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| **BUDHA DAL PUBLIC SCHOOL , PATIALA****PEDAGOGY CLASS -XII (SESSION 2023-24)****SUBJECT- INFORMATICS PRACTICES (065)**  |
| TERM-I |
| Unit No./NAME OF CHAPTER | Experiential Learning |  LAB ACTIVITIES(Perfection Through Practice) | TEACHING AIDS |
|  Unit 1: Data Handling using Pandas -I | Introduction to Python libraries- Pandas, Matplotlib. Data structures in Pandas - Series and Data Frames. Series: Creation of Series from – ndarray, dictionary, scalar value; mathematical operations; Head and Tail functions; Selection, Indexing and Slicing. Data Frames: creation - from dictionary of Series, list of dictionaries, Text/CSV files; display; iteration; Operations on rows and columns: add, select, delete, rename; Head and Tail functions; Indexing using Labels, Boolean Indexing; Importing/Exporting Data between CSV files and Data Frames. Data Visualization Purpose of plotting; drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram Customizing plots: adding label, title, and legend in plots. | Practical of Following topics in Computer Lab1. 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. 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. 4. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions 5. Filter out rows based on different criteria such as duplicate rows. 6. Importing and exporting data between pandas and CSV file 7.Given the school result data, analyses the performance of the students on different parameters, e.g subject wise or class wise. 8. For the Data frames created above, analyze, and plot appropriate charts with title and legend. 9. 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.  | * For Theory Class:- Book and Black Board, Class Projector
* Practical Class:- Lab Projector , Digital Content (Power Point Presentation ), Practical Perform by Student on Computers
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| Unit 2: Database Query using SQL | Explanation of Following Topics in Theory Class1. Math functions
2. Text functions
3. Date Functions
4. Aggregate Functions

  | Practical of Following SQL Commands in Computer LabPOWER (), ROUND (), MOD (). UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (), LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM (). NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME (). MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (\*).  | * For Theory Class:- Book and Black Board, Class Projector
* Practical Class:- Lab Projector , Digital Content (Power Point Presentation ), Practical Perform by Student on Computers
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| SEPTEMBER Revision + Mid Term Exams  |
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| Unit 3: Introduction to Computer Networks | Explanation of Following Topics in Theory ClassIntroduction to networks, Types of network: PAN, 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. | Create an informative presentation based on Introduction to Computer NetworksSub Topics of PowerPoint Presentation :-1. Introduction to networks
2. Types of network
3. Network Topologies
4. Introduction to Internet
5. Website
6. Web Browsers
 | * For Theory Class:- Book and Black Board, Class Projector
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| Unit 4: Societal Impacts | Explanation of Following Topics in Theory ClassDigital 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. | Create an informative presentation based on Societal ImpactsSub Topics of PowerPoint Presentation :-1. Digital footprint
2. plagiarism
3. cyber laws
4. hacking
5. phishing
6. phishing
 | * For Theory Class:- Book and Black Board, Class Projector
* Practical Class:- Lab Projector , Digital Content (Power Point Presentation ), Practical Perform by Student on Computers
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|  FEBURARY :-FINAL EXAMS |