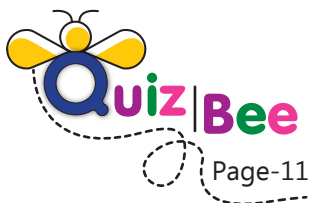## 1. Number System

Quiz Bee
Page-11

11010

ASSESS YOURSELF

1. a. (ii)   b. (i)   c. (iii)   d. (ii)   e. (ii)
   f. (i)

2. a. bit   b. ON   c. base-2 system   d. 12   e. binary

3. a. Byte   b. Base-10 system   c. Hexadecimal Number System

4. a. A number system made up of eight digits from **0** to **7**, is known as the **octal number system.** When the octal number system is used, every number is formed using **0,1,2,3,4,5,6** and **7.** The base of the octal number system is 8. It is also known as the **base-8** system. Each positioning number represents the power of base 8.

   b. A number system is a way to express quantities used for counting, comparing amounts, performing calculations and representing values. A computer represents all kinds of data and information like text, numbers, audio and video in binary form.

   c. The total number of digits used in a number system is called its **base** or **radix**.

   d. The smallest piece of data that can be recognised and used by the computer is known as the **bit** or **binary digit**. A **bit** is a single binary value i.e., **1** or **0.** A computer is an electronic device which has two states: **On** and **Off**. These two states of the computer are represented by two digits: **1** and **0**. Here, **1** represents the electronic state **On**, and **0** represents the electronic state **Off**.

e. To convert a binary number into a decimal number, follow the given steps:

① Multiply each digit of the binary number by 2 to the power of n, where n is the position of the digit starting from 0 on the right.

② Add the result.

Example:

Convert $(101001)_2$ to decimal number.

$= (1 \times 2^5) + (0 \times 2^4) + (1 \times 2^3) + (0 \times 2^2) + (0 \times 2^1) + (1 \times 2^0)$

Sum of the products = 32 + 0 + 8 + 0 + 0 + 1 = 41

Therefore, $(101001)_2 = (41)_{10}$

f. The rules to subtract two binary numbers are:

X	Y	X – Y
0	0	0 – 0 = 0
0	1	0 – 1 = 1 (borrow 1, so that 10 – 1 = 1)
1	0	1 – 0 = 1
1	1	1 – 1 = 0

5. a.
   i. 5
   ii. 11111010
   iii. 43
   iv. 187
   b. i. 011001
   ii. 01101

6. Do yourself

7. $(256)_8 \rightarrow$ This number system belongs to octal number system.

   $(2AF)_{16} \rightarrow$ This number system belongs to hexa decimal number system.

   He can tell by observing the base of the number system.
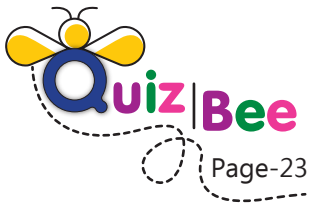
{C⊙DING Z⊙NΞ}   =   COding Zone   []

1. 999876 and 100023

2. 25

2. Advanced Features of Excel

Page-23

Custom Sorting means arranging the data either in ascending or descending order as per our requirement with other columns.

ASSESS YOURSELF

1. a. (iii)   b. (i)   c. (ii)   d. (i)   e. (ii)
2. a. Sorting   b. Filter   c. Home   d. SUM()   e. Add level
3. a. The **IF()** function checks a condition to evaluate it as **true** or **false,** and based on the result, suitable actions are performed**.** This function takes three arguments into consideration: the condition, the value to be displayed when the condition is true, and the value to be displayed when the condition evaluates to be false.

    b. To remove filter, follow the given steps:
    1. Click on **Sort & Filter** command.
    2. Select Filter option from the drop-down menu

    c. To apply custom sorting, follow the given steps:
    1. Select a column or range of the data to be sorted.
    2. Click on the **Sort** & **Filter** command.
    3. Select the **Custom Sort** option. A Sort dialog box will open.
    4. Click on the **Add Level** button to add another column to sort.
    5. Click on Then by down arrow in the **Column** section. **Select Name** in this case.
    6. Click **OK**.

    d. To apply conditional formatting to a series of data, follow the given steps:
    1. Select the data and click on the **Conditional Formatting** command.
    2. Select the desired option.
    3. Choose desired fill effect.

e. Excel allows us to see the important data and hiding the rest temporarily data from the set of data. To apply filters, follow the steps given below:

1. Select the data to be filtered and click on the **Sort & Filter** command.
2. Select the **Filter** option.
3. Click on Filter Switch. Here, we see the records of all the girls of the class.
4. Tick the desired checkbox.
5. Click **OK** button

The list appears with the **drop-down controls** or the **Filter switches** on the right side of the column headings.
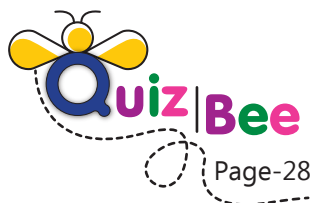
4.

Sorting Data	Filtering Data
i. The physical arrangement of data in ascending or descending order is called sorting of operators.	i. The feature of viewing rows of data suiting a specified selection criterion is called filtering data.
ii. It allows arranging the data either in ascending or descending order.	ii. It allows us to see the important data and hiding the rest temporarily data from the set of data.

{C⊙DING Z⊙NΞ}

b. $125 \div 5 = 25$

c. $36 + 82 + 14 = 132$

3. More on Adobe Animate 2021

Quiz Bee
Page-28

A layer refers to the various levels on which our drawings, animations and objects are placed.

1. a. (iii)   b. (ii)   c. (i)   d. (iii)   e. (ii)
   f. (iii)

2. a. (F)   b. (F)   c. (F)   d. (T)   e. (T)

3. a. A layer refers to the various levels on which our drawings, animations and objects are placed. Layers are transparent sheets, arranged one on top of another in which each layer contains some graphics and effects.

   b. A **mask layer** hides the layers linked to it. It contains objects that are used as masks to hide a selected portion of layers below them.

   c. A **Keyframe** is a frame that carries the animation on it. It is used for critical points in the timeline where our content changes.

   d. A symbol is an object in Adobe Animate. It can be a graphic, a button or a movie clip that can be created and stored in the library. A symbol once created and stored in the library can be reused.

   e. The most basic form of animation is frame by frame animation. Under this type of animation, we need to create the object for each frame to produce an animation. To create a frame-by-frame animation, follow the given steps:

   1 Select the **Text** tool.

   2 Click on the Properties tab. Select the font from the options.

   3 Click on the second frame on the timeline window.

   4 Click on **Insert** tab.

   5 Select **Timeline** option.

   6 Select **Keyframe option.**

   7 Type first letter of a word in the Text box, you want (here we are typing A).

   8 Similarly, keep on adding keyframes for each letter.

   9 Click on the first keyframe in the layer and press the Enter key to play the movie.

4. a.

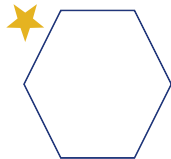| Symbol	Instance
i. A symbol is an object in Adobe Animate.	i. When we drag a symbol from the library to the stage, we create an instance.
ii. It can be a graphic, a button or a movie clip that can be created and stored in the library.	ii. An instance can be different from the parent symbol in colour, size and function.

b.

Motion Tween	Shape Tween
i. Motion Tween refers to the movement of an object or a symbol from one place to another.	i. Shape Tween creates an effect similar to **morphing**, i.e. making it appear as if one shape is transforming into another shape over time.
ii. It can be implemented only on symbols.	ii. We can also tween the location, size and colour of shapes.

{CODING ZONE}
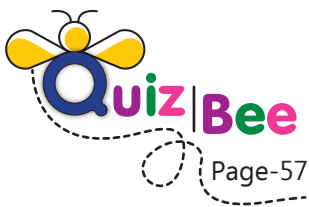
1. 333D
2.
3. 17

Periodic Assessment 1

(Based on chapters 1 to 3)

1. a. (iii)　　　　b. (i)　　　　c. (iv)　　　　d. (ii)

2. a. IF(): The **IF()** function checks a condition to evaluate it as **true** or **false,** and based on the result, suitable actions are performed

   b. SUM(): The **SUM()** function calculates the total of a given set of values.

3. a. Editing　　　　b. Filter　　　　c. Sort　　　　d. Conditional Formatting

   e. Ascending

4. Step 1 Create an <u>object</u> on the Stage.

Step 2 Select the <u>object</u> by using the <u>Selection</u> tool.

Step 3 Right-click on the selected object and select <u>Symbol</u> option.

Step 4 Type the <u>name of your symbol</u>.

Step 5 Select <u>the Graphic</u> by clicking on the Type drop-down arrow.

Step 6 Click on <u>OK</u> button.

4. Lists and Tables in HTML5

border

ASSESS YOURSELF

1. a. (ii)   b. (i)   c. (ii)   d. (i)   e. (ii)
2. a. <LI>   b. style-type   c. <TR>   d. border-collapse
3. a. vertical-align   b. <DD>   c. Nested list   d. <TH>
4. a. The syntax for using the list-style-type property is: **<UL Style = "list-style-type:value">**

b. An item on a list can contain another list. The list within a list is known as a nested list or sub-list.

c. We use padding to add space between the border and the contents of a cell. We can use spacing to increase the border size or distance between cells. Since the table contents are present in <TH> and <TD>, the padding property is declared for these two elements in the style tag.

d. A **description list** is not a list of items. We can use this type of list formatting for defining terms on a web page. It is also called **distributed list.** A description list is enclosed within the **<DL> .... </DL>** tag.

It contains the following tags:

<DL> tag (Definition List): This tag marks the beginning of the definition list.

<DT> tag (Data Term): This tag defines the names or terms.

<DD> tag (Data Definition): This tag describes each item in the description list.

e. The **border-collapse** property in the **<style>** tag is used to create a single border for the table cells.

Property	Value	Description
border-collapse	separate	Applies separate border for each cell.
	collapse	Applies single border for each cell.

Example:

```
<!DOCTYPE html>
<HTML>
<HEAD>
<TITLE>A Simple Table Structure</TITLE>
<style>
Table, TH, TD
{
Border:2px solid black;
Border-collapse:collapse;
}
</style> </HEAD> <BODY> <TABLE>
<CAPTION>STUDENT'S DETAILS</CAPTION>
<TR>
  <TH>ADMISSION</TH>
  <TH>NAME</TH>
  <TH>TOTAL MARKS</TH>
</TR>
<TR>
  <TD>2016/0256</TD>
  <TD>Aadya Kaushal</TD>
  <TD>589</TD>
</TR>
<TR>
  <TD>2017/0865</TD>
  <TD>Shweta Kaushal</TD>
```

```
<TD>545</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

f. Yes, we change the default item marking of an unordered list in HTML by using the list-style-type property.

Example:

```
<!DOCTYPE html>
<HTML>
<HEAD>
<TITLE> List</TITLE></HEAD>
<BODY>
<H2>Types of Pollution:</H2>
<UL style="List-style-Type:Square">
<LI>Air Pollution</LI>
<LI>Water Pollution</LI>
<LI>Noise Pollution</LI>
<LI>Soil Pollution</LI>
</UL>
</BODY>
</HTML>
```

{CODING ZONE}

a.
```
<ol>
<li> Cricket:
  <ul>
  <li> Bat
  <li> Ball
  <li> Helmet
  </ul>
<li> Table Tennis:
  <ul>
```

```
        <li> Table
        <li> Paddles
        <li> Ping pong ball
        </ul>
        </ol>
b.  <ul Style = "list-style-type:circle">
        <li> Monday </li>
        <li> Tuesday </li>
        <li> Wednesday </li>
        <li> Thursday </li>
        <li> Friday </li>
        </ul>
```
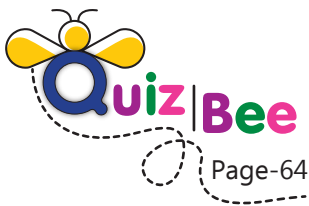
5. Images, Links and Forms in HTML5

Quiz Bee
Page-64

1. ALT is used to display alternative text, if selected image is not displayed.
2. **Interlinking (Local):** The process of linking a particular section of the same web page is called interlinking.

   Intralinking (Global): The process of linking a web page to another web page of the same website or another website is called intralinking.

ASSESS YOURSELF

1. a. (iii)   b. (i)   c. (ii)   d. (iii)   e. (i)
2. a. hyperlink   b. anchor   c. Frames   d. frameset
3. a. A website is a collection of web pages which are interlinked with each other and contains related information. These web pages are linked with the help of a feature of HTML called a hyperlink. A hyperlink is generally an underlined text which when clicked will take you to another web page.

b. Input controls are the elements which are used to accept input from the site-visitors. All the controls have to be filled before submitting the form.

c. The images on a web page can be inserted using the **<IMG>** tag**,** which is an empty tag.

Syntax of <IMG> tag:

<IMG SRC="URL of the image" ALT="alternate text" WIDTH="500" HEIGHT="600">

ALT = "Alternate Text"

WIDTH = "Value of width in pixels"

HEIGHT = "Value of height in pixels"

ALIGN = "Alignment Type"

It has the following attributes:

Attribute	Value	Description
SRC	URL (or location) of the image	SRC stands for source. It specifies the location of the image.
ALT	Text	ALT stands for alternate text. It specifies which alternative text should be displayed, if selected image is not displayed.

d. Border properties can be applied in the following ways:

border-width:value Where value = thin, thick, medium, or numeric values specified in pixels.

border-style:value Where value can be specified as none, hidden, dotted, dashed, solid, double, groove, ridge, inset, or outset

e. Frames(inline) are created using <iframe> tag, which embeds an independent HTML document into the current document.

Syntax:

<iframe src="url" title="description"></iframe>

We use the **src** attribute to specify the URL of the document that contains the inline frame and the **title** attribute to describe the content of the iframe.

Attributes of <iframe> tag are:

Height: Used to control the height of the iframe and its values can be specified in pixels or percentage. (**px** or %).

Width: Used to control the width of the iframe and its values can be specified in pixels or percentage. (**px** or %).

Example:

```
<!DOCTYPE HTML>
<HTML>
<HEAD>
<TITLE> iframes Example </TITLE>
<Style Type = "text/css">
Body {Background-Color:Grey}
</Style>
</HEAD>
<BODY>
<H1 ALIGN = "CENTER"> Example of double spread containing inline frames
  </H1>
<iframe src = "Frame1.html" Height = "200" Width = "200"> </iframe>
<iframe src = "Frame2.html" Height = "200" Width = "200"> </iframe>
</BODY>
</HTML>
```

f. The HTML5 **<audio>** and **<video>** tags allow us to add media to a website. To add media, we are required to set **src** attribute to identify the media source and include the controls attribute so the user can play and pause the media whenever required.

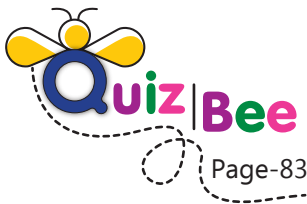   We use **<audio>** tag to embed sound content in an HTML document.

```
<!DOCTYPE HTML>
<HTML>
<HEAD>
<TITLE> Audio </TITLE>
</HEAD>
<BODY>
<H1 ALIGN = "CENTER"> <FONT COLOR = "Red">
Welcome to the Musical World </FONT></H1>
<P ALIGN = "CENTER">
<IMG SRC = "D:\MusicalNote.Jpg">
</P>
<AUDIO SRC = "D:\flute.mp3" AUTOPLAY CONTROLS>
</AUDIO>
</BODY>
</HTML>
```

1 day

6. Introduction to Mobile Apps

Quiz Bee
Page-83

- Easy to use
- Easy to design

ASSESS YOURSELF

1. a. (iii) b. (i) c. (ii) d. (iii) e. (iv)
2. a. (T) b. (T) c. (F) d. (F) e. (T)
3. a. Apps or Applications are software which run on mobile phones, computers, tablets, etc. They are designed to perform a specific task or function to make users more productive and assist them with personal tasks.

   b. Apps that are developed for a specific platform (Operating System) and device are called **Native apps**. A native app developed for iOS, would not be able to work for Android and an app developed for Android or Windows won't work on iOS systems. These apps can be installed from the app stores such as **Google Play** or **Apple's App Store**.

   c. (This question was printed incorrectly in the book, please correct it in your textbook)

   Q. Write any one difference between native app and web app.

   Ans. Apps that are developed for a specific platform (Operating System) and device are called Native apps.

   Web apps are actually web applications that give a user an experience similar to native apps.

   d. Hybrid apps are the apps that are combination of both native and web apps. Similar to the native app, hybrid app is developed for a specific platform and deployed on the app store. You need to install the hybrid app before using it on your mobile. These apps are also developed in software like **HTML5**, **CSS**, **JavaScript**, **JQuery**, etc. Developers use development tools to package the code of the hybrid app with a browser to make it a native app. In this way, hybrid apps become cross-platform which means that the same code can be run on multiple platforms.

e. Social media apps are the medium to connect with the people inside or outside their social circle who share similar personal or professional interests. We can keep track of what is going in the lives of our family and friends. We can share live videos, post images, start the conversation using these apps. Examples of social media apps are: **Facebook**, **LinkedIn**, **Google+**, **Twitter**, etc.

f. Educational apps are specially designed for children to make the teaching-learning process more interactive. Children can learn in play way method by playing educational game apps. Educational apps are also helpful for teachers to organise the classes and various tools required to teach students. Examples of educational apps are: Weather Channel and PhotoMath.

4.

iOS	Android
i. **iOS** is an operating system developed by **Apple**.	i. **Android** is also a type of operating system developed by **Google**.
ii. It is used on **iphones** and **ipads** only.	ii. It is used on **smartphone** and **tablets**.

{CODING ZONE}

a. Monday
b. 13%
c. 4
d. ★★ ★★

Periodic Assessment 2

(Based on chapters 4 to 6)

1.
```
<!DOCTYPE HTML>
<HTML>
<HEAD>
<TITLE> LIST </TITLE>
</HEAD>
<BODY>
<H2> Example of Definition List </H2>
```

```
<HR>
<DL>
<DT> Beverages </DT>
<DD> Hot and Cold Drinks </DD>
<DT> Cappuccino </DT>
<DD> Hot Drinks </DD>
</DL>
</BODY>
</HTML>
```

2. a. We use <video> tag to embed video in an HTML document.

    b. SRC stands for source. It specifies the location of the image.

    c. E-commerce apps allow us to buy or sell products while sitting at home or any other place.

3. a. Google Play Store   b. iOS

    c. Hybrid App   d. Gaming Apps

Test Sheet 1

(Based on chapters 1 to 6)

1. a. (iii)   b. (ii)   c. (ii)   d. (iii)   e. (ii)
    f. (ii)   g. (iv)

2. a. 12   b. ON   c. filter   d. <TR>
    e. border-collapse   f. MP3   g. Frameset

3. a. (F)   b. (T)   c. (T)   d. (T)   e. (F)
    f. (F)

4. a. A number system is a way to express quantities used for counting, comparing amounts, performing calculations and representing values. For example, Decimal number system.

    b. The **IF()** function checks a condition to evaluate it as **true** or **false,** and based on the result, suitable actions are performed**.**

    c. A **mask layer** hides the layers linked to it. It contains objects that are used as masks to hide a selected portion of layers below them.

    d. An item on a list can contain another list. The list within a list is known as a **nested list or sub-list**.

    e. Frames allow us to divide the web page into several independent parts or panes. The frames work as an independent window allowing multiple views at one time.

f. Features:
- User-friendly
- Easy to understand

5. a. The rules to subtract two binary numbers are:

X	Y	X – Y
0	0	0 – 0 = 0
0	1	0 – 1 = 1 (borrow 1, so that 10 – 1 = 1)
1	0	1 – 0 = 1
1	1	1 – 1 = 0

b. To apply conditional formatting to a series of data, follow the given steps:

1. Select the data and click on the Conditional Formatting command.
2. Select the desired option.
3. Choose desired fill effect.

c. The most basic form of animation is frame by frame animation. Under this type of animation, we need to create the object for each frame to produce an animation. To create a frame-by-frame animation, follow the given steps:

1. Select the **Text** tool.
2. Click on the Properties tab. Select the font from the options.
3. Click on the second frame on the timeline window.
4. Click on Insert tab.
5. Select Timeline option.
6. Select **Keyframe option.**
7. Type first letter of a word in the Text box, you want (here we are typing A).
8. Similarly, keep on adding keyframes for each letter.
9. Click on the first keyframe in the layer and press the Enter key to play the movie.

d. Tables are used in HTML to display data in a tabular format. Presenting information in a tabular form makes it easy to understand. To create a table in HTML, we use five basic tags:

1. **<TABLE> tag:** The table is defined with this tag. All other tags are enclosed within the table tag.
2. **<TR> tag:** This tag is defines row of cells, where TR stands for **Table Row**.
3. **<TD> tag:** This tag is defines data cell, where TD stands for **Table Data**.
4. **<TH> tag:** This tag defines heading of each column or row, where TH stands for **Table**

Header. The heading is displayed as bold faced and centre-aligned in all browsers by default.

5. **<CAPTION> tag:** This tag defines the heading of the table. By default, the table caption is centre-aligned.
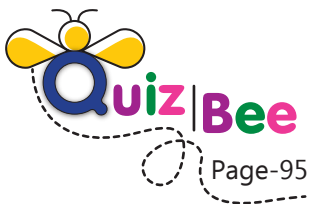
e. The HTML5 **<audio>** and **<video>** tags allow us to add media to a website. To add media, we are required to set **src** attribute to identify the media source and include the controls attribute so the user can play and pause the media whenever required.

We use **<audio>** tag to embed sound content in an HTML document.

```
<!DOCTYPE HTML>
<HTML>
<HEAD>
<TITLE> Audio </TITLE>
</HEAD>
<BODY>
<H1 ALIGN = "CENTER"> <FONT COLOR = "Red">
Welcome to the Musical World </FONT></H1>
<P ALIGN = "CENTER">
<IMG SRC = "D:\MusicalNote.Jpg">
</P>
<AUDIO SRC = "D:\flute.mp3" AUTOPLAY CONTROLS>
</AUDIO>
</BODY>
</HTML>
```

f. Educational apps are specially designed for children to make the teaching-learning process more interactive. Children can learn in play way method by playing educational game apps. Educational apps are also helpful for teachers to organise the classes and various tools required to teach students. Examples of educational apps are: Weather Channel and PhotoMath.

7. Developing Mobile Apps

Quiz Bee
Page-95

This view contains all the components required to design an application.

1. a. (i)   b. (iv)   c. (ii)   d. (i)   e. (i)
2. a. (T)   b. (T)   c. (T)   d. (T)   e. (F)
3. a. On the left, there is a palette pane from where we can select components like buttons, images, and other functions required for our app.

    b. Workspace, Trash and Backpack.

    c. To download any app from Play Store, follow the given steps:
    1. Tap on the **Play Store** Icon on Screen.
    2. Type the name of the app (Duolingo) you want to install in the search box.
    3. Tap on the app you want to install.
    4. Tap on the **Install** option.
    The download and installing process starts. The icon of the app appears on the screen.

    d. In the components pane, Button is displayed as **Button1**, you can rename it. To rename a button, follow the steps given below:
    1. Click on **Rename** button.
    2. Type the new name for the component. In this example. We have given the **Talking Me**.
    3. Click on **OK** button.

    e. To remove an app from our device, follow the given steps:
    1. Tap the **Setting** icon on your mobile screen.
    2. Tap on **Apps** icon.
    3. Tap on **Manage apps** option.
    4. Select the **App's** icon by tapping it.
    5. Tap on **Uninstall** icon.
    The app will be removed from your smart phone.

4.

Design View	Block Editor View
This view contains all the components required to design an application.	This view is the place where we combine blocks to execute an application.

{CODING ZONE}
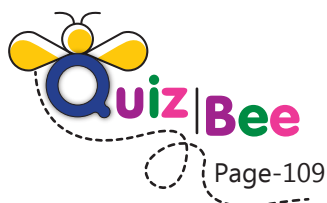
1. b. EGHI   2. a. 24

8. Google Apps

1. Google Drive   2. Google Maps

ASSESS YOURSELF

1. a. (iii)   b. (i)   c. (ii)   d. (iii)
2. a. (T)   b. (F)   c. (T)   d. (F)   e. (F)
3. a. YouTube   b. Google Docs c. Google Drive d. Google Slides e. Map View
4. a. Google has developed a number of web-based applications that are collectively known as Google Workplace. It was formerly known as Google Apps and later G Suite, which is a collection of tools like cloud computing, productivity and collaboration software and apps marketed by Google.

   b. • No extra cost for hardware and software
      • No need to upgrade hardware and software
      • Secure and private Users' collaboration

   c. With the help of Google Contacts, we can easily back up our contacts to the cloud and access our accounts from any device using our Google account. We can easily store, view, edit, organise and merge contacts with this app.

   d. Google apps are based on **cloud computing**. In cloud computing, data is stored and accessed over the Internet rather than from the hard drive of our computer. It is the easiest and most cost effective method of using web-based applications and storing data online.

   e. **Google Slides** is an online version of Microsoft PowerPoint developed by Google in 2006. You can now give presentations online with the help of the Google Slides. **Google Slides** presentations include templates, images, videos, animation, etc. You can also edit the presentation through your smartphones with the help of Google Slides app.

   f. Follow the below steps to open a new document:
      ❶ Click on the **Google apps** button.
      ❷ Click on the **Docs** icon from the drop-down menu. The **Start a new document** page appears.
      ❸ Click on the **Blank** template.

g. When working with Google Sheets, you do not need to worry about saving a spreadsheet. It is saved automatically. You can decide who you want to share your file with and give them edit, comment, or view permissions. You can also protect specific data within your sheet so that those who have access to the sheet can only edit certain cells.

Sharing a File

Perform the following steps to share a spreadsheet:

1 Click on the **Share** button from the top-right corner of the spreadsheet.

2 Enter the email address(es) of the people with whom you want to share the spreadsheet in the box.

3 Click on **Editor** down-arrow.

4 Click on **Editor** option

5 Type a message for the receiver in the **Message** box.

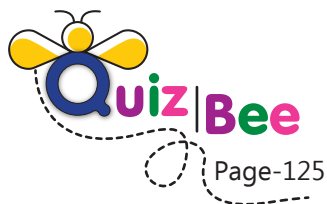6 Click on the **Send** button to share the file.

Protecting Data

Perform the following steps to protect a spreadsheet:

1 Select the **Data** option.

2 Select the **protected sheets and range** option.

3 Click on **Set permissions** button.

{CODING ZONE}

1. a. Hello-French   b. Thanks-Spanish

   c. What's your name? -Italian   d. I love the sunset – German

2. Do yourself.

9. Cyber Security

Quiz Bee
Page-125

1. Digital Footprints
2. Phishing

1. a. (iii)   b. (ii)   c. (i)   d. (iii)
2. a. Plagiarism   b. Hacker   c. Phishing   d. Computer Ethics
3. a. **Computer ethics** are rules that govern our actions when we use computers and the Internet.

   b. **Hacking** is the act of intruding into a computer system for harmful purposes by identifying the technical weak points of the security system using smart programming solutions.

   c. **Spamming** refers to the act of repeatedly sending unwanted e-mails called spams to a large number of recipients.

   d. **Digital** footprints or digital shadow are the traceable activities that we leave behind after surfing the Internet. All the activities performed by us on the Internet are recorded.

   - All social media activities on **Facebook**, **Twitter**, **Instagram**, **blogs**, etc.
   - Uploaded photos and videos
   - Browsing history
   - E-subscription
   - Personal information
   - Played online games

   Digital footprints are permanent and can be used by law enforcement agencies to find out the details about the offenders.

   e. This law aims to protect data privacy and information security. It validates digital signatures and contracts. According to this act, the owner of a given IP address will be held responsible for the content accessed or distributed through it.

   f. **Software piracy** is the unauthorized copying or stealing of software, movies, music and making these copies available on the Internet. Every software has license. When we buy a software, we become an authorised user of that software.
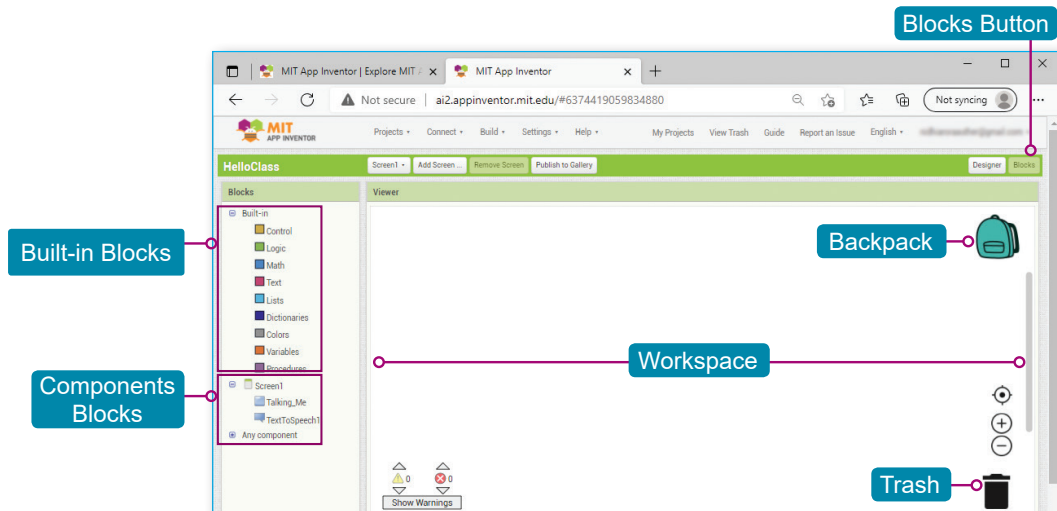
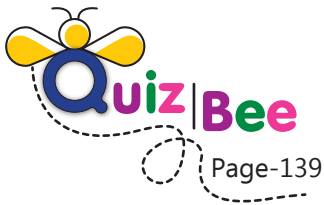## {CODING ZONE}

1. 333D
2. 13%

Periodic Assessment 3

(Based on chapters 7 to 9)

1.

2. a. **Google Photos:** It is used for storing and sharing photos.

   b. **Google Calendar:** It keeps track of our personal appointments and also helps us synchronise our appointments with the rest of our team.

   c. **Google Drive:** It is an online storage tool provided by Google. We can save our files to the Drive and access them anywhere, anytime.

   d. **YouTube:** It is a video sharing application where users can upload their videos, share, comment, watch and like other videos.

3. a. Digital Footprints is a traceable activity that we leave behind after surfing the Internet.

   b. Phishing is an illegal practice of obtaining sensitive information through e-mails.

   c. Computer Ethic is a rule that governs our actions when we use computers and the Internet.

   d. Spamming refers to the act of repeatedly sending unwanted e-mails called spams to a large number of recipients.

10. Tokens and Data Types in Python

AND operator are used to make decision on two conditions in Python.

ASSESS YOURSELF

1. a. (i) b. (i) c. (ii) d. (ii) e. (iii)

2. a. constant b. identifier c. list

   d. (This question was printed incorrectly in the book, please correct it in your textbook)

   Q. Logical errors are also known as _____ errors.

   Ans. semantic

   e. Data type

3. a. Data types are used to define the type of value a data can contain. Each variable in Python is associated with some data type. Each data type requires a different amount of memory and has some specific operations performed on it.

   b. A set of valid characters recognised by a language is called a character set.

   c. Operands are the data involved in the mathematical operation, and may be stored in variables and constants.

   d. Assignment Operators

   e. Errors are faults in a program. Errors prevent a program from executing accurately.

SYNTAX ERRORS

A syntax error will occur when these rules and regulations are violated. For Example:

```
Python 3.9.5 (tags/v3.9.5:0a7dcbd, May 3 2021, 17:27:52) [MSC v. 1928
64 bit (AMD64)] on win32
```

```
Type "help", "copyright", "credits" or "license()" for more information.
>>> Print("Hello")
```

Error: Invalid Syntax Type P in lowercase for the correct result.

```
NameError: name 'Print' is not defined
>>>print "Hello"
```

Error: Invalid Syntax Parentheses missing

```
SyntaxError: Missing parentheses in call to 'print'. Did you mean
print("Hello")?
>>> print("Hello")
```

Error: Invalid Syntax

```
Hello

>>>|
```

LOGICAL ERRORS

As the name suggests, these errors are related to the logic of the program. These errors are also known as semantic errors. They cause the program to behave incorrectly. They are the most difficult errors to fix but they do not usually crash the program. For example:

```
Python 3.9.5 (tags/v3.9.5:0a7dcbd, May 3 2021, 17:27:52) [MSC v. 1928
64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> # Example of Logical Errors in a program
>>> num1=float(input('Enter a number '))
Enter a number?
>>> num2=float(input('Enter another number'))
Enter another number 8
>>>average=num1+num2/2
>>> print(average)
11.0
```

Error: Invalid Logic: The average of 8 and 7 should be 7.5 Put num1 + num2 in braces as (num1+num2) for correct result.

```
>>>|
```

f. These operators are used to assign value to a variable.

Operator	Name	Description	Example (x=2)
=	Assignment	It assigns the value of the operand on the right side to the left side operand.	x = 5
+=	Addition assignment	It adds the right operand to the left operand and assigns the result to left operand. x+=3 is equivalent to x=x+3.	x += 3
−=	Subtraction assignment	It subtracts the right operand from the left operand and assigns the result to left operand. x−=3 is equivalent to x=x−3.	x −= 3

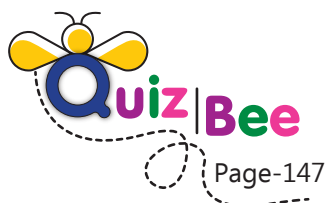|			
*=	Multiplication assignment	It multiplies the right operand with the left operand and assigns the result to left operand. x*=3 is equivalent to x=x*3.	x *= 3
/=	Division assignment	It divides the left operand with the right operand and assigns the result to left operand. x/=3 is equivalent to x=x/3.	x /= 3
%=	Remainder assignment	It takes the modulus of two operands and assigns the result to left operand. x%=3 is equivalent to x=x%3.	x %= 3
//=	Floor division assignment	It performs floor division on operators and assigns the value to the left operand. x//=3 is equivalent to x=x//3.	x //= 3
**=	Exponentiation assignment	It performs exponential (power) calculation on operators and assigns the value to the left operand. x**=3 is equivalent to x=x**3.	x **= 3

4.

Identifier	Keyword
i. Identifiers are the names given to variables, functions and arrays.	i. Keywords are the reserved words are used for some specific purpose.
ii. **Some examples of valid identifiers** are Myvar, myvar_1, Sum_of_the_numbers, PASS and _Sum.	ii. **Some commonly used keywords in Python are given below:** False assert del for in or while None break

5. a. 7   b. 2.0   c. 17.0   d. 76

{CODING ZONE}

a.   2.0
b.   12
c.   10 20 30
d.   4
     True

11. Future of Artificial Intelligence

Quiz Bee
Page-147

Automated transportation will ensure that there are fewer accidents.

ASSESS YOURSELF

1. a. (i)　　　　b. (ii)　　　　c. (iii)　　　　d. (ii)
2. a. (T)　　　　b. (T)　　　　c. (T)　　　　d. (T)
3. a. Traffic Management

   b. No red lights, no parking troubles, sound and air pollution free environments are some of the other important features.

   c. • Automated Transportation
   • Traffic Management

   d. AI enabled homes will let us turn on our lights, play favourite music or change our room temperature, by tapping the app on our smartphones. We can have our coffee ready when we wake up, automatically turn on and off ACs, lights, fans, etc.

{CODING ZONE}

a. 2　　　　b. 1

Periodic Assessment 4

(Based on chapters 10 & 11)

1. a. True　　　b. 100020　　　c. 10 5 20　　　d. True　　　e. 20
2. a. Automated Transportation　　　b. Traffic Management
   c. Smart highway　　　d. Safety and Security
3. a. As the name suggests, these errors are related to the logic of the program. These errors are also known as **semantic errors**. They cause the program to behave incorrectly.

Syntax error will occur when these rules and regulations are violated.

b. When someone tries to break into your home through the door or window, the motion sensor will send notifications to you.

Test Sheet 2

(Based on chapters 7 to 11)

1. a. (ii) b. (i) c. (iii) d. (iii) e. (iii)
    f. (i) g. (ii)

2. a. Google Drive b. Google Docs c. Digital Footprints
    d. National Cyber Security policy, 2013
    e. Constant f. Identifiers

3. a. (T) b. (F) c. (T) d. (F) e. (T)
    f. (T)

4. a. **Components pane:** This pane shows a list of all the components added to the screen in a hierarchical view. (Any one)

    b. • No extra cost for hardware and software
       • No need to upgrade hardware and software
       • Secure and private Users' collaboration

    c. **Hacking** is the act of intruding into a computer system for harmful purposes by identifying the technical weak points of the security system using smart programming solutions.

    d. **Computer ethics** are rules that govern our actions when we use computers and the Internet. Unacceptable actions in the cyber space are punishable by law.

    e. Operand.

5. a. To remove an app from our device, follow the given steps:
    1. Tap the **Setting** icon on your mobile screen.
    2. Tap on **Apps** icon.
    3. Tap on **Manage apps** option.
    4. Select the **App's** icon by tapping it.
    5. Tap on **Uninstall** icon.

    The app will be removed from your smart phone.

    b. When working with Google Sheets, you do not need to worry about saving a spreadsheet. It is saved automatically. You can decide who you want to share your file with and give them edit, comment, or view permissions. You can also protect specific data within your sheet so that those who have access to the sheet can only edit certain cells.

Sharing a File

Perform the following steps to share a spreadsheet:

1. Click on the **Share** button from the top-right corner of the spreadsheet.
2. Enter the email address(es) of the people with whom you want to share the spreadsheet in the box.
3. Click on **Editor** down-arrow.
4. Click on **Editor** option
5. Type a message for the receiver in the **Message** box.
6. Click on the **Send** button to share the file.

Protecting Data

Perform the following steps to protect a spreadsheet:

1. Select the **Data** option.
2. Select the **protected sheets and range** option.
3. Click on **Set permissions** button.

c. This law aims to protect data privacy and information security. It validates digital signatures and contracts. According to this act, the owner of a given IP address will be held responsible for the content accessed or distributed through it.

d. These operators are used to assign value to a variable.

Operator	Name	Description	Example (x=2)
=	Assignment	It assigns the value of the operand on the right side to the left side operand.	x = 5
+=	Addition assignment	It adds the right operand to the left operand and assigns the result to left operand. x+=3 is equivalent to x=x+3.	x += 3
−=	Subtraction assignment	It subtracts the right operand from the left operand and assigns the result to left operand. x−=3 is equivalent to x=x−3.	x −= 3
*=	Multiplication assignment	It multiplies the right operand with the left operand and assigns the result to left operand. x*=3 is equivalent to x=x*3.	x *= 3

/=	Division assignment	It divides the left operand with the right operand and assigns the result to left operand. x/=3 is equivalent to x=x/3.	x /= 3
%=	Remainder assignment	It takes the modulus of two operands and assigns the result to left operand. x%=3 is equivalent to x=x%3.	x %= 3
//=	Floor division assignment	It performs floor division on operators and assigns the value to the left operand. x//=3 is equivalent to x=x//3.	x //= 3
**=	Exponentiation assignment	It performs exponential (power) calculation on operators and assigns the value to the left operand. x**=3 is equivalent to x=x**3.	x **= 3

e. Errors are faults in a program. Errors prevent a program from executing accurately.

SYNTAX ERRORS

A syntax error will occur when these rules and regulations are violated. For Example:

```
Python 3.9.5 (tags/v3.9.5:0a7dcbd, May 3 2021, 17:27:52) [MSC v. 1928
64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> Print("Hello")
```

Error: Invalid Syntax Type P in lowercase for the correct result.

```
NameError: name 'Print' is not defined
>>>print "Hello"
```

Error: Invalid Syntax Parentheses missing

```
SyntaxError: Missing parentheses in call to 'print'. Did you mean
print("Hello")?
>>> print("Hello")
```

Error: Invalid Syntax

```
Hello
>>>|
```

LOGICAL ERRORS

As the name suggests, these errors are related to the logic of the program. These errors are also known as semantic errors. They cause the program to behave incorrectly. They are the most difficult errors to fix but they do not usually crash the program. For example:

```
Python 3.9.5 (tags/v3.9.5:0a7dcbd, May 3 2021, 17:27:52) [MSC v. 1928
64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
```

```
>>> # Example of Logical Errors in a program
>>> num1=float(input('Enter a number '))
Enter a number?
>>> num2=float(input('Enter another number'))
Enter another number 8
>>>average=num1+num2/2
>>> print(average)
```

11.0

Error: Invalid Logic: The average of 8 and 7 should be 7.5 Put num1 + num2 in braces as (num1+num2) for correct result.

```
>>>|
```