# Lab No. 01: Introduction to Computer

## Key Points:
1. Introduction to Computer Component
2. Log on to Windows 10.
3. Explore the desktop.
4. Use the Start menu.
5. Use the Windows Taskbar.
6. Explore Control Panel.
7. End a computing session

## Objective:
• In this lab you will learn the basic skills needed to work on a Windows 10 computer. You'll learn about logging on to and off from Windows and explore tools you can use to give control the computer. You'll practice using these tools to locate your computer's hardware and operating system specifications, and then ensure that your installation of Windows 10 is absolutely up to date

## CLO's:
• CLO:01

# Basic Computer Organization
A computer made up of two main parts Computer Software and Hardware

## 1. Computer Software

Computer software (often called just software) is untouchable components of computer. It compiles all logic instructions that the system uses to do different tasks, including the applications (game or a word processor) and the operating system (Mac OS, Microsoft Windows, Linux, etc.).

## Types of Software
There are two types a software on the basis of their functionality:
System software and Application software.

## a) System Software

It is used to start and run computer systems and networks. It controls the operations and/or extends the processing capability of a computer system.
Some commonly known types of system software are:
(Operating systems, programming language translator, communications software, utility programs).

## b) Application Software

It is the set of one or more programs, which solve specific problems, or specific tasks. Some commonly known application software is: (Word processing software, Database software, Personal assistance software, etc.)

## 2. Computer Hardware

Computer hardware (usually simply called hardware) every physical part (touchable) of computer such as the I/O Card, Memory, Motherboard, Power Supply, Screen. Etc.
Basic hardware components of a modern personal computer. There are many basic components of modern personal computer hardware; some of these are described below.

## Motherboard
The motherboard is the main component of a computer. It is a hard, plastic film that contains every electronic circuit and connection where all the devices (like the CPU, the RAM, the disk

drives, power supply etc.) are switched.

## I/O Devices

Input devices allow the user to enter information into the system, or control its operation. For example: keyboard, mouse, microphone, scanner, etc. On other hand, Output devices display information in a human readable form. Such devices could include printers, speakers, monitors, etc.

## I/O Peripheral Devices

I/O Peripheral used by processor to give information to user and vice versa. For example: router, touchable screen, etc.

## Computer's Memory

There are two types of memory, volatile (RAM) or non-volatile (ROM).

- **Random Access Memory (RAM)**

A computer's main memory uses volatile RAM chips. RAM chips are of two types - dynamic and static Dynamic RAM (DRAM) uses an external circuitry to periodically "regenerate" or refresh storage charge to retain storage data. On other hand, Static RAM (SRAM) does not need any special regenerator circuit to retain the stored data.

- **Read Only Memory (ROM)**

It is a non-volatile memory chips in which data is stored permanently. There are two types of ROM Manufacturer programmed and User programmed. Manufacturer-programmed ROM is one which data is burnt in by the manufacturer of the electronic equipment in which it used.

# Staring with Windows 10

In this section detailed tutorial is described along with proper figures.

## Logging On to Windows 10

The process of starting a computing session is called logging on. After you turn on the computer and it goes through its startup processes, the Windows 10 Welcome screen appears. The appearance of the screen and the exact process to log on to Windows depends on whether more than one user account has been created on your computer, and whether your account is protected by a password.

1. If there is only one account, and it is not protected by a password, Windows might bypass the Welcome screen entirely and log you on. If the Welcome screen displays your user account name and picture, click the picture to log on to Windows.
2. If there is only one account, and it is protected by a password, the Welcome screen displays your user account name and picture and a password box. You enter your password and then press Enter or click the Go button to log on to Windows.
3. If there are multiple accounts, the Welcome screen displays the user account names and pictures for all the active user accounts. You click your user account picture and enter your password.
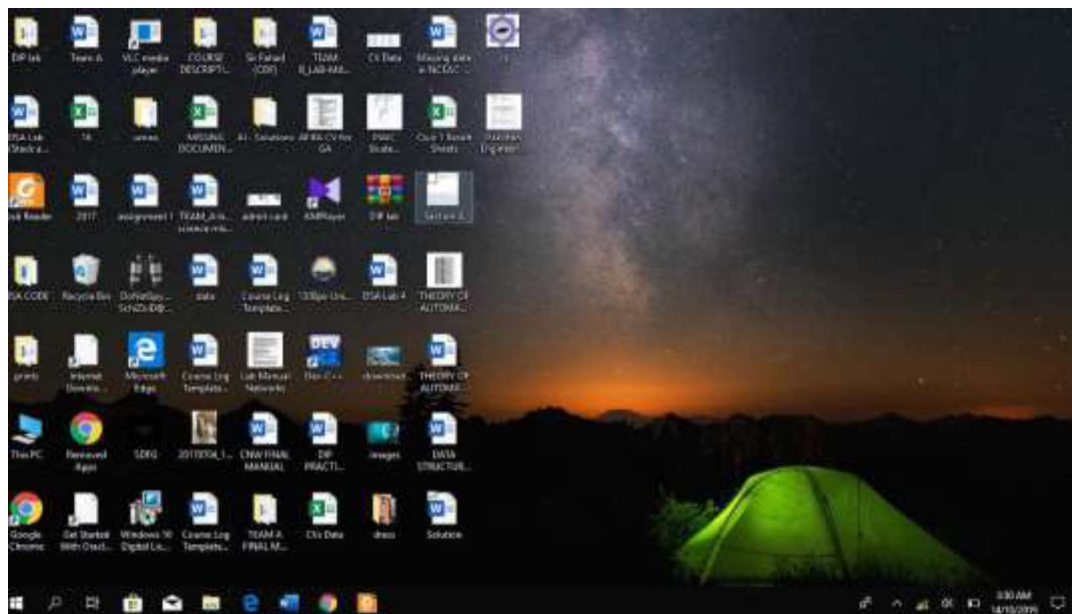
After you log on, Windows 10 loads your user profile and then displays your working environment. known as the desktop.

## Exploring the Desktop

The desktop background you see the first time you log on to Windows 10 might be the default Windows 10 desktop background, which depicts a stylized Windows logo on an organic blue background, or, if you purchased your computer with Windows 10 already installed, the computer manufacturer might have specified a brand-specific desktop background.

. In either case, you can change the background to one of the many beautiful photographs of own choice.



## Start Menu:

In Windows 10. You have the choice of two Start screen configurations:

* A full-screen Start screen with the Start menu collapsed on the left side
* A partial-screen Start screen with the Start menu always visible on the left side

The partial-screen configuration is the default

To switch between the default and full-screen Start screen

1. Open the Settings window.

2. Click Personalization, and then on the Personalization page, click Start.

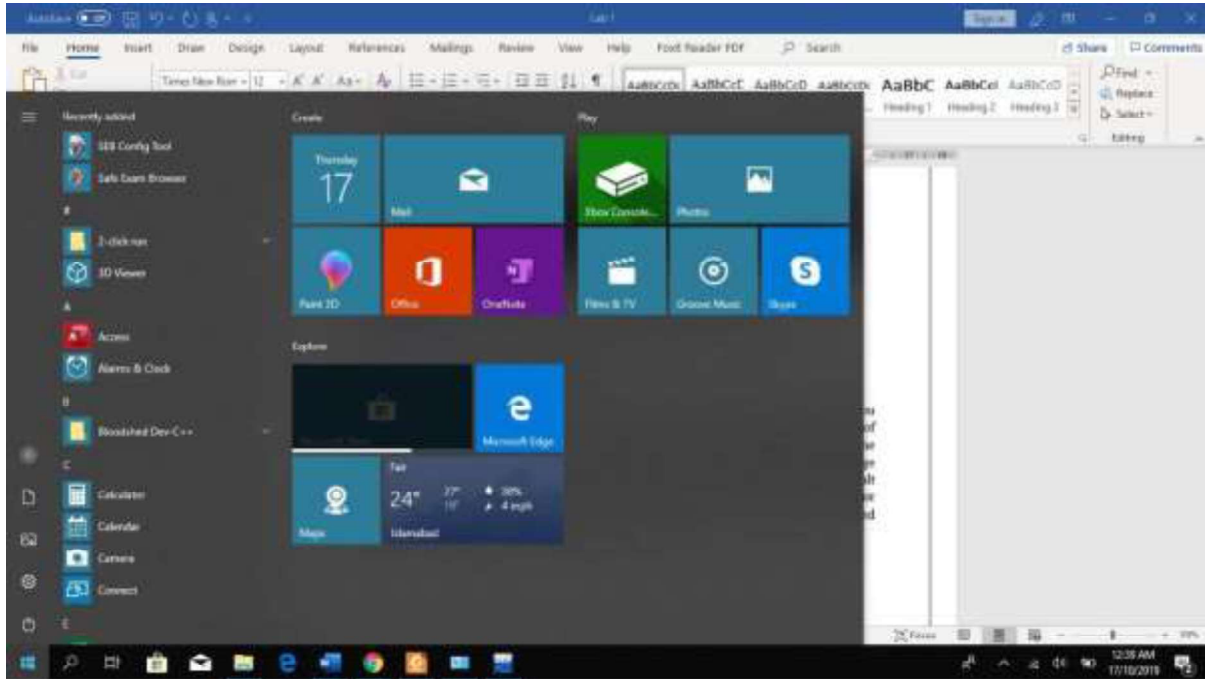3. In the Start pane, click Use Start full screen. Then click the Start button to test the setting.

## Configure Start menu content

On the left side of the Start screen, the Start menu displays information that is related to users and apps. At a minimum, it displays your user account button at the top and the Power and All Apps buttons at the bottom. (The Power and All Apps buttons are also available directly from

the Start screen in the full-screen configuration.)
The Start menu can also display the following lists:

- Most Used app list On a new Windows 10 installation, this list contains links to some standard Windows utilities, or to apps that were selected by the computer manufacturer. As you use Windows, the apps you use most often that aren't pinned to the Start screen appear in this list.



The default Start screen configuration always displays the Start menu

- Recently Added app list This list displays apps for a short time after you install them. If no apps have been installed recently, the Start menu doesn't display the Recently Added list heading.
- Recently opened items When this setting is turned on, you can quickly access files that you've opened with apps that support this feature (such as Microsoft Office apps) from the Start menu or taskbar. The Windows 10 Start menu does not have an area in which you can pin app shortcuts— you pin these to the Start screen instead.

At the bottom of the Start menu, just above the Power button, you can display links to the following items:

1. File Explorer
2. The Settings window
3. Your Documents, Downloads, Music, Pictures, and Videos folders
4. The Homegroup and Network windows
5. Your personal folder, from which you can access all your user account–specific folders and settings
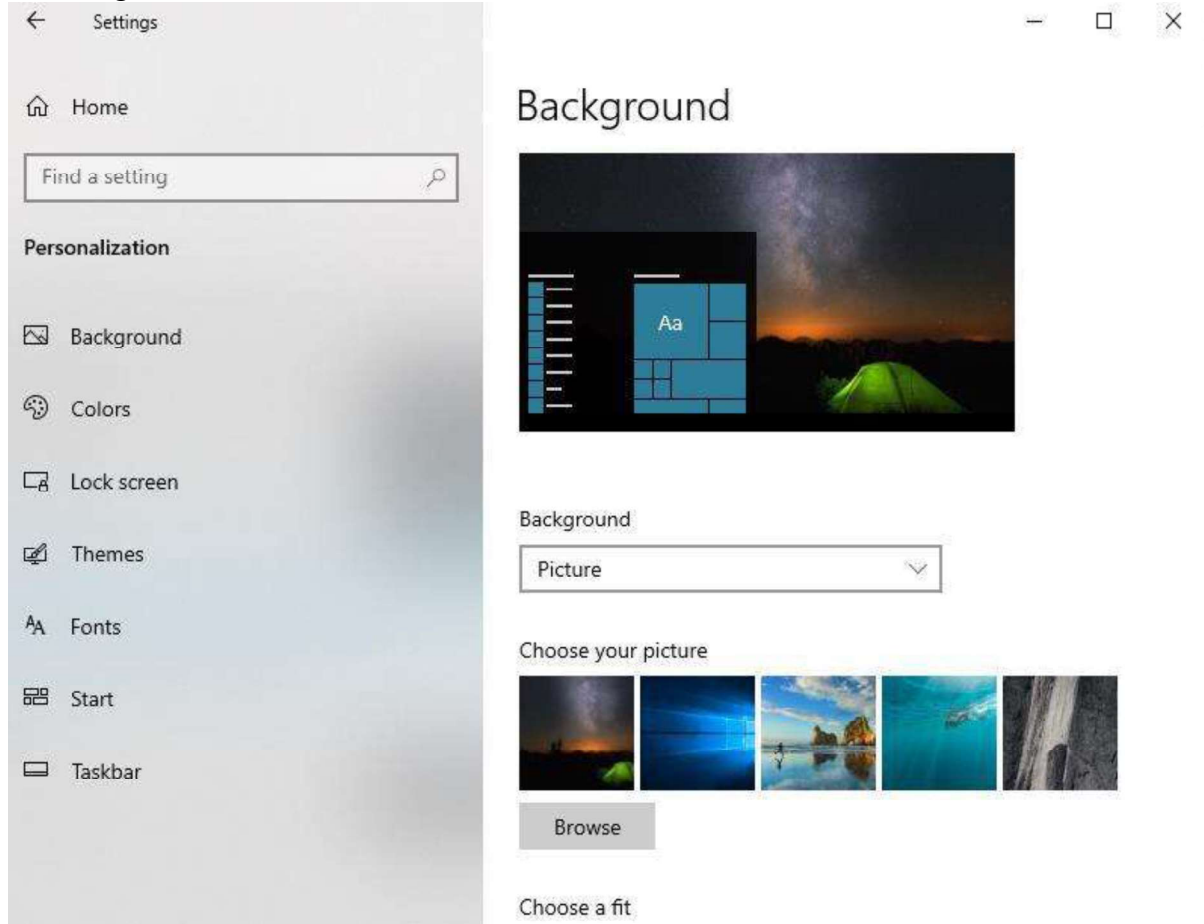
The Start menu displays only File Explorer and Settings by default; you must turn on any specific folders or windows you want to display.
The Start screen content (other than the Start menu) is displayed in the form of tiles. Each tile is actually a shortcut to something else—usually an app, but tiles can also link to other things, such as folders in File Explorer or individual songs in your Groove Music library. You can add tiles to the Windows 10 Start screen by pinning shortcuts to it, including shortcuts to apps, files, folders, web links, contact cards, songs, movies, and pictures—almost anything you want to get to quickly

## Set the desktop background and system colours
You can use the options in the Personalization category of the Settings window to set the

desktop background and the accent colour that is used for various operating system elements, including the Start menu, taskbar, Action Center, and window title bars..
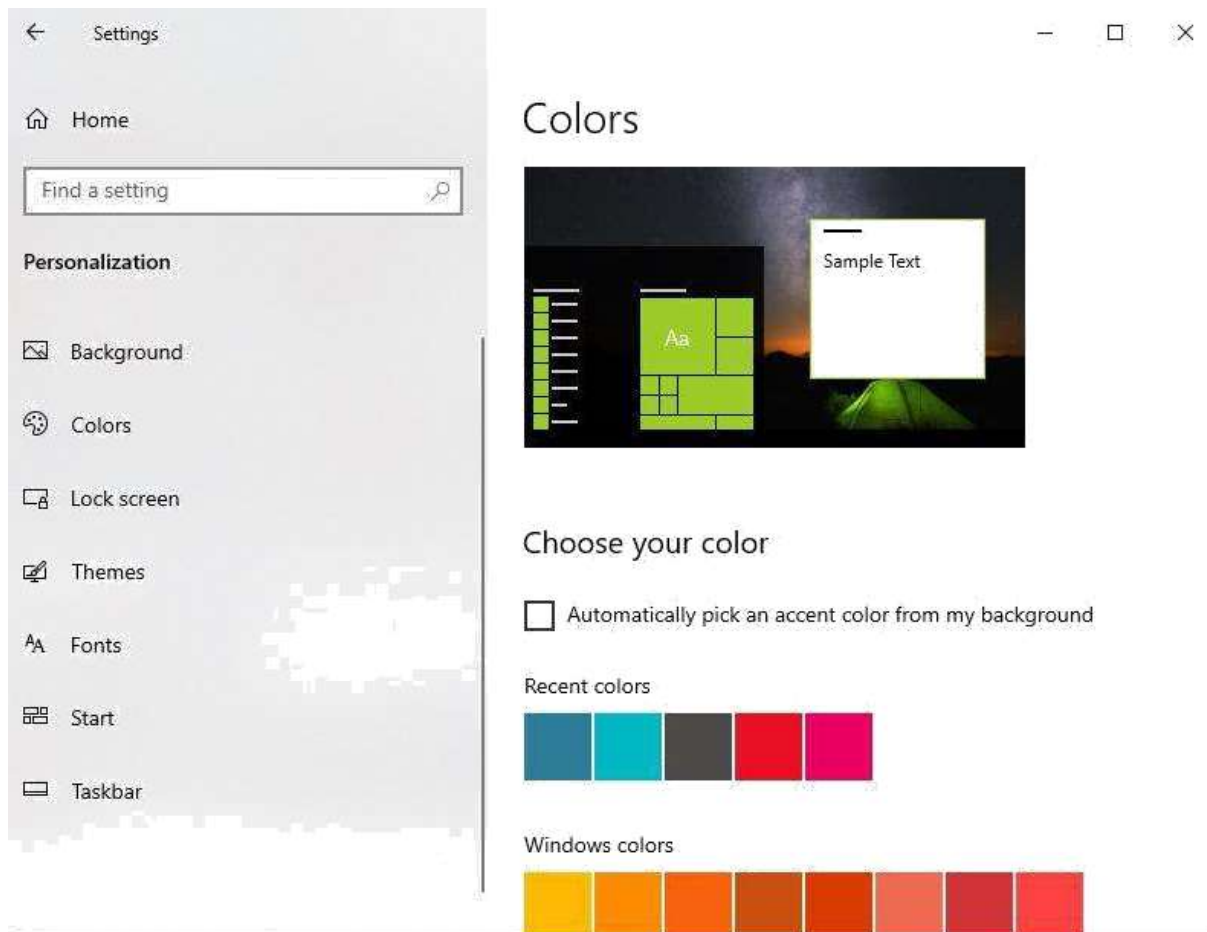


## Set an accent colour
The preview at the top of the Background pane and the preview at the top of the Colours pane display the same image: a partial-screen Start screen, taskbar, and window against the currently selected background.

To set an accent colour based on the desktop background

1. Open the Settings window.
2. Click Personalization, and then on the Personalization page, click Colours.
3. In the Colours pane, set the Automatically pick an accent colour… toggle button to On.

## Using the Windows Taskbar

The taskbar that appears, by default, across the bottom of your screen is your link to current information about what is happening on your Windows computer. In Windows 10, the taskbar functionality has been significantly upgraded. The default taskbar is twice the height that it was in previous versions of Windows, so you can more clearly see its contents. The Start button still appears at the left end of the taskbar, and the time and date still appear near the right end. However, what appears between them has under-gone a transformation. Larger icons, improved grouping, thumbnail window previews from which you can view and work with window content, and the ability to move taskbar buttons where you want them all contribute to the increased usefulness of this feature.

The Show Desktop button appears at the far right end of the taskbar. (If you've used previous versions of Windows, you'll notice that the button appearance has changed significantly.) Pointing to the Show Desktop button makes all the open windows trans-parent so that you can see the desktop. Clicking the button once minimizes all currently open windows; clicking it again redisplays the windows



## Configure the taskbar

you can move the taskbar from its default location at the bottom of the screen to any other edge of the screen. You might find it easier to move the pointer to the taskbar when it's on the side or top of the screen than when it's at the bottom of the screen. If you're working on a small

screen, you might also like to have the additional vertical space that you gain by moving the taskbar to the left or right side of the screen. Regardless of the taskbar location, you can change the height (when horizontal) or width (when vertical) to accommodate more buttons and toolbars.

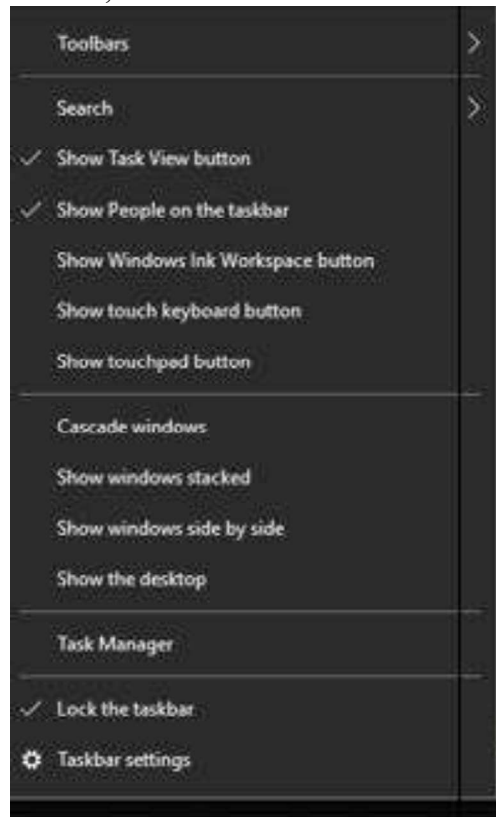**To display the taskbar shortcut menu**
    1.   Right-click an empty area of the taskbar.

**To open the Taskbar And Start Menu Properties dialog box**
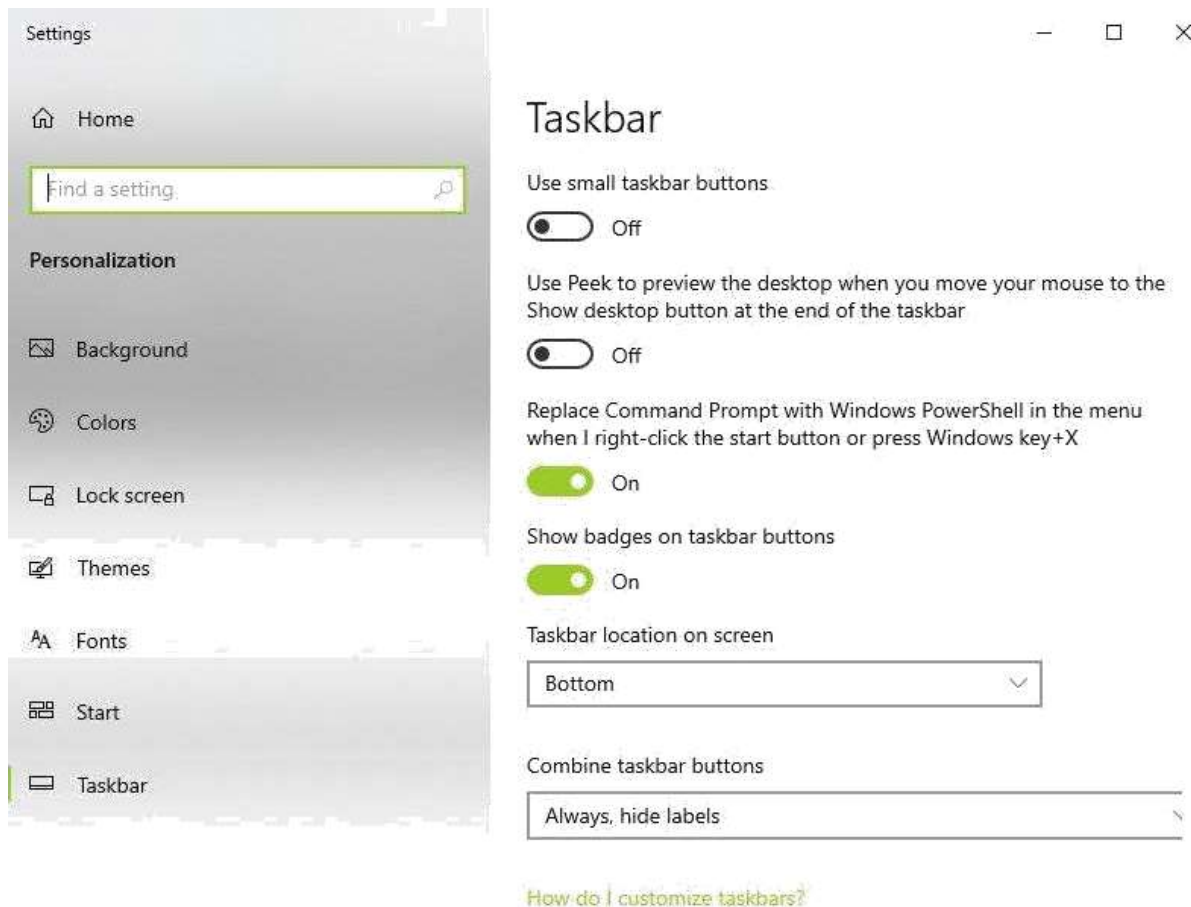    1.   Right-click an empty area of the taskbar, and then click Taskbar setting.

**To prevent or allow changes to the taskbar**
    1. On the taskbar shortcut menu, click Lock the taskbar



**To move the taskbar**
1. Do one of the following:
   I.    Drag the taskbar to any edge of the screen.
  II.   Right-click the taskbar, and then click Properties. On the Taskbar tab of the Properties dialog box, in the Taskbar location on screen list, click Left, Right, or Top (or click Bottom to return the taskbar to its default location).

**To display small taskbar buttons**
1. On the Taskbar tab of the Taskbar and Start Menu Properties dialog box, select the Use small taskbar buttons check box.
2. Click Apply or OK.
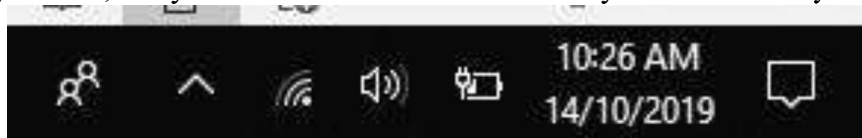
**To hide or display the Task View button**
1. On the taskbar shortcut menu, click Show Task View button.

**To hide or display the touch keyboard button**
1. On the taskbar shortcut menu, click Show touch keyboard button.

## Notification Area

The notification area at the right end of the taskbar displays information about the status of programs, including those running in the background (programs you don't need to interact with), as well as links to certain system commands. Some notification icons and system icons are hidden by default, and you can choose to hide others that you don't actively want to monitor.



# Understand user accounts and permissions

Windows 10 requires at least one user account. You specify that account when you're completing the installation processes, or the first time the computer starts after Windows 10

has been installed. Windows 10 designates this first account as an administrator account so that the account can be used to manage the computer. It isn't possible to sign on to the computer without a user account.

- A user is the person who is using the computer.
- A user account is an account that a person uses to sign in to a computer.
- Each user account is either:
- A Microsoft account, which is any email address that has been registered with the Microsoft account service
- A local account that exists only on a single computer and is not associated with a specific email address

Every user account is also classified as either:
- An Administrator account
- A Standard User account

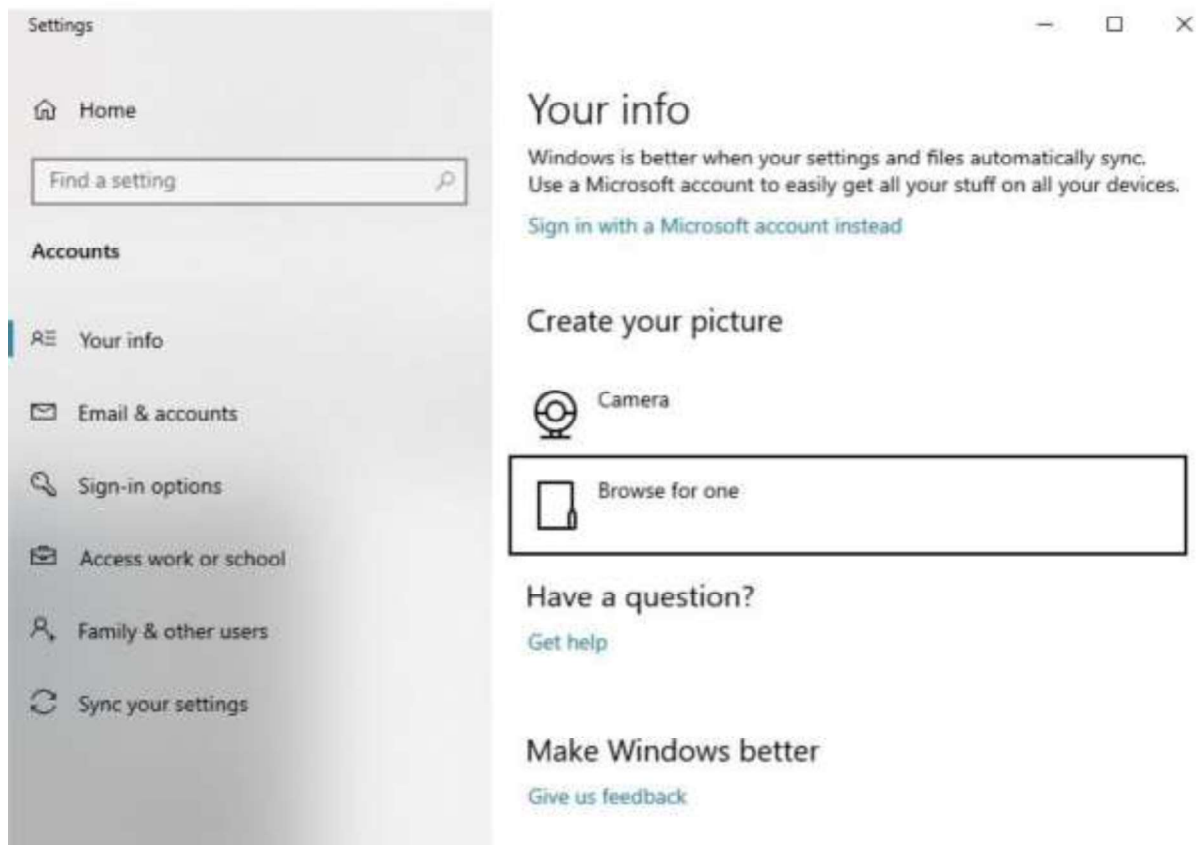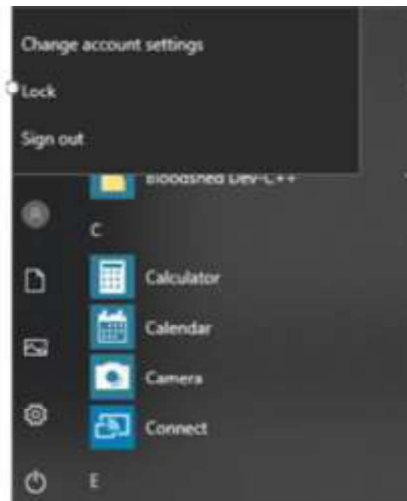This classification provides a specific level of permission to manage system actions on the computer.

## User Profiles:

The Windows 10 system of user profiles allows more than one person to use the same computer while providing the following safeguards:

I. Each user's information is stored separately You prevent Standard Users from reading or altering your documents, pictures, music, and other files by storing them in subfolders that are automatically set up within your user account folder. For example, if you manage your family's financial records on a home computer that your children use to do their homework, the children log in with separate accounts and don't have access to confidential information or the ability to change your files. Administrators can access all user accounts.

II. Each user's working environment is protected You can personalize your environment in various ways, without worrying about other people making changes to your personal settings.

III. Each user's app usage is unique Each user runs separate instances of each app on the computer. For example, you can set up Outlook to connect to your accounts, and other computer users can set up Outlook to connect to their accounts, but they cannot also connect to your accounts. Each user's data is stored and managed separately.

## Manage account pictures and passwords

As previously discussed, you can sign in to Windows 10 by using a Microsoft account or a local account. Each user account has an associated user account picture that is shown on the Welcome screen, at the top of the Start menu, on app and browser window title bars when you're signed in, and in other places. If you sign in to Windows with your Microsoft account credentials, Windows displays the user account picture that is associated with that.
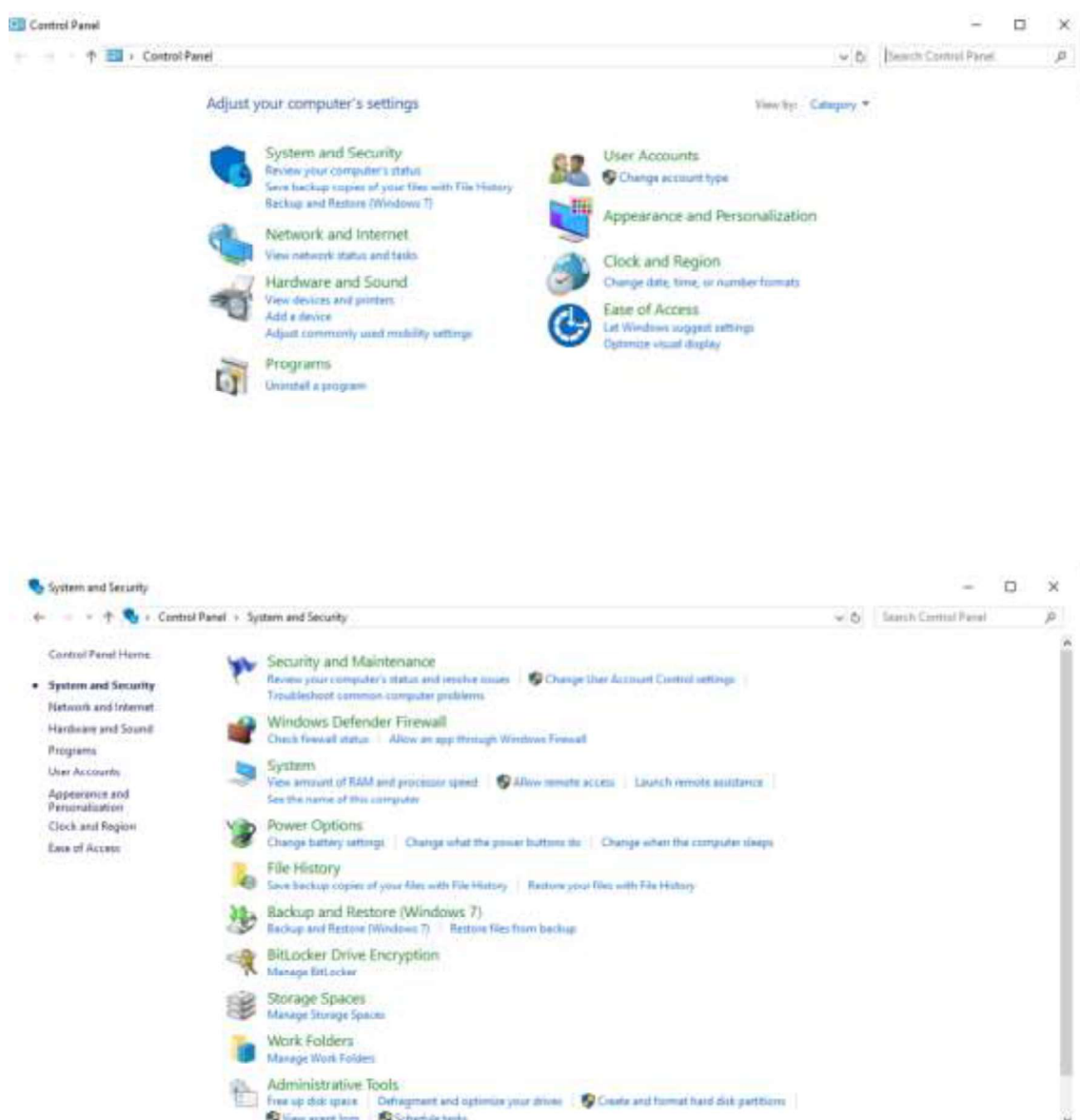
## Exploring Control Panel

Control Panel is the central location from which you can manage all the aspects of your Windows 10 operating system: how it looks, how it works, how it communicates, and so on. When you open Control Panel, it's displayed in a unique instance of Windows Explorer; the taskbar button representing Control Panel and the various Control Panel windows appears on the taskbar independent of the Windows Explorer taskbar button.

**Control Panel Categories**

In Windows Vista and Windows XP, Control Panel offered two views: Category view and Classic view. To help guide users to the correct Control Panel item, Category view described the tasks you might want to perform. Classic view provided direct access to the Control Panel items, and retained the look and feel of the Windows 2000 Control Panel. (In Classic view, you had to know or guess which item to use.)
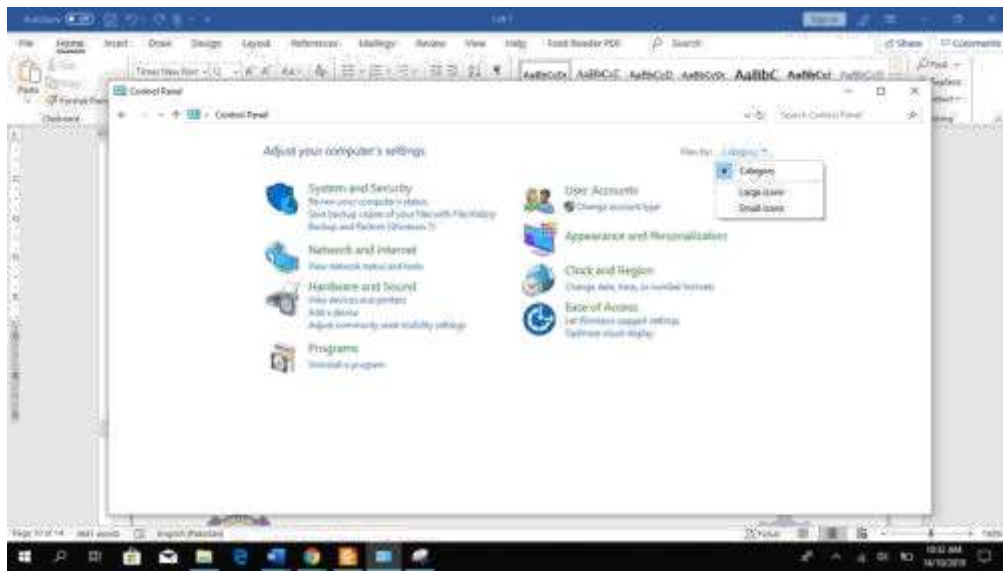
In Windows 10, you can choose from three views of the Control Panel window—Category view, Large Icons view, and Small Icons view. Category view is the default. In this view, Control Panel items are divided into eight categories:

The most common tasks within each category are listed below the category name so that you can go directly to the window or dialog box in which to perform that task. Alternatively, you can browse through a category to the windows, dialog boxes, and tasks related to that category(Let's say system and security).



## Accessing Individual Control Panel Items

From Control Panel, you can access more than 40 individual controls—windows and dialog boxes—with which you manage specific aspects of your computer system. Clicking Small Icons or Large Icons in the View by list displays the All Control Panel Items window.
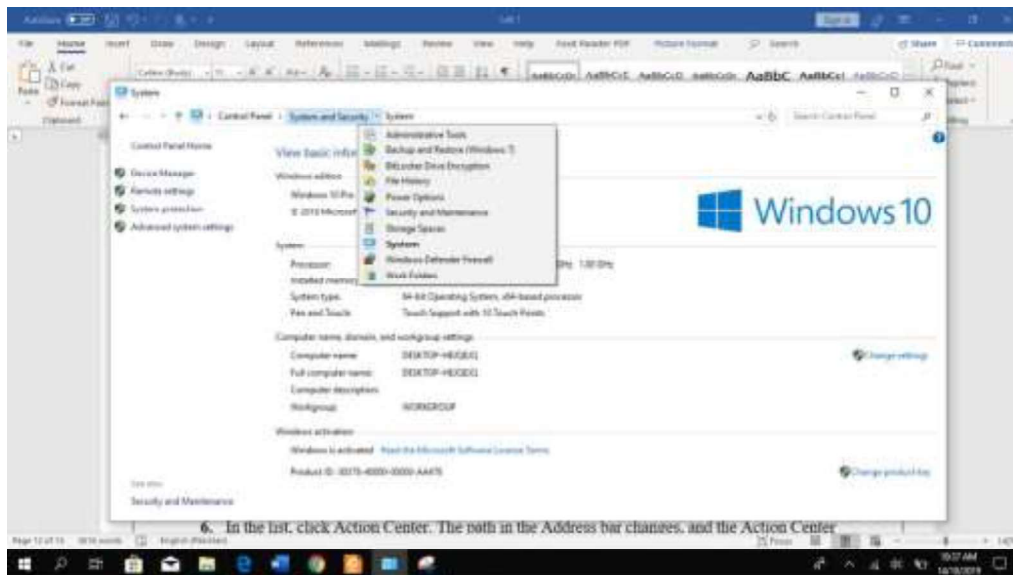
## Finding Information About Your Computer System

Sometimes you'll want or need to locate information about your computer system, such as the processor speed, amount of memory, or edition of Windows. The System window of Control Panel displays information about your computer hardware and operating system.

SET UP You don't need any practice files to complete this exercise. Log on to your Windows 10 computer, and then follow the steps.

3. Open Control Panel. The Control Panel window opens. Troubleshooting If Control Panel opens in a view other than Category view, click Category in the View By list before continuing.

4. Click the System and Security category. See Also For information about some of the security features of Windows 10, see "Updating Windows System Files".

5. In the System and Security window, click the System subcategory. The System window opens.

6. View the information about your computer that is displayed in the right pane of the System window. The left pane of each Control Panel window contains links to related tools at the top, and to related Control Panel items at the bottom. You can return to Control Panel by clicking the Control Panel Home link at the top of the left pane, but for the purpose of learning how to navigate through Control Panel, we'll use a different method, which involves working with the path displayed in the Address bar above the panes. This path shows the route you have taken to get to the displayed window—in this case, the System window.

**7.** In the Address bar, click the arrow to the right of System and Security. A list of the System and Security subcategories appears, with System (the current window) displayed in bold.
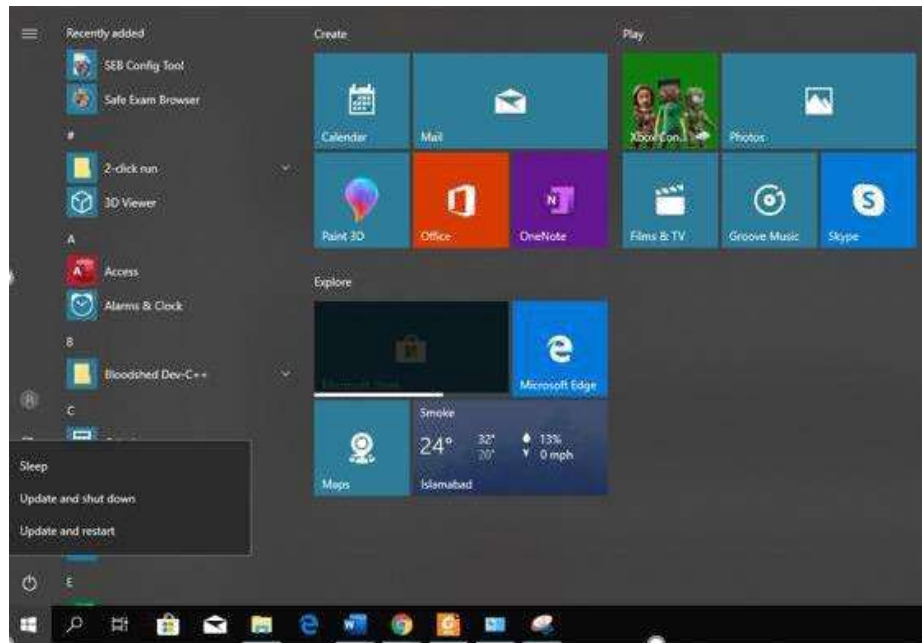


**8.** In the Address bar, click Security and maintenance. You return to the Security and maintenance window.

**9.** If Control Panel appears at the left end of the path shown in the Address bar, click Control Panel. Otherwise, click the left-pointing chevron to the left of the first item in the path, and then in the list that appears, click Control Panel. You return to the Category view of Control Panel window .10. In the View by list, click Large Icons. Control Panel displays large icons and names for the individual subcategories

**10.** In the Address bar, click the arrow to the right of All Control Panel Items. An alphabetical list of the items appears.

**11.** Without clicking away from the list to close it, point to the arrow to the right of Control Panel. The list of Control Panel categories appears.

**12.** In the Address bar, click Control Panel. You return to the Control Panel home page

## Ending a Computing Session

If you are going to stop working with your computer for any length of time, you can safeguard your information and save power in a number of ways. Although not all the options actually turn off the computer, they are referred to collectively as shut-down options, and they are available from the Shut-down Options menu located in the lower-right corner of the Start menu. By default, clicking the Power button (labeled Shut Down) starts the process of shutting down the computer. Clicking the Shut-down Options button (to the right of the Power button) displays a list of the other available shut-down options. The shut-down options include the following:

## Log off

If you're finished working on a computer that you share with other people, you can end your Windows 10 session (but not affect other users' sessions) by logging off. You must save your files and shut down all running programs before you log off; if you don't, Windows 10 will close any open windows and exit programs, possibly losing unsaved data in the process

## Lock

If you want to prevent passers-by from seeing what you're working on, you can lock the computer, which displays the Welcome screen and requires that you log on to your account to resume. Locking is most effective when your user account is protected by a password; otherwise, anyone can click your user account picture on the Welcome screen to unlock the computer and access your information.

## Restart

After installing certain programs and program updates, it is necessary to restart the computer to complete the update of system files that are in use. You might also find, at times, that restarting the computer helps to resolve a technical difficulty.

## Sleep

If you're going to be away from your computer, conserve power and protect your work by putting your computer into Sleep mode. When you do, Windows 10 saves any open files, records their state and the state of any running programs in memory, and then puts your computer into a power-saving mode. When you "wake up" the computer, usually by moving the mouse or by pressing the Enter key or the computer's power button, Windows 10 needs only a few seconds to come out of its power-saving state and retrieve information from memory

## Shut Down

If you need to turn off your computer entirely—for example, to install hardware or to move a desktop computer—you do so by shutting down the computer. Shutting down closes all your open programs and files, ends your computing session, closes network connections, stops system processes, stops the hard disk, and turns off the computer. This option appears by default on the Power button.

## <<Lab Activity>>

1. Apply all the activities given in lab manual on you PC.
2. Display the Start screen and observe the configuration of the existing tiles. Move another tile into the new group and set its size to Small.
3. Configure the Start menu to display only these folders:
   - File Explorer
   - Settings
   - Documents

- Downloads
- Pictures
- Network

4. Open the Settings window and display the color personalization settings. In the Choose a color section, set the three toggle buttons to On.
5. Check whether the taskbar is locked. If it is locked, unlock it.
6. Move the taskbar to the left edge of the screen.