

Chapter 1

Networking

DO AND LEARN

1. Fill in the blanks.

- Ans.** (a) A computer network could be wired or wireless.
- (b) By using networking, one computer can be given an Internet connection and others can share the high bandwidth and access the Internet.
- (c) A computer network allows individual users and files to be password protected so that no unauthorised access can take place.
- (d) Computer Network components are the major parts that are needed to install a network both at the office and at home.
- (e) Network Security controls are designed to prevent unauthorised personnel from gaining physical access to the components of a network.

2. Write True (T) or False (F).

- Ans.** (a) Network types can be defined on the basis of network size, their capabilities and the geographical regions they cover. T
- (b) LAN stands for Later Area Network. F
- (c) A Wide Area Network (WAN) is a network that exists over a large geographical area. T
- (d) When you want to share a single Internet connection to multiple computers, you will use a modem. F
- (e) Hub is a device that splits a network connection into multiple computers. T

3. Tick (✓) the correct option.

- Ans.** (a) PAN stands for Personal Area Network.

- (i) Permanent Area Network
 - (ii) Proper Area Network
 - (iii) Permanent Account Number
 - (iv) Personal Area Network**
- (b) **Administrative security** controls consist of security policies and processes that control user behaviour, including how users are authenticated.
- (i) Technical security
 - (ii) Physical security
 - (iii) Administrative security**
 - (iv) Data security
- (c) PAN enables communication among computer devices within the range of 10 metres.
- (i) 30
 - (ii) 20
 - (iii) 10**
 - (iv) 5
- (d) NIC stands for **Network Interface Card**.
- (i) Network Internet Case
 - (ii) Network Interface Card**
 - (iii) Network Internet Card
 - (iv) Network Interface Case
- (e) The **wired** network uses special type of cables to connect computers on a network.
- (i) wired**
 - (ii) wireless
 - (iii) both (i) and (ii)
 - (iv) None of these

4. Answer the following questions.

(a) Write briefly about MAN.

Ans. Metropolitan Area Network (MAN) is similar to LAN but spans an entire city. For example, all branches of an office in a big city are connected to each other through MAN.

Several MANs can be connected over the world through the Internet.

The advantages of MAN include sharing of data and resources, decreased travel cost, etc. The disadvantages of MAN include security problems, high setup cost, etc.

(b) Differentiate between a hub and a switch.

Ans. A hub/switch is a device that splits a network connection among multiple computers. When a computer requests information from a network or a specific computer, it sends the request to the hub through a cable. The hub receives the request and transmits it on the entire network. Each computer on the network should then figure out whether the broadcast data is for it or not. A switch is more expensive than a hub.

(c) Explain any four advantages of a network.

Ans. Advantages of a Network:

- Resource Sharing: All computers in a network can share resources such as printers, fax machines, modems and scanners. There are many times when you need to print some work from different computers connected through networking. In such a case, you need not attach a separate printer with each computer. You can share the same printer connected to all the computers over a network.
 - File Sharing: Networks offer a quick and easy way to share files directly. Instead of using a disk or USB key to carry files from one computer or office to another, you can share files directly using a network.
 - Flexible Access: Networks allow users to access files from computers throughout the network. This means that a user can begin work on a project on one computer and finish it on another. Multiple users can also collaborate on the same project through the network.
 - Cost Effective: Since resources and files can be shared over a network, cost automatically goes down. For example, many popular software products are available for networks at a substantial savings in comparison to buying individually licensed copies for all your computers.
- (d) Mr Nayyar owns a company. His office has different departments that are spread over two adjoining buildings. He wants to connect

computers over all the departments in both the buildings for quick and efficient data transfer. Suggest an economical method of networking to him.

Ans. Mr Nayyar can use a LAN.

(e) Differentiate between PAN and LAN.

Ans. PAN or Personal Area Network enables communication between computer devices within the range of a person covering an area of approximately 10 meters.

LAN or Local Area Network can be used to connect to a larger area as compared to PAN. It can be a group of buildings in the same area or one floor to another in the same building.

COMPUTER TIME

Find out if the computers in your school are connected to any kind of networking. If yes, with the help of your teacher, find out the type of networking, networking devices and cables used. Write the details in your notebook. Also, find out how this equipment is maintained over a long period of time.

Ans. Do it yourself.

Answers of Suggested Class Activities

Ans.

N	A	C	J	W	J	D	C	P	R	X
E	S	N	X	C	S	Z	C	Z	M	S
T	A	K	B	E	H	U	B	E	O	U
W	I	R	E	D	A	E	M	P	D	E
O	D	A	Z	A	R	O	U	T	E	R
R	W	J	C	T	I	J	C	O	M	U
K	I	M	L	A	N	I	V	Z	L	K
I	X	A	I	N	G	P	H	W	U	P
N	J	H	E	Y	N	L	W	D	D	H
G	T	A	N	C	T	D	Z	K	N	K
G	G	L	T	I	A	Z	C	G	B	Q

Answers of Worksheet

- I. 1. network 2. router 3. LAN 4. wireless 5. server
- II. 1. F 2. F 3. T 4. T 5. F
- III. 1. (c) 2. (d) 3. (c) 4. (a) 5. (d)

Chapter 2

More on Photoshop

DO AND LEARN

1. Fill in the blanks.

- Ans.** (a) **Photoshop** is an image editing software that allows users to manipulate, crop, resize, and correct colour on digital photos.
- (b) **Lasso** tool allows you to create free-hand selections.
- (c) If you press the **Shift** and **Selection tool** keys simultaneously, you get an intersection of the old and new selections.
- (d) The **Pencil** tool draws free-form lines with a hard edge.
- (e) The **Heading Brush** tool allows you to fix image imperfections.

2. Write True (T) or False (F).

Ans. (a) Areas outside a selection are protected from change in Photoshop. T

(b) You cannot make a circular selection using the Elliptical Marquee tool. F

(c) For working on different layers, you first need to select them. T

(d) The Auto Eraser parameter is only available for the Brush tool. F

(e) We can work on multiple layers at a time. T

3. Tick (✓) the correct option.

Ans. (a) You will use the **Crop** tool if you only want a part of an image and not the whole image.

(i) Selection

(ii) **Crop**

(iii) Rectangular marquee

(iv) Lasso

(c) What is the role of filters in Photoshop? Explain briefly with the help of an example.

Ans. You can use filters to clean up or retouch your photos, apply special art effects that give your image the appearance of a sketch or create unique transformations using distortions and lighting effects. The filters provided by Photoshop appear in the Filter menu.

(d) Write briefly about the following:

(i) Attributes of the background layer

(ii) Eraser tool

Ans. (i) The following are the attributes of the background layer:

- Stacking order
- Blending mode
- Opacity

To change the above attributes, we first need to convert the background layer into a regular layer.

(ii) The Eraser tool is basically a brush which erases pixels as you drag it across an image. Pixels are erased to transparency or the background colour if the layer is locked. It has three variations: Eraser, Background Eraser and Magic Eraser.

When you select the Eraser tool, you have the following options available in the Options bar:

Brush: Options include the size of the eraser, hardness of the edges and various styles.

Mode: There are three options: Brush (soft edges), Pencil (hard edges) and Block (square brush size).

Opacity: 100% opacity erases pixels completely, 50% is semi-transparent (or coloured), 0% does not erase at all.

Flow: This determines how quickly the erasure is applied by the brush. Lower settings produce a more subtle effect. This option is available only in the Brush mode.

Airbrush: This option allows you to use the eraser as an airbrush available only in the Brush mode.

(e) Which tool helps you soften an image using Photoshop? How do we use the tool?

Ans. The Blur tool can be used to soften images, blur out a background or create a soft tone in a photograph or image. Follow these steps to use this tool:

1. Open an image.
2. Select the Blur tool.
3. Now, select the Brush size, Mode and Strength values from the Options bar.
4. Drag the mouse at the required area to get the desired result.

COMPUTER TIME

Do the following activities using Photoshop:

(a) Create a collage on 'Save Earth' by using different pictures related to the topic. Use appropriate Photoshop tools to complete the task.

Ans. Do it yourself.

(b) Collect pictures of different types of fish and create an image of an aquarium using appropriate tools.

Ans. Do it yourself.

(c) Create a greeting card for your friend on her birthday using Photoshop tools.

Ans. Do it yourself.

(d) Create a poster on the topic 'Save Tigers'. Also, think of a few catchy slogans relevant to the topic and insert them on the poster.

Ans. Do it yourself.

Answers of Suggested Class Activities

A. 1. (c) 2. (d) 3. (c) 4. (b) 5. (d)

Answers of Worksheet

- I. 1. darken 2. erases 3. Healing Brush 4. Smudge 5. soften
- II. 1. T 2. T 3. F 4. F 5. F
- III. 1. Yes, it is possible. Follow these steps to select one or more layers:
1. To select a single layer, just click on that layer.
 2. To select all the layers, click on Select > All layers options from the menu.
 3. You can also select multiple adjacent layers by clicking different layers while pressing the Shift key from the keyboard.
2. Top Layer
3. To change the name of a layer, follow the given steps:
1. In the layers panel, double-click on the name of the layer.
 2. Type the new name that you want to give to the layer.
4. The Spot Healing Brush is the default healing tool in Photoshop and can be used to clone areas from an image and blend the pixels from the sampled area seamlessly with the target area.
5. To convert a layer into background, follow these steps:
1. Select any layer that has to be converted into background from the layers panel.
 2. Now, click on Layers followed by New and select the background from the Layer option.
 3. You will notice that transparent pixels in this layer are converted to the background colour and the layer is at the bottom of the layer stack.

- (b) A link starts at the source anchor.
- (i) **source** (ii) starting
 (iii) destination (iv) target
- (c) Hyperlinks are defined with the HTML <a> tag.
- (i) <d> (ii) <c>
 (iii) (iv) **<a>**
- (d) A/an unvisited link is underlined and blue.
- (i) visited (ii) **unvisited**
 (iii) active (iv) inactive
- (e) The blank target attribute opens the linked document in a new window.
- (i) **new window** (ii) same window
 (iii) parent frame (iv) named frame

4. Answer the following questions.

(a) Name the three accepted formats of a sound file for the <audio> tag.

Ans. Autoplay, controls, loop.

(b) Discuss and write about any three attributes of the <video> tag.

Ans. The following table describes three attributes of the <video> tag:

Attribute	Description
autoplay	It lets the video file to be played immediately after it loads.
controls	It checks what controls are to be displayed with the video player.
height	It is used to give the height of the video player.

(c) Define unvisited, visited and active links.

Ans. Unvisited links are hyperlinks that are not opened yet. They are underlined and blue in colour, by default.

Visited links are hyperlinks of websites that are already viewed. They are underlined and purple in colour.

Active links are the hyperlinks that are currently open or active. They are underlined and red in colour.

- (d) Write the syntax to add a link on a web page with the help of an example.

Ans. Syntax: ` India Gate `

In the above example, the text 'India Gate' is hyperlinked to the web page `www.indiagate.html`. By clicking as this text, a web page with information about India Gate would open.

- (e) With the help of an example, write the code in HTML to create an image link on a web page.

Ans. ``

A thumbnail image of flower is converted into an hyperlink which, when clicked, would open a web page named `flowers.html`.

COMPUTER TIME

Namit has created two web pages, one on 'Plastics are Harmful' and another on 'Different Plastic Materials and their Harmful Effects'. Help Namit to do the following:

- (a) Create a link between the two web pages;
- (b) Insert an appropriate audio on the first web page.
- (c) Insert a picture hyperlink on the second web page to go back to the first web page.
- (d) Write HTML code that Namit would follow to create these web pages.

Ans. Do it yourself.

Answers of Suggested Class Activities

1. (b) 2. (c) 3. (d) 4. (a)

Answers of Worksheet

- I. 1. visited 2. hyperlink 3. loop 4. `<video>` 5. `<audio>`
II. 1. T 2. F 3. F 4. T 5. T

- III. 1. The anchor tag, `<a>`, is used to create a link on a web page. Two attributes of this tag can be: href and link.
2. A local link is a link to the same web site and is specified with a relative URL (without `https://www....`).

Example:



```
example - Notepad
File Edit Format View Help
<!DOCTYPE HTML>
<HTML>
<HEAD>
<TITLE> LINKS</TITLE>
</HEAD>
<BODY>

  <a href="India.jpg">Click to view image of INDIA GATE </a>

</BODY>
</HTML>
```

3. HTML tags can contain one or more attributes. Attributes are added to a tag to provide the browser with more information about how the tag should appear or behave. Attributes consist of a name and a value separated by an equal to (=) sign, with the value surrounded by double quotes. For example, `style="color:black;"`. You can change the default colours
4. An active link is the hyperlink page that is currently open and the default colour of such a link is red. A visited link is the hyperlink that is already visited by the user and the default colour of a visited link is purple.
5. The src attribute of the `<audio>` tag links to the URL of the audio file. The control attribute checks what controls are to be displayed with the audio player.



TESTING TIME – 1

(BASED ON LESSONS 1 TO 3)

1. Fill in the blanks.

- Ans.** (a) All computers in a network can share resources.
(b) PAN stands for Personal Area Network.
(c) Rectangular and Elliptical are type of marquee tool in Photoshop.
(d) In Photoshop, the Clone stamp tool is also called the Rubber Stamp tool.
(e) The href attribute of the <a> tag in HTML specifies the destination web address.

2. Name the following.

- (a) Photoshop tool that draws lines with soft edges.

Ans. Brush tool

- (b) Internet is an example of this type of networking.

Ans. WAN

- (c) A Photoshop tool that allows you to fix image imperfections such as scratches, blemishes, etc.

Ans. Healing Brush tool

- (d) A Photoshop tool that helps in lightening an area of an image.

Ans. Dodge tool

- (e) HTML tag to create hyperlinks.

Ans. <a> tag

3. Match the following.

- Ans.** (a) Communicate over internet • (i) Picture correction tools
 (b) First known networking • (ii) Blog
 (c) Weblog • (iii) Instant Messaging
 (d) Dodge & Burn • (iv) Background Eraser tool
 (e) Background colour of an image • (v) ARPANET

4. From the following grid, find the names of any six Photoshop tools.

Ans.

A	H	E	A	L	I	N	G	C	B
D	T	S	M	U	D	G	E	E	L
O	Y	E	R	A	S	E	R	A	U
D	P	Y	A	Y	R	S	B	Y	R
G	E	C	B	U	P	S	T	E	S
E	A	R	T	Y	V	B	N	O	U
B	R	T	Y	U	I	R	F	D	P
A	N	M	U	P	O	Y	R	H	L
A	R	E	B	J	L	M	P	O	J

Chapter 4

Programming with Python

DO AND LEARN

1. Fill in the blanks.

- Ans.** (a) Python provides us inbuilt functions to read input from the keyboard.
- (b) The input() function first takes the input from the user and then evaluates the expression.
- (c) Decision making statements in programming languages decide the direction of flow of program execution.
- (d) The if statement accepts boolean values.
- (e) Python uses indentation to identify a block.

2. Write True (T) or False (F).

- Ans.** (a) The text or message displayed on the output screen to ask a user to enter input value is mandatory. F
- (b) The if statement is the most simple decision making statement. T
- (c) We can use the else statement with the if statement to execute a block of code when the condition is false. T
- (d) We cannot nest if statements within if statements in Python. F
- (e) As soon as one of the conditions controlling the if is true, the statement associated with that if is executed, and the rest of the ladder is bypassed. T

3. Tick (✓) the correct option:

- Ans.** (a) The keyboard shortcut to execute the active script in Python is F5.
- (i) F2 (ii) F3
- (iii) F4 (iv) **F5**

- (b) In Python, the while loop is used to execute a block of statements repeatedly until a given condition is satisfied.
- (i) **while** (ii) for
 (iii) infinite (iv) pass
- (c) NOP stands for No Operation in Python.
- (i) No Performance (ii) No Printing
 (iii) **No Operation** (iv) No Output
- (d) When you put a break statement in the body of a loop, the loop stops executing, and control shifts to the first statement outside it.
- (i) pass (ii) **break**
 (iii) continue (iv) loop
- (e) Ctrl + T creates a tab in the work area of the Python Editor for the new script.
- (i) loads the selected script in the Python Editor work area
 (ii) closes the active script in the Python Editor work area
 (iii) executes code or a script, depending on whether code is highlighted
 (iv) **creates a tab in the work area of the Python Editor for the new script**

4. Answer the following questions.

(a) What is the use of pass statement in Python?

Ans. When we need a particular loop, class, or function in our program, but don't know what goes in it, we place the pass statement in it. It is a null statement which, when executed, leads to nothing. The interpreter does not ignore it but performs a no operation (NOP).

(b) Name the decision making statements used in Python.

Ans. The decision-making statements in Python are: if, if else, nested if, and if-else-if.

(c) Explain the while loop in Python with an example.

Ans. In Python, the while loop is used to execute a block of statements

repeatedly until a given condition is satisfied. And when the condition becomes false, the line immediately after the loop in the program is executed.

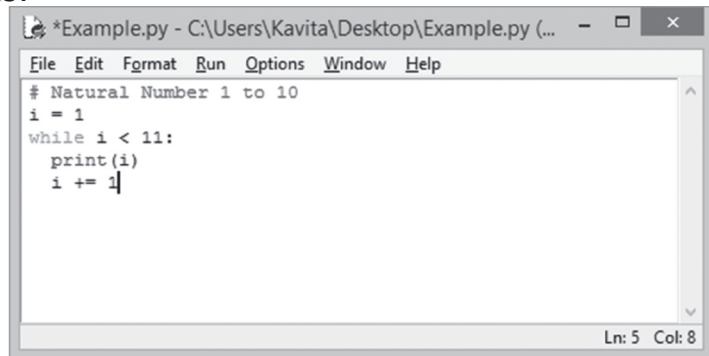
Syntax

while expression:

statement(s)

All the statements indented by the same number of character spaces after a programming construct are considered to be part of a single block of code. Python uses indentation as its method of grouping statements.

Example



```
*Example.py - C:\Users\Kavita\Desktop\Example.py (...)
```

```
File Edit Format Run Options Window Help
```

```
# Natural Number 1 to 10
```

```
i = 1
```

```
while i < 11:
```

```
    print(i)
```

```
    i += 1
```

Ln: 5 Col: 8

(d) Write briefly about the infinite loop.

Ans. Infinite Loop: While using a while loop, if you forget to increment the counter variable in Python, or write a faulty logic, the condition may never become false. In such a case, the loop will run infinitely, and the conditions after the loop will never be executed. To stop execution, press Ctrl+C. However, an infinite loop may actually be useful for cases when a semaphore is needed, or for client/server programming. A semaphore is a variable used solely for synchronisation in accessing shared resources.

(e) How does the input function work in Python?

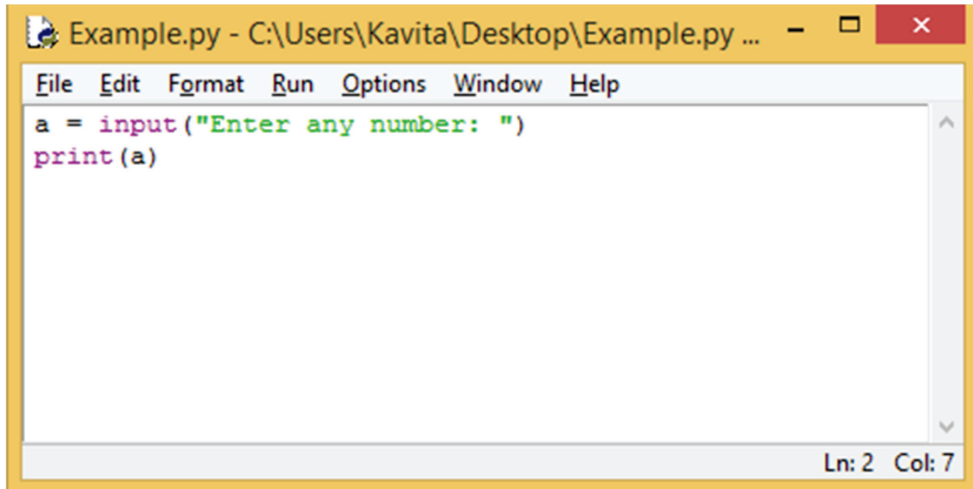
Ans. Break Statement: When you put a break statement in the body of a loop, the loop stops executing, and control shifts to the first statement outside it. You can put it in a for or while loop.

The input() function (Prompt)

The input() function first takes input from the user and then evaluates the

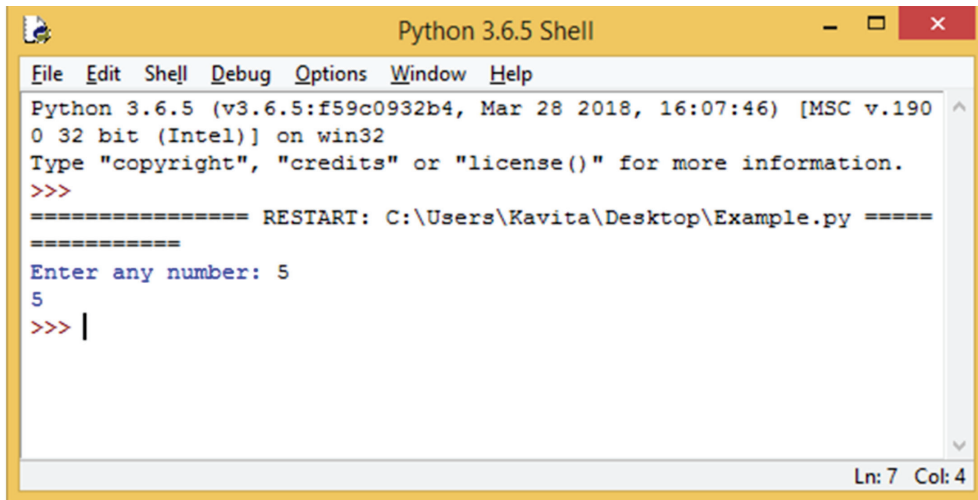
expression, which means Python automatically identifies whether the user entered a string, a number or a list. If the input provided is not correct, then a either syntax error or an exception is raised by Python.

Example



```
File Edit Format Run Options Window Help
a = input("Enter any number: ")
print(a)
Ln: 2 Col: 7
```

Output



```
Python 3.6.5 Shell
File Edit Shell Debug Options Window Help
Python 3.6.5 (v3.6.5:f59c0932b4, Mar 28 2018, 16:07:46) [MSC v.190
0 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\Kavita\Desktop\Example.py =====
Enter any number: 5
5
>>> |
Ln: 7 Col: 4
```

Working of the input() Function

- ⇒ When the input() function starts its execution, the program flow stops until the user gives an input.
- ⇒ The text or message displayed on the output screen to ask a user to enter the input value is optional. This means that the system will wait for the input from the user but if a message is not given in the program, there will be no physical indication of what is being expected from the user.

⇒ Whatever you enter as input, the input function converts it into a string. Even if you enter an integer value, the input() function converts it into a string. You need to convert it into an integer in your code using a particular command.

COMPUTER TIME

1. Execute the following Python codes and note down their outputs in your notebook:

(a) Program to find if the given number is prime or not.

```
# Python program to check if the input number is prime or not
num = 407
# take input from the user
# num = int(input("Enter a number: "))
# prime numbers are greater than 1
if num > 1:
    # check for factors
    for i in range(2, num):
        if (num % i) == 0:
            print(num, "is not a prime number")
            print(i, "times", num // i, "is", num)
            break
    else:
        print(num, "is a prime number")
# if input number is less than
# or equal to 1, it is not prime
else:
    print(num, "is not a prime number")
```

(b) Program to find the factorial of a number entered by the user.

```
# Python program to find the factorial of a number provided by the user.
# change the value for a different result
num = 7
# uncomment to take input from the user
#num = int(input("Enter a number: "))

factorial = 1
# check if the number is negative, positive or zero
if num < 0:
    print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
    print("The factorial of 0 is 1")
else:
    for i in range(1, num + 1):
        factorial = factorial * i
    print("The factorial of", num, "is", factorial)
```

2. Write and execute Python programs for each of the following:

1. Enter two numbers (num 1 and num 2) and decide whether the first number or the second number is bigger. Also, check and display if both the numbers are equal. Repeat this procedure 10 times for a different set of numbers each time.
2. Enter a number and display whether it is even or odd.
3. Let the user enter his/her year of birth and display his/her age at present.

Ans. Do it yourself.

Answers of Suggested Class Activities

1. Python is a popular programming language. It was created by Guido van Rossum, and released in 1991.

Python can be used:

- On a server to create web applications
 - Alongside software to create workflows
 - To connect to database systems
 - To handle big data and perform complex mathematics
 - For software development
2. Decision-making statements available in Python are:
 - if statement
 - if - else statement
 - nested if statement
 - if - else - if statement
 3. There are situations in real life when we need to make some decisions and based on these decisions, we decide what is to be done next. Similar situations arise in programming also where we need to make some decisions, and based on these decisions, we execute the next block of code.
 4. The if() statement is the most simple decision-making statement. It is used to decide whether a certain statement or block of statements will be executed or not, i.e., if a certain condition is true then a block of statements is executed, otherwise not.

Syntax:

if condition:

 # Statements to execute if condition is true

5. While using a while loop, if you forget to increment the counter variable in Python, or write flawed logic, the condition may never become false. In such a case, the loop will run infinitely, and the conditions after the loop will never be executed. This condition is called the infinite loop.

Answers of Worksheet

I. 1. (i) **Output:** Both are not equal;

(ii) **Output:** 2

4

6

8

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

- (b) A **form** is a database object that can be used to create a user interface for a database application.
- (i) query
 - (ii) report
 - (iii) macro
 - (iv) **form**
- (c) **Modules** add functionality to a database.
- (i) **Modules**
 - (ii) Tables
 - (iii) Queries
 - (iv) Reports
- (d) The **Quick Access Toolbar** is a toolbar adjacent to the Ribbon that allows one-click access to various commands.
- (i) Status toolbar
 - (ii) **Quick Access Toolbar**
 - (iii) Navigation Pane
 - (iv) Backstage view
- (e) The size of Short Text data type is **255 characters**.
- (i) 2 GB
 - (ii) 1 bit
 - (iii) **255 characters**
 - (iv) 4 bytes

4. Answer the following questions.

- (a) List any three advantages and three disadvantages of a database.

Advantages:

- Ans.** 1. **Sharing of Data:** In a database, users can share the data among themselves. There are various levels of authorisation (for example, password) to access the data, and the data can only be shared based on the correct authorisation entered by the users. Many remote users can also access the database simultaneously and share the data among themselves.
2. **Data Integrity:** Data integrity means that the data is accurate and consistent in the database. Data integrity is very important as big organisations are completely dependent upon database systems. Any error in the data can cause a serious disruption in the working of the organisation. So it is necessary to ensure that the data is correct and consistent in all the databases and for all the users.
3. **Data Security and Privacy:** Data security is a vital concept in a database. Only authorised users should be allowed to access

the database and their identity should be authenticated using a username and password. There are levels of database access and a user can only view the data he/she is allowed to.

Disadvantages:

- 1. Increased costs:** One of the disadvantages of a DBMS is that they require sophisticated hardware and software and highly skilled personnel. The cost of maintaining the hardware, software, and personnel required to operate and manage a database system can be substantial. Training, licensing and regulation compliance costs are often overlooked when database systems are implemented.
- 2. Management complexity:** Database systems interface with many different technologies and have a significant impact on an organisation's resources and culture. The changes introduced by the adoption of a database system must be properly managed to ensure that it helps advance the organisation's objectives.
- 3. Maintaining efficiency:** To maximise the efficiency of the database system, you must keep your system updated. Therefore, you must perform frequent updates and apply the latest patches and security measures to all components.

(b) Name the tasks that can be performed using a DBMS.

Ans. Data Definition: It helps in organising data into various types so that a relation can be set for accessing information.

Data Updation: It helps in insertion, modification and deletion of the data in the database.

Data Retrieval: It helps in taking out relevant information from the stored data in an organised manner.

(c) What is a primary key? How can a primary key be defined in a table?

Ans. A primary key is a field or a set of fields that needs to be unique. This can be a unique identification number such as a Medicare number, employee ID number, pension number, etc.

Defining Primary Key in a Table:

1. Select the table in the Navigation Pane.
2. In the Design tab, click on the down-arrow under the Views option and choose Design View.
3. Click on the field which you want to set as primary key.
4. Click on the Primary Key button present next to Views button.
5. You can also right-click on the field name and choose the Primary Key option from the context menu. It is a toggle button, i.e., clicking once will set the field as primary key and clicking again will remove the primary key setting.

(d) Discuss briefly a few data types available in MS Access 2013.

Ans. Data types available in MS Access 2013

Type of Data	Description
Short Text	Text or combination of text and numbers, including numbers that do not require calculation (e.g. phone numbers).
Long Text	Lengthy text or combination of text and numbers.
Number	Numeric data used in mathematical calculations.
Date/Time	Date and time values for the years 100 through 9999.

Type of Data	Description
Currency	Currency values and numeric data used in mathematical calculations involving data with one to four decimal places.
AutoNumber	A unique sequential (incremented by 1) number or random number assigned by Microsoft Access whenever a new record is added to a table.
Yes/No	Yes and No values and fields that contain only one of the two values (Yes/No, True/False, or On/Off).
Attachment	Files, such as digital photos. Multiple files can be attached per record. This data type is not available in earlier versions of Access.
OLE objects	OLE objects can store pictures, audio, video, or other BLOBs (Binary Large Objects)

Type of Data	Description
Hyperlink	Text or combination of text and numbers stored as text and used as a hyperlink address.
Lookup Wizard	The Lookup Wizard entry in the Data Type column in the Design view is not actually a data type. It starts to help you define either a simple or complex lookup field. A simple lookup field uses the contents of another table or a value list to validate the contents of a single value per row. A complex lookup field allows you to store multiple values of the same data type in each row.
Calculated	You can create an expression that uses data from one or more fields. You can designate different result data types from the expression.

(e) Write the steps to delete a field from a table.

Ans. Deleting a Field

1. Change the view to Design View.
2. Click on the field which you want to delete.
3. Right-click and choose Delete Rows.
4. You can also click on the Delete rows button in the Tools group under the Design tab.
5. A confirmation dialog box appears. Choose Yes to delete the field.
6. Press Ctrl+S to save the changes.

COMPUTER TIME!

1. Riddhi has created a table with some fields in MS Access 2013. She has given a wrong name to a field by mistake. Can she change the name of the field now? If yes, help her to change the name by giving the steps for the same.

Ans. Do it yourself.

2. Madhav has created a table named 'Class Record' having the following fields: Name of the student, Date of Admission and Monthly fee paid. But he does not know the correct data types that should be assigned to each field. Help him by suggesting correct data types for each field.

Ans. Do it yourself.

Answers of Suggested Class Activities

1. A record is the row containing values under each field for one entity.
2. The software used to manage database is called a Database Management System (DBMS).
3. The topmost part of the Access window which displays name of the database and also the name of the software.
4. Facts related to any object in consideration is known as data. For example, your name, age, height, weight, etc., are examples of data that is related to you.

Answers of Worksheet

- I. 1. (c) 2. (b) 3. (d) 4. (d) 5. (a)
- II. 1. database
2. confidentiality
3. field
4. Data
5. DBMS

Chapter 6

More on MS Access 2013

DO AND LEARN

1. Fill in the blanks.

- Ans.** (a) The total row adds up an entire column of numbers.
- (b) Data from tables and queries can be presented in a printable format called reports.
- (c) Sorting and Filtering are two tools that let you customize how you organize and view your data.
- (d) Toggling your filter allows you to turn the filter on and off.
- (e) Quick Search on data can be done in Access using the Record Navigation pane available at the bottom of the MS Access screen.

2. Write True (T) or False (F).

- Ans.** (a) After you save the sort, the records will stay sorted this way until you perform another sort or remove the current one. T
- (b) The filter searches all of the records in the table, finds the ones that meet your search criteria, and permanently removes the ones that don't. F
- (c) Click '(Blanks)' to set the filter to find only the records with no data in the selected field. T
- (d) 'Columnar', 'Tabular', 'Datasheet' and 'Justified' are type of queries. F
- (e) Once you've created a form, you can modify it by adding additional fields and design. T

3. Tick (✓) the correct option.

Ans. (a) 'Totals' is present in the Records group under Home tab.

(i) **Records** (ii) Sort & Filter

(iii) Clipboard (iv) View

(b) After you have set your criteria, run a query by clicking the Run command on the Design tab.

(i) view (ii) select

(iii) **run** (iv) append

(c) Preview the report opens a report in the Print Preview mode.

(i) Detailed (ii) **Print Preview**

(iii) Stepped (iv) Design

(d) Report command is present under Create tab of the Ribbon.

(i) **Create** (ii) Home

(iii) External data (iv) Database tools

(e) Access sorts records by their ID numbers.

(i) size (ii) letters

(iii) length (iv) **ID numbers**

4. Answer the following questions.

(a) Name the different layout formats of a report available in MS Access 2013.

Ans. Stopped, Block and Outline.

(b) Differentiate between 'sorting' and 'filtering' in MS Access 2013.

Ans. Sorting records means putting records into a logical order with similar data grouped together.

Filtering allows you to view only the data you want to see. When you create a filter, you set the criteria for the data you want to display.

(c) Why do we use 'Filter' in MS Access?

Ans. Filters are useful because they allow you to focus on specific records without being distracted by the data you're uninterested in. For instance, if you had a database that included customer and order information, you could create a filter to display only customers living within a certain city or only orders containing a certain product.

(d) Write the steps to create a query in MS Access using Query Design.

Ans. Follow these steps to create a query using Query Design:

1. Select the Create tab on the Ribbon, and locate the Queries group.
2. Click the Query Design command.
3. Access will switch to Query Design View. In the Show Table dialog box that appears, select the table you want to run a query on. We are running a query about our class record, so we'll select the Class Record table.
4. Click Add, then click Close.
5. The selected table will appear as a small window in the Object Relationship pane. In the table window, double-click the field names you want to include in your query. They will be added to the design grid in the bottom part of the screen.
6. Set the search criteria by clicking the cell in the Criteria row of each field you want to filter. (Typing criteria into more than one field in the Criteria row will set your query to include only results that meet all criteria. If you want to set multiple criteria but don't need the records shown in your results to meet all of them, type the first criteria in the Criteria row and additional criteria in the or row and the rows beneath it.)
7. After you have set your criteria, run the query by clicking the Run command on the Design tab.
8. The query results will be displayed in the query's Datasheet view, which looks like a table. If you want you can save your query by clicking the Save command in the Quick Access Toolbar. When prompted to name it, type the desired name, then click OK.

- (e) Kanishka wants to filter out the students scoring 100 marks in Maths. Which feature of MS Access should she use? Write the steps that she should follow.

Ans. Kanishka should use Filter tool of MS Access. The steps to access this tool are:

1. Click the drop-down arrow next to 'Masks in Maths'.
2. Now select the checkbox in front of '100'.
3. Click OK.

COMPUTER TIME

1. Help your sister who is a teacher in a school to record the marks of all the students of her class in five subjects. Create a table for the same.
2. Create queries for filtering the records for students scoring above 90 as well as below 33.
3. Sort the data in the descending order of marks.
4. Design a form for her to facilitate the data entry process.

Ans. Do it yourself.

Answers of Suggested Class Activities

1. (b) 2. (d) 3. (a) 4. (a) 5. (b)

Answers of Worksheet

- I. 1. Home 2. Queries 3. Query Wizard; Query Design
4. Filters 5. Toggling
- II. 1. F 2. T 3. T 4. T 5. F
- III. 1. Data from tables and queries can be presented in printable format called reports.

Steps to create a report:

- (a) Open the table or query you want to use in your report.

- (b) Select the Create tab on the Ribbon. Locate the Reports group and then click the Report command.
 - (c) Access will create a new report based on your object.
 - (d) It is likely that some of your data will be located on the other side of the page break. To fix this, resize your fields. Simply select a field, then click and drag its edge until the field is of the desired size. Repeat with additional fields until all of your fields fit.
2. Creating forms for your database can make entering data more convenient. When you create a form, you can design it in a way that works with your database.

Access makes it easy to create a form from any table in your database. Any form you create from a table will let you view the data that's already in that table and add new data also. Once you've created a form, you can modify it by adding additional fields and design controls like combo boxes.

3. The 'Total' row adds up an entire column of numbers, just like in a ledger or on a receipt. The resulting sum appears in a special row at the bottom of the table, called the 'Total' row.

Steps to create a totals row:

- (a) From the Home tab, locate the Records group and click the Totals command.
- (b) Scroll down to the last row of your table.
- (c) Locate the desired field for the 'Total' row and then select the second empty cell below the last record for that field. When a drop-down arrow appears, click it.
- (d) Select the function you want to perform on the field data.
- (e) The 'Total' row will appear.



TESTING TIME – 2

(BASED ON LESSONS 4 TO 6)

1. Tick the correct option.

Ans. (a) A collection of inter-related data.

(i) Record

(ii) Field

(iii) Database

(iv) Information

(b) MS Access window pane helps you organise your database objects, and is the main means of opening or changing the design of a database object.

(i) Quick Access Toolbar

(ii) Navigation Pane

(iii) Ribbon

(iv) None of these

(c) Putting records in logical order in a database table.

(i) Sorting

(ii) Filtering

(iii) Searching

(iv) Creating

(d) Which of the following is a programming language?

(i) MS Access

(ii) Adobe Photoshop

(iii) Python

(iv) Flash

(e) Which of the following is a decision making statement in Python?

(i) If

(ii) If-else

(iii) If-else-if

(iv) All of these

2. State whether true or false.

Ans. (a) A computerised record maintenance system is called the DBMS or the Database Management System. T

(b) A table in a database is a row containing values under each field for one entity F

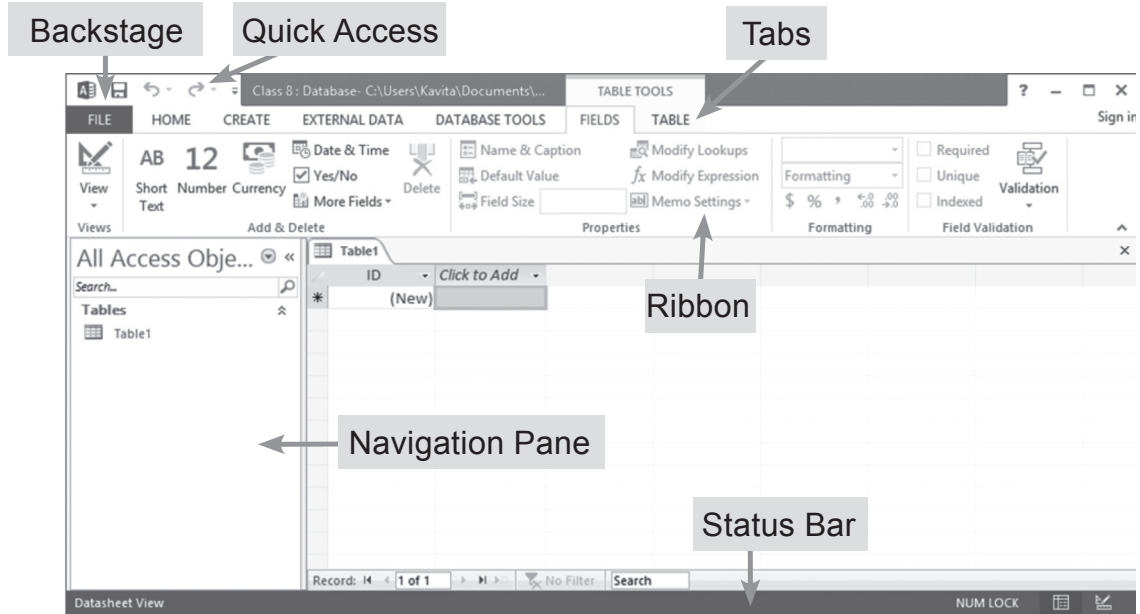
(c) Reports in a database software organize and summarize data for viewing for printing. T

(d) Print() statement in Python takes input from the user. F

(e) A loop is used to execute a block of statements repeatedly until a given condition is satisfied. T

3. Label any 5 parts of the following MS Access screen:

Ans.



4. Answer the following briefly:

(a) With the help of an example, differentiate between a field and a record in a table.

Ans. 1. Field: It is the column heading and contains a set of values for a single type.

2. Record: It is the row containing values under each field for one entity.

(b) Write steps involved in designing a database.

Ans. Creating a Database using Templates: When you click on the File → New commands in the MS Access window, it provides a readymade template screen to choose from.

Database templates have replaced the Database Wizard found in older versions of MS Access. Some templates include objects and

sample data. The Blank database template does not include any pre-defined database objects.

- (c) Give appropriate examples to differentiate between sorting and filtering tools of a database software.

Ans. Example of Sorting: Assume a table of data with the following fields: Name, Class, Marks in Eng, Marks in Maths, Marks in SC, Total Marks.

If you want to arrange the data in descending order of total marks, use sorting tool.

Example of Filtering: Display only the students who have scored 100 marks in SC.

- (d) What is the advantage of creating forms in a database?

Ans. Creating forms for your database can make entering data more convenient. When you create a form, you can design it in a way that works with your database.

Access makes it easy to create a form from any table in your database. Any form you create from a table will let you view the data that's already in that table and add new data also. Once you've created a form, you can modify it by adding additional fields and design controls like combo boxes.

- (e) What is the purpose of break statement in Python? Explain with the help of an example.

Ans. Break Statement: When you put a break statement in the body of a loop, the loop stops executing, and control shifts to the first statement outside it. You can put it in a for or while loop.

(c) What do you mean by the term 'command'?

Ans. A command is a block that specifies an action to be performed (e.g., playing sound) when the event (e.g., pressing Button1) is triggered.

(d) Write briefly about the following:

- (i) Gaming apps
- (ii) Packaging your app

Ans. (i) These are by far the most popular category among types of apps, as more than 24% of all mobile applications, available in the App Store, fall into this section.

Mobile gaming has always been thriving, prompting app developers to invest more time and resources into creating new games and mobile versions of well-known stationary games. From the user's perspective, gaming apps offer a sense of achievement and high engagement in the process. An average gaming session is about 8 minutes long. For developers, the game apps category is the most profitable one.

Examples: Clash of Clans, Angry Birds Go.

(ii) To 'package' an app to your phone or to send it to someone else, select the Build tab at the top of the screen. Under Build there are two options available for you to choose from:

1. App (provide QR code for .apk): You can generate a barcode (a QR code), which you can use to install the app on a phone or tablet that has a camera, with the aid of a barcode scanner, like the ZXing barcode scanner (freely available in Google Play).
2. App (save .apk to my computer): You can download the app to your computer as an apk file, which you can distribute and share as you like by manually installing it on other devices. (sometimes called 'side loading'.)

(e) Niti wants to create her first app using MIT App Inventor, but she does not know how. Help her by providing her the steps required to create the app.

Ans. To create your first app with MIT, follow these steps:

1. Go directly to ai2.appinventor.mit.edu or click the orange button 'Create Apps!' from the App Inventor website.
2. Log in to App Inventor using Gmail's (or Google's) user name and password.
3. Click Continue to dismiss the Splash screen.
4. Click on Start new project.
5. Type in the project name (underscores are allowed, spaces cannot be used) and click OK.

To select components and set properties, follow these steps:

1. From the User Interface palette, drag and drop the Button component to Screen 1.
2. To give the image of the bee to the button, click on the text None... and click Upload File... in the Properties pane, under Image.
3. A window will pop up to let you choose the image file. Click Browse and then navigate to the location of the desired image. Click the file, click Open, and then click OK.

COMPUTER TIME

1. Name any five useful mobile apps installed on your parent's/ guardian's mobile. Ask them about any two useful features of each app and write about them. Under their guidance, explore the apps and write about other features that you find in each app.

Ans. Do it yourself.

2. Think of a topic on which you would like to develop an app. Try developing an app on the selected topic using MIT App Inventor. You may take guidance from its tutorial available online. You can even download the PDF version of the tutorial for offline reference. Use the following link: <https://appinventor.mit.edu/explore/ai2/tutorials>.

Ans. Do it yourself.

Answers of Suggested Class Activities

Do it yourself.

Answers of Worksheet

- I. 1. (c) 2. (a) 3. (d) 4. (b) 5. (a)
II. 1. (d) 2. (e) 3. (b) 4. (a) 5. (c)

- (b) **ARPANET** is considered the first known group of interconnected computers.
- (i) PARANET (ii) RAPANET
(iii) APRANET (iv) **ARPANET**
- (c) Blog is short for **Weblog**.
- (i) Web blog (ii) **Weblog**
(iii) Blogweb (iv) None of these
- (d) **Phishing** is a form of fraud where fraudulent e-mails are sent that resemble e-mails from reputable sources.
- (i) Ransomware (ii) Malware
(iii) **Phishing** (iv) Social Engineering
- (e) Extra logins, new passwords, application security are all examples of **Critical Infrastructure Security**.
- (i) Cloud Security
(ii) Application Security
(iii) Network Security
(iv) **Critical Infrastructure Security**
- (f) Which of the following is an example of Artificial Intelligence?
- (i) Siri (ii) Cortona
(iii) **Both (i) and (ii)** (iv) Neither (i) nor (ii)

4. Answer the following questions.

- (a) What do you understand by cloud computing? Discuss its advantages and disadvantages.

Ans. Cloud computing means that instead of all the computer hardware and software you're using sitting on your desktop, or somewhere inside your company's network, it's provided to you as a service by another company via the Internet.

Advantages of Cloud Computing

- Less costs: The services are free from capital expenditure.

- 24 × 7 availability: Most of the cloud providers are reliable in offering their services.
- All over functioning: Cloud computing offers the advantage of working from anywhere across the globe, as long as you have an Internet connection.
- Automated updates on software: In cloud computing, the server suppliers regularly update your software including the updates on security.
- Security: Cloud computing offers great security when any sensitive data has been lost.

Disadvantages of Cloud Computing

- Network connection dependency: In order to get the benefits of cloud computing, your business must always have an Internet connection. You need a network to be able to use your virtual machines. If you lose your network connection because of a storm or an outage, you may experience some downtime.
- Limited features: Not all cloud providers are created equally.
- Loss of control: You are essentially trusting another party to take care of your data.
- Security: Cloud hacking cases have shown that not all cloud providers are as secure as they claim to be.
- Technical issues: If you experience any technical issues, you have no choice but to call your service provider's technical support for help.

(b) Differentiate between blogs and websites.

Ans. Blog is an online journal or website displaying information in reverse chronological order. It is a platform where a writer or group of writers share their views on any subject.

Website is a group of web pages on any topic containing information about the topic.

(c) Why is it important to be safe online? Mention any two reasons.

Ans. It is very important to stay safe online because it can lead to a data breach and can lead to a lot social, business and personal risk.

(d) Write briefly about the following:

(i) Blog structure

(ii) Cyber ethics

(iii) Artificial Intelligence

Ans. (i) **Blog Structure:** The appearance of blogs changed over time, and nowadays blogs include different items. But most blogs include some standard features and structure. Here are common features that a typical blog will include:

- Header with the menu or navigation bar
- Main content area with highlighted or latest blog posts
- Sidebar with social profiles, favourite content, etc.
- Footer with relevant links like a disclaimer, privacy policy, contact page, etc.

(ii) **Cyber Ethics:** Cyber ethics is a set of moral choices that individuals make when using Internet-capable technologies and digital media. The acceptable behaviour in the real world is also acceptable in cyberspace. Examples of moral conduct in both physical and virtual environment include showing respect for others, being honest, not stealing from others, etc.

(iii) **Artificial Intelligence:** Artificial Intelligence (AI) is an area of computer science that emphasises on the creation of intelligent machines that can work and react like humans. It includes learning (the acquisition of information and rules for using the information), reasoning (using rules to reach approximate or definite conclusions) and self-correction.

AI can be categorised as either weak or strong. Weak AI is an AI system that is designed and trained for a particular task. Virtual personal assistants, such as Apple's Siri, are a form of weak AI.

Strong AI is an AI system with generalised human cognitive abilities. When presented with an unfamiliar task, a strong AI system is able to find a solution without human intervention.

(e) Name any two types of cyber threats. Write briefly about each.

Ans. 1. Ransomware is a type of malware that involves an attacker locking the victim's computer system files – typically through encryption – and demanding a payment to decrypt and unlock them.

2. Malware is any file or program used to harm a computer user, such as worms, computer viruses, Trojan horses and spyware.

(f) Naman is working on his Science project given by his school teacher. He needs to prepare a PowerPoint presentation and requires relevant pictures. He has downloaded some protected pictures from Internet for his personal use. What's wrong with this act of Naman and why?

Ans. Naman is not following cyber ethics. All intellectual property has copyright laws and he cannot copy any material from any website without permission.

(g) Karina was typing an e-mail to be sent to her friend. She attached some pictures and audio files (downloaded from the Internet) with the mail. Suddenly, her computer started showing irrelevant symbols and messages. What could have gone wrong with Karina's computer? What should she do to avoid any such thing in future?

Ans. Karina's computer might be attacked by malware. She should use a good anti-virus software that protects her computer from malware attacks.

Answers of Suggested Class Activities

Students can do these activities on their own.

Answers of Worksheet

- I. 1. TCP/IP 2. ARPANET 3. Telnet 4. Weblog
5. Jorn Barger
- II. 1. ARPANET 2. WEBLOG 3. WEBSITE 4. CLOUD
5. CYBER ETHICS



TESTING TIME – 3

(BASED ON LESSONS 7 AND 8)

1. Choose the correct option.

Ans. (a) Which of the following is not a business app?

- (i) Adobe Reader
- (ii) Facebook Pages Manager

(iii) Angry Birds

- (iv) Indeed Job Search

(b) Which of the following is an entertainment app?

- (i) Amazon Prime Video
- (ii) Netflix

- (iii) Dubsmash

(iv) All of these

(c) Which of the following is not a type of networking?

- (i) LAN

- (ii) MAN

(iii) RAN

- (iv) PAN

(d) A computer network that enables communication between computers in the range of a particular person, often covering an area of 10 metres.

- (i) LAN

- (ii) MAN

- (iii) RAN

(iv) PAN

(e) Software applications that behave like native applications.

- (i) Hybrid apps

(ii) Web apps

- (iii) Educational apps

- (iv) None of these

2. Write whether true or false.

Ans. (a) Solitaire is an example of application of Artificial Intelligence.

False

(b) Native apps are very slow.

False

- (c) A computer network is a group of cables connected to each other. False
- (d) Local area networks are very expensive. False
- (e) A metropolitan area network (MAN) may span an entire city or campus. False

3. Answer the following questions briefly.

(a) Give one example of each of the following:

- (i) Native app
- (ii) Hybrid app
- (iii) Artificial Intelligence

Ans. (i) Angry Birds (ii) Gmail (iii) Spam filters

(b) What are the advantages of hybrid apps over native apps?

Ans. Advantages of Hybrid Apps

- Easy to build
- Much cheaper than a native app
- Single app for all platforms
- No browser needed
- Can usually access device utilities using an API
- Faster to develop than native apps

(c) Write a short note on History of Internet.

Ans. The Internet originated with the U.S. government, which began building a computer network in the 1960s known as ARPANET. ARPANET is considered the first known group of interconnected computers. This system was used to transfer confidential data in the military. This data sharing technology was then opened to educational institutes in the United States. The system was replaced by new networks operated by commercial Internet service providers in 1995. The Internet was brought to the public on a larger scale at around this time.

(d) How do you view an app on a phone or tablet? Write steps.

- Ans.**
1. Download the MIT A12 Companion app from the Google Play Store and install it on your phone or tablet.
 2. Search for MIT A12 Companion on Google Play Store, **<https://play.google.com/store>** and then install the app by clicking install.
 3. Once you've installed the A12 Companion app, you can connect your App Inventor project to your phone or tablet for live testing. Be sure your computer and mobile device are connected to the same WiFi network.
 4. Return to the Designer window on your computer. Click Connect and choose A1 Companion from the drop-down menu.
A QR code and a 6-character code will appear on your computer screen.
 5. Open the A12 Companion app on your device by clicking on the app icon.
 6. A screen will appear with the option to scan the QR code or type in the six character code.
 7. If you choose to scan the code, press the blue scan QR code button for the scanner to launch. Scan the QR code. Wait a few seconds for your app to open on your mobile device. If you choose to use the code, type it into the white text box, click the orange button afterwards.

(e) Write briefly about any two applications of AI.

Ans. Artificial Intelligence in Business Management

- Spam filters
- Smart e-mail categorisation
- Voice to text features
- Smart personal assistants, such as Siri, Cortana and Google Now
- Automated responders and online customer support
- Process automation
- Sales and business forecasting

- Security surveillance
- Smart devices that adjust according to behaviour

Artificial intelligence in E-commerce

- Smart searches and relevance features
- Personalisation as a service
- Product recommendations and purchase predictions
- Fraud detection and prevention for online transactions
- Dynamic price optimisation

4. Write full forms of the following:

Ans. (a) AI	<u>Artificial Intelligence</u>
(b) Blog	<u>Weblog</u>
(c) App	<u>Application</u>

5. Answer the following questions.

(a) Mention the advantages of native apps.

- Ans.**
1. Natives are very fast
 2. Easily distributed in Google, Apple app stores
 3. More interactive and intuitive
 4. Easy interaction with any feature of the phone

(b) Give any two examples of:

1. Hybrid Apps
2. Gaming Apps
3. Educational Apps

Ans. (i) Hybrid Apps: HTML, CSS and JavaScript.

(ii) Examples of game apps

- Clash of Clans
- Candy Crush Saga
- Angry Birds Go
- Temple Run

(iii) Educational apps: BYJU'S, Duolingo

(c) Mention any three features of the Internet.

- Ans.** 1. World Wide Web is a part of the Internet, which supports hypertext documents, allowing users to view and navigate different types of data.
2. E-mail is the most popular reason people use the Internet. You can create, send and receive e-mail messages in a fraction of a second. You only need an e-mail program and an account on an Internet mail server.
3. News includes tens of thousands of newsgroups where each newsgroup hosts discussions on a specific topic as per the user's interest.

(d) What are the uses of cloud computing? Write briefly about any one.

Ans. For Enterprises: For businesses, the cloud has the potential to transform operations, as well as cut costs. Offices running computer networks would no longer have to deal with software installation for each computer, as well as licenses. Uses of the cloud include data storage, offering remote access to any work related data.

Mobility: The most obvious use of cloud computing is the mobility that it brings, both to the user as well as to the corporate and business users. Many of us are already familiar with some cloud computing services, like Google Docs, or even e-mail services. With these apps we can access documents or mail that is not stored on our PCs, but is available to use because it is stored on a cloud, or remote location.

(e) Write a short note on Artificial Intelligence in e-commerce.

Ans. Artificial intelligence in E-commerce

- Smart searches and relevance features
- Personalisation as a service
- Product recommendations and purchase predictions
- Fraud detection and prevention for online transactions
- Dynamic price optimisation

PROJECT WORK

Ans. Do it yourself.