TEACHER'S HANDBOOK

Galaxy of TECHNOLOGY

Books (7)

KEYS

PRIME TIME

PART - 7

Ch-1 (Advanced Features of Excel)

Upskills your intelligence

A. 1. worksheet 2. chart 3. x-axis 4. plot 5. filter

B. 1. F 2. T 3. F 4. F 5. T

C. 1. **Elements of a chart:**

Chart Area: All the area and other objects of a chart are included in the chart area.

Data Series: Data series consists of the bars, slices, lines or additional elements that show the data values.

Legend: Colours, patterns, or symbols assigned to the data series are depicted by legends.

(**Note:** Students can write any three elements of a chart)

2. **Filtering:** Filter temporarily hides some of the data in a table, so you can focus on the data you want to see.

3. **Steps to sort data:**

1. Select the range of cells containing the data to be sorted.

2. On the Data tab, in the sort & filter group, click on the sort option to open the sort dialogue box.

3. From the sort by drop-down list, choose the column which you want to sort.

4. Select the values option from the sort on the drop-down list.

5. From the order drop-down list, choose the order of sorting- largest to smallest option.

6. In the Sort dialogue box, click on the Add Level button to add a new level below the first level.

7. Specify the column name as mentioned in the sheet by drop-down list and order of sorting as A to Z in the Order drop-down list in the new level.

4. Difference between sorting and filtering:

Sorting	Filtering
1. Sorting helps you organise data.	1. Filtering temporarily hides some of the data in the table.
2. It helps in sorting text in alphabetical, numerical, oldest to newest or newest to oldest order.	2. It does not help in ordering a text.
3. Sorting does not enable the hiding feature.	3. It enables you to focus on the data of your choice.

5. **Steps to change the title of a chart:**

1. Click on the chart title.
2. Right-click on the chart title placeholder; the pop-up menu will appear.
3. From the pop-up menu, select the edit text option.
4. Add the new chart title and press the ESC key.

Critical thinking: Ask students to do it by themselves.

Team work: Ask students to do it by themselves.

Ch-2 (More on Python)

Upskills your intelligence

A. 1. syntax 2. syntax 3. red 4. underscore, alphabet 5. input

B. 1. T 2. F 3. T 4. F 5. T

C. 1. Syntax is the collection of guidelines that must be followed while writing programming statements.

2. Variables are places in a computer's memory where values can be stored. These values are retrieved from memory during processing, where they are subsequently processed to produce output. Each variable has a set of values and distinctive names.

3. Guidelines to be followed while naming variables:

(I). An underscore (_) or an alphabet can begin a variable name.

(ii). White spaces are used to create variable names.

(iii). The names of variables can be made up of letters, numbers, and underscores.

(iv). A variable name needs to make sense.

4. The input function is used to receive user input. The input function is used to collect values from users and save them in a variable.

5. **Keywords in python:**

False, class, return, true, def, for, lambada, nonlocal, while, assert, break, etc.

Critical thinking: Ask students to do it by themselves.

Team work: Ask students to do it by themselves.

Ch-3 (Big Data)

Upskills your intelligence

A. 1. trail 2. 3.3 3. Healthcare 4. Data Science 5. Explore

B. 1. F 2. T 3. F 4. T 5. F

C. 1. Big data is a term which is used to denote a collection of large and complex datasets which require expert algorithms and high-end computing devices to process data in real time.

2. **Three v's of Big data:**

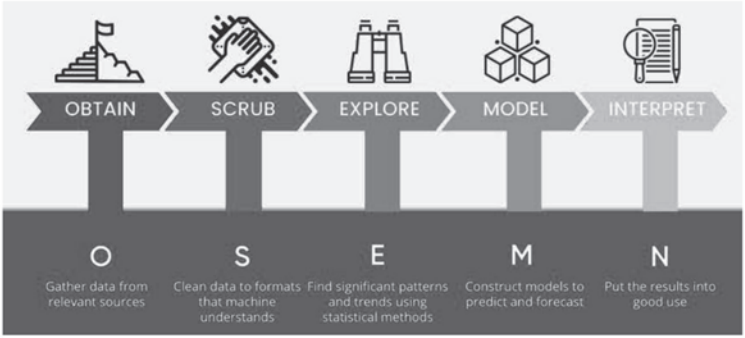
Volume: Mobile users use a variety of apps, which creates a large volume of data. This data consists of their choices and searches related to different types of products, prices, and brand preferences.

Velocity: The generation of data at a high speed is called data velocity. It doesn't only generate data but also involves accessing and processing data at a higher speed.

Variety: The various sorts of data produced by users are referred to as variety. Both structured and unstructured data can be produced.

3. The amount of data shared worldwide using some popular apps in a day:
   (i) Google: 3.3 billion search queries in a day.
   (ii) Facebook: 1.82 billion people log on to Facebook daily.
   (iii) Youtube: 30 Million videos are watched on youtube daily.
   (iv) Snapchat: 4 billion snaps are shared on Snapchat every day.
4. Data science is a multidisciplinary area that uses mathematical, scientific, and statistical techniques to generate and extract data.

The data science life cycle



5. Companies are able to secure credit card transactions with the help of big data. It is used by credit card companies to track transactions. Credit card companies have access to location and transaction information from all around the world and can easily detect any transaction fraud.

Critical thinking: Ask students to do it by themselves.

Team work: Ask students to do it by themselves.

Ch-4 (Machine Learning)

Upskills your intelligence

A. 1. human 2. software 3. statistical 4. Labelling 5. Supervised

B. 1. Environment 2. Adaptation of an animal
3. Pictures labelled in the computer 4. Digital footprint 5. Statistics

C. 1. Machine learning refers to the evolution of software used to carry out artificial intelligence-related tasks.
2. The disciplines of machine learning are as follows:
   (i) Statistics (ii) Psychological models (iii) Evolutionary models
3. Machine learning is important to improve the ability of a machine to assist people more effectively in different tasks.
4. Types of machine learning:
   (i) Supervised learning (ii) Unsupervised learning
   (iii) Reinforcement learning

5. Difference between supervised and unsupervised learning:

Supervised learning	Unsupervised learning
1. Supervised learning refers to understanding, learning, and adapting with proper guidance.	1. Unsupervised learning refers to understanding, learning, and adapting without any guidance.
2. Labelling of data is the first step, after which you train the computer to recognise various sets of labels with the aid of algorithms.	2. The computer must determine the most accurate way to carry out a specific task.
3. It is achieved using the data that we have collected.	3. The machine receives input data and must look for hidden patterns in order to anticipate the output.

Critical thinking: Ask students to do it by themselves.

Team work: Ask students to do it by themselves.

Ch-5 (Threats, Crimes and Safety in Computing)

Upskills your intelligence

A. 1. cyber safety 2. antivirus 3. Phishing 4. Trojans 5. Juice Jacking

B. 1. Cyberbullying 2. Cyber Stalking 3. Impersonation
4. Flaming 5. Information Technology Act, 2000

C. 1. Staying safe and secure online is considered cyber safety. This is accomplished by making sure that online-available personal data is secure and safe.

2. For safe browsing on the internet, we must do the following:

(i) We should update programmes like antivirus software and reset security settings.

(ii) Use secure and distinctive passwords.

(iii) Only download software and tools from reliable websites.

(iv) We should be cautious before clicking on links in emails, chats, and social media postings.

3. **Types of cyber threats:**

Phishing: It is the sending of emails to trick a recipient into handing over money or sensitive personal information like their bank account details or a username and password.

Flaming: It refers to sending hatred or rage messages electronically.

4. **Ill effects of cyberbullying:**

(i) Anxious thoughts (ii) Depression (iii) Being absent from class
(iv) Experiencing loneliness (v) lack of confidence

5. Tips to avoid bad gaming habits in children:

(i) Playing outdoor games with friends.

(ii) Taking a family trip to historical or cultural sites.

(iii) Putting yourself on a regular digital detox.

(iv) Enhancing emotional intelligence and self-awareness.

(v) Engaging in charitable work or volunteering activities.

Critical thinking: Ask students to do it by themselves.

Team work: Ask students to do it by themselves.

Ch-6 (More on HTML)

Upskills your intelligence

A. 1. <tr> 2. Table 3. Number
4. Pixel 5. Colspan 6. Centred

B. 1. <dl> 2. Table tag's border attribute 3. <tr>
4. Rowspan 5. Link

C. 1. Attributes of table tag:
(i) Border (ii) Height and width attribute (iii) Cellpadding
(iv) Colspan (v) Rowspan selector

2. A border can be specified using the table tag's border attribute. A number is required for the border attribute.

3. Cellpadding is the appropriate attribute if you want to modify where cell data is placed in relation to the borders of the cell. Sometimes we wish to position the cell data that it is farther from the cell borders for better clarity. This improves the readability of the table's content.

4. The function of <th> tag is to define a cell header for an HTML table. The cell header is boldly displayed and typically centred.

5. Both <tr> tag and <td> tag are different from each other. The <tr> tag in HTML can be used to construct a table's row while a table's cells are created using the <td> tag.

Critical thinking: Ask students to do it by themselves.

Team work: Ask students to do it by themselves.

Ch-7 (Cascading Style Sheets)

Upskills your intelligence

A. 1. CSS 2. Cascading Style Sheet 3. Once 4. Syntax 5. HTML

B. 1. CSS Font-face 2. Selector 3. RGB
4. CSS Font Face family name 5. Background-image: url("image name");

C. 1. As CSS stylesheet code needs to be written once, it means the actual code a browser has to work on is less. The page will download more quickly if there is less code.

2. Like all other languages, CSS has a syntax of its own. The syntax is a set of guidelines used when writing code in a certain language.

Example:

H1{color: yellow; font-size: 11 px;}

3. A CSS code consists of three important elements- selector, +the help of CSS Font, and the text's font style can be altered. In CSS, changing the font style can be done in one of three different ways.

(i) By only entering a colour's name as a value.

(ii) You can utilise predetermined hexadecimal colour values.

(iii) Use the RGB colour code.

5. There are two types of font-family names in CSS which are defined below:

Family name: It is the name of a family of fonts that includes "Arial," "Times," etc.

Generic- family: It is the name of the generic family that include five categories, which are "serif," "sans-serif," "cursive," "fantasy," and "monospace".

Critical thinking: Ask students to do it by themselves.

Team work: Ask students to do it by themselves.

Ch-8 (Conditional Statement in Python)

Upskills your intelligence

A. 1. user ID, password 2. Control 3. cause, effect 4. If statement 5. If

B. 1. F 2. F 3. T 4. T 5. T

C. 1. Syntax of if else statement:

if<condition>

Statement(s)

else:

Statement(s)

2. Working of the if statement:

(i) The simple If statement tests a condition and if it is true, performs some steps, otherwise it does nothing.

(ii) If the condition is true, it performs the result, but if it is not true, no error message will be displayed to the user.

3. Syntax:

if<condition1>

Statement(s)

elif<condition2>:

Statement(s)

else:

Statement(s)

4. Ask students to do it by themselves.

5. The second block is an else block. This block contains the statements which will be executed if the value of the test expression becomes false

Family name: It is the name of a family of fonts that includes "Arial," "Times," etc.

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Critical thinking: Ask students to do it by themselves.

Team work: Ask students to do it by themselves.

Ch-9 (Computer Virus)

Upskills your intelligence

A. 1. virus 2. humans 3. virus 4. a worm 5. Nimda

B. 1. Antivirus 2. Mcafee 3. Slammer

4. Trojan Horse 5. Zero Access, Zeus, Beast

C. 1. Computer viruses are small software applications that are created with the intention of spreading from one computer to another and interfering with computer functions. A computer virus can damage important data from your computer, and also harm the computer system.

2. Signs of being infected by a virus
   - Your computer begins to operate more slowly than usual.
   - Your PC frequently stops.
   - Application programmes begin acting strangely or can abruptly shut down.
   - You are unable to access your disc drives or data.
   - The computer becomes unresponsive or hangs up.
   - Shortcuts can be created for files and directories, and file sizes can alter.

3. A Trojan horse is a program downloaded and installed on a computer that appears harmless, but is, in fact, malicious. The user is usually tricked into opening them because they appear to be genuine software or files. It usually spreads with email attachments and removable hardware devices.

4. Computer viruses are frequently transmitted by attachments in email or instant message conversations, as well as through portable storage devices like pen drives when they are connected to the computer.

   When you download anything from the internet, viruses can be concealed as attachments of amusing photos, greeting cards, or audio and video files.

5.
   - A computer virus might corrupt or delete data on your computer.
   - It can use your email program to spread itself to other computers.
   - It can even erase everything on your hard disk.
   - Viruses can harm the computer by destroying the files and finally crashing the system.

Critical thinking: Ask students to do it by themselves.

Team work: Ask students to do it by themselves.