statistics	018962
50	Jayanta Ghosh	Statistics	018963
51	Md Alamgir Hossain	Statistics	018964
52	Nabin Sarkar	Statistics	018965

Some of the Glimpses of the Training Program

Kalyani Mahavidyalaya
Kalyani, Nadia

Organised by
Kalyani Mahavidyalaya,
Kalyani, Nadia

Certificate

of Participation

THIS IS TO CERTIFY THAT

Mr/Ms_____

of Department of _____ participated and

successfully completed the training programon **"Python Programming to Solve Scientific and Physical Problems"** held from **15th June 2020 to 20th June 2020** and organized by the **department of Physics**, Kalyani Mahavidyalaya, Kalyani, Nadia.

Dr.Runu Das
Principal.
Kalyani Mahavidyalaya

Shri Indrajit Bandyopadhyay
Coordinator IQAC
Kalyani Mahavidyalaya

Dr. Subhrangsu Taran
In-Charge, Dept. of Physics
& Course Coordinator

Shri Bhaskar Biswas
Course Supervisor