



The Camford International School

ANNUAL LESSON PLAN 2023-2024

GRADE : 12

SUBJECT : INFORMATICS PRACTICES(065)

MONTH	CHAPTER NO. AND NAME	DETAIL CONCEPTS TO BE COVERED	PRACTICALS	AIL/AIP
MARCH	Data Handling using Pandas -I	Introduction to Python libraries- Pandas, Matplotlib. Data structures in Pandas - Series and data frames. Series: Creation of series from dictionary, scalar value; mathematical operations; series attributes, head and tail functions; selection, indexing and slicing.	1. Create a panda's series from a dictionary of values and a ndarray 2. Given a Series, print all the elements that are above the 75th percentile.	
APRIL	Data Visualization	Data Frames: creation of data frames from dictionary of series, list of dictionaries, text/CSV files, display, iteration. Operations on rows and columns: add (insert /append) , select, delete (drop column and row), rename, Head and Tail functions, indexing using labels, Boolean indexing.	3. Create a Data Frame quarterly sales where each row contains the item category, item name, and expenditure. Group the rows by the category and print the total expenditure per	

			category.	
MAY	Data Visualization	Data Visualization : Purpose of plotting, drawing and saving of plots using Matplotlib (line plot) bar graph, histogram).Customizing plots; adding label, title, and legend in plots.	<p>4. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions</p> <p>5. Filter out rows based on different criteria such as duplicate rows.</p> <p>6. Given the school result data, analyses the performance of the students on different parameters, e.g subject wise or class wise.</p> <p>7. For the Data frames created above, analyze, and plot appropriate charts with title and</p>	

			<p>legend.</p> <p>8. Take data of your interest from an open source (e.g. data.gov.in), aggregate and summarize it. Then plot it using different plotting functions of the Matplotlib library.</p>	
JUNE		<p>Bar graph, histogram .Customizing plots; adding label, title, and legend in plots.</p> <p>Project : Take data stored in csv or database file and analyze using Python libraries and generate appropriate charts to visualize. If an organization is maintaining data offline, then create a database using MySQL and store the data in tables</p>	<p>9. Importing and exporting data between pandas and CSV file</p>	<p>Presentation on: CSV/Pandas Weather Report for 30 days J&K vs TN</p>
JULY	Unit 4: Societal Impacts	<p>Digital footprint, net and communication etiquettes, Data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, Free and open source software (FOSS), Cybercrime and cyber laws, hacking, phishing, cyber bullying, overview of Indian IT Act. E-waste: hazards and management. Awareness about health concerns related to the usage of technology.</p>		

<p style="text-align: center;">AUGUST</p>	<p style="text-align: center;">Unit 2: Database Query using SQL</p>	<p>Math functions: POWER (), ROUND (), MOD (). Text functions: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (), LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM (). Date Functions: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME (). Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*). Querying and manipulating data using Group by, Having, Order by.</p>	<ol style="list-style-type: none"> 1. Create a student table with the student id, name, and marks as attributes where the student id is the primary key. 2. Insert the details of a new student in the above table. 3. Delete the details of a student in the above table. 4. Use the select command to get the details of the students with marks more than 80. 5. Find the min, max, sum, and average of the marks in a student marks table. 6. Find the total number of customers from each country in the table (customer ID, customer Name, country) using group by. 7. Write a SQL 	
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			query to order the (student ID, marks) table in descending order of the marks	
SEPTEMBER	Introduction to Computer Networks	Introduction to networks, Types of network: LAN, MAN, WAN. Network Devices: modem, hub, switch, repeater, router, gateway. Network Topologies: Star, Bus, Tree, Mesh. Introduction to Internet, URL, WWW and its applications- Web, email, Chat, VoIP. Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website. Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.		Prezi on : Comparative study of networks, networking techs, devices, transmission medium – J&K vs TamilNadu