**DAILY ASSESSMENT FORMAT**

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| **Date:** | **7/8/20** | **Name:** | **Sathya br** |
| **Course:** | **Matlab from mathworld** | **USN:** | **4al16ec065** |
| **Topic:** | **Array calculations,calling function , plotting data** | **Semester & Section:** | **6th sem**  **B section** |
| **Github Repository:** | **sathyabr** |  |  |

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| **FORENOON SESSION DETAILS** |
| **Image of session**   Array Operations Array operations execute element by element operations on corresponding elements of vectors, matrices, and multidimensional arrays. If the operands have the same size, then each element in the first operand gets matched up with the element in the same location in the second operand. If the operands have compatible sizes, then each input is implicitly expanded as needed to match the size of the other. For more information, see [Compatible Array Sizes for Basic Operations](https://in.mathworks.com/help/matlab/matlab_prog/compatible-array-sizes-for-basic-operations.html).  As a simple example, you can add two vectors with the same size.  A = [1 1 1]  A =  1 1 1  B = [1 2 3]  B =  1 2 3  A+B  ans =  2 3 4  If one operand is a scalar and the other is not, then MATLAB implicitly expands the scalar to be the same size as the other operand. For example, you can compute the element-wise product of a scalar and a matrix.  A = [1 2 3; 1 2 3]  A =  1 2 3  1 2 3  3.\*A  ans =  3 6 9  3 6 9 |
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| **Date:** | **7/8/20** | **Name:** | **Sathya br** |
| **Course:** | **Cisco certification course** | **USN:** | **4al16ec065** |
| **Topic:** | **Introduction to internet of things** | **Semester & Section:** | **6th sem**  **B section** |
| **Github Repository:** | **sathyabr** |  |  |

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| **AFTERNOON SESSION DETAILS** |
| **Image of session**  C:\Users\user\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Screenshot (472).png Introduction to Internet of Things (IoT) The Internet of things (IoT) is a system of interrelated computing devices, mechanical and digital machines provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. The Internet of things (IoT) is a system of interrelated computing devices, mechanical and digital machines provided with unique [identifiers](https://en.wikipedia.org/wiki/Identifiers" \o "Identifiers) (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.  The definition of the Internet of things has evolved due to the convergence of multiple technologies, real-time [analytics](https://en.wikipedia.org/wiki/Analytics" \o "Analytics), [machine learning](https://en.wikipedia.org/wiki/Machine_learning" \o "Machine learning), [commodity](https://en.wikipedia.org/wiki/Commodity" \o "Commodity) [sensors](https://en.wikipedia.org/wiki/Sensors" \o "Sensors), and [embedded systems](https://en.wikipedia.org/wiki/Embedded_system" \o "Embedded system). Traditional fields of [embedded systems](https://en.wikipedia.org/wiki/Embedded_system" \o "Embedded system), [wireless sensor networks](https://en.wikipedia.org/wiki/Wireless_sensor_network" \o "Wireless sensor network), [control systems](https://en.wikipedia.org/wiki/Control_system" \o "Control system), [automation](https://en.wikipedia.org/wiki/Automation" \o "Automation) (including [home](https://en.wikipedia.org/wiki/Home_automation" \o "Home automation) and [building automation](https://en.wikipedia.org/wiki/Building_automation" \o "Building automation)), and others all contribute to enabling the Internet of things. In the consumer market, IoT technology is most synonymous with products pertaining to the concept of the "[smart home](https://en.wikipedia.org/wiki/Smart_home_technology" \o "Smart home technology)", covering devices and [appliances](https://en.wikipedia.org/wiki/Home_appliance" \o "Home appliance) (such as lighting fixtures, [thermostats](https://en.wikipedia.org/wiki/Thermostats" \o "Thermostats), home [security systems](https://en.wikipedia.org/wiki/Security_systems" \o "Security systems) and cameras, and other home appliances) that support one or more common ecosystems, and can be controlled via devices associated with that ecosystem, such as [smartphones](https://en.wikipedia.org/wiki/Smartphone" \o "Smartphone) and [smart speakers](https://en.wikipedia.org/wiki/Smart_speaker" \o "Smart speaker).  There are a number of serious concerns about dangers in the growth of IoT, especially in the areas of [privacy](https://en.wikipedia.org/wiki/Digital_privacy" \o "Digital privacy) and [security](https://en.wikipedia.org/wiki/Digital_security" \o "Digital security), and consequently industry and governmental moves to address these concerns have begun.  he main concept of a network of smart devices was discussed as early as 1982, with a modified [Coca-Cola](https://en.wikipedia.org/wiki/Coca-Cola" \o "Coca-Cola) [vending machine](https://en.wikipedia.org/wiki/Vending_machine" \o "Vending machine) at [Carnegie Mellon University](https://en.wikipedia.org/wiki/Carnegie_Mellon_University" \o "Carnegie Mellon University) becoming the first Internet-connected appliance, able to report its inventory and whether newly loaded drinks were cold or not. [Mark Weiser](https://en.wikipedia.org/wiki/Mark_Weiser" \o "Mark Weiser)'s 1991 paper on [ubiquitous computing](https://en.wikipedia.org/wiki/Ubiquitous_computing" \o "Ubiquitous computing), "The Computer of the 21st Century", as well as academic venues such as UbiComp and PerCom produced the contemporary vision of the IoT. In 1994, Reza Raji described the concept in [IEEE Spectrum](https://en.wikipedia.org/wiki/IEEE_Spectrum" \o "IEEE Spectrum) as "[moving] small packets of data to a large set of nodes, so as to integrate and automate everything from home appliances to entire factories". Between 1993 and 1997, several companies proposed solutions like [Microsoft](https://en.wikipedia.org/wiki/Microsoft" \o "Microsoft)'s [at Work](https://en.wikipedia.org/wiki/At_Work" \o "At Work) or [Novell](https://en.wikipedia.org/wiki/Novell" \o "Novell)'s [NEST](https://en.wikipedia.org/wiki/Novell_Embedded_Systems_Technology" \o "Novell Embedded Systems Technology). The field gained momentum when [Bill Joy](https://en.wikipedia.org/wiki/Bill_Joy" \o "Bill Joy) envisioned [device-to-device](https://en.wikipedia.org/wiki/Device-to-device" \o "Device-to-device) communication as a part of his "Six Webs" framework, presented at the World Economic Forum at Davos in 1999.  The term "Internet of things" was likely coined by [Kevin Ashton](https://en.wikipedia.org/wiki/Kevin_Ashton" \o "Kevin Ashton) of [Procter & Gamble](https://en.wikipedia.org/wiki/Procter_%26_Gamble" \o "Procter & Gamble), later [MIT](https://en.wikipedia.org/wiki/Massachusetts_Institute_of_Technology" \o "Massachusetts Institute of Technology)'s [Auto-ID Center](https://en.wikipedia.org/wiki/Auto-ID_Labs" \o "Auto-ID Labs), in 1999, though he prefers the phrase "Internet for things". At that point, he viewed [radio-frequency identification](https://en.wikipedia.org/wiki/Radio-frequency_identification" \o "Radio-frequency identification) (RFID) as essential to the Internet of things, which would allow computers to manage all individual things.  Defining the Internet of things as "simply the point in time when more 'things or objects' were connected to the Internet than people", [Cisco Systems](https://en.wikipedia.org/wiki/Cisco_Systems" \o "Cisco Systems) estimated that the IoT was "born" between 2008 and 2009, with the things/people ratio growing from 0.08 in 2003 to 1.84 in 2010.  The key driving force behind the Internet of things is the [MOSFET](https://en.wikipedia.org/wiki/MOSFET" \o "MOSFET) (metal-oxide-semiconductor field-effect transistor, or MOS transistor), which was originally invented by [Mohamed M. Atalla](https://en.wikipedia.org/wiki/Mohamed_M._Atalla" \o "Mohamed M. Atalla) and [Dawon Kahng](https://en.wikipedia.org/wiki/Dawon_Kahng" \o "Dawon Kahng) at [Bell Labs](https://en.wikipedia.org/wiki/Bell_Labs" \o "Bell Labs) in 1959. The MOSFET is the basic building block of most modern [electronics](https://en.wikipedia.org/wiki/Electronics" \o "Electronics), including [computers](https://en.wikipedia.org/wiki/Computers" \o "Computers), [smartphones](https://en.wikipedia.org/wiki/Smartphones" \o "Smartphones), [tablets](https://en.wikipedia.org/wiki/Tablet_computer" \o "Tablet computer) and [Internet](https://en.wikipedia.org/wiki/Internet" \o "Internet) services. [MOSFET scaling](https://en.wikipedia.org/wiki/MOSFET_scaling" \o "MOSFET scaling) miniaturization at a pace predicted by [Dennard scaling](https://en.wikipedia.org/wiki/Dennard_scaling" \o "Dennard scaling) and [Moore's law](https://en.wikipedia.org/wiki/Moore%27s_law" \o "Moore's law) has been the driving force behind technological advances in the [electronics industry](https://en.wikipedia.org/wiki/Electronics_industry" \o "Electronics industry) since the late 20th century. MOSFET scaling has been extended into the early 21st century with advances such as reducing [power consumption](https://en.wikipedia.org/wiki/Power_consumption" \o "Power consumption), [silicon-on-insulator](https://en.wikipedia.org/wiki/Silicon-on-insulator" \o "Silicon-on-insulator) (SOI) [semiconductor device fabrication](https://en.wikipedia.org/wiki/Semiconductor_device_fabrication" \o "Semiconductor device fabrication), and [multi-core processor](https://en.wikipedia.org/wiki/Multi-core_processor" \o "Multi-core processor) technology, leading up to the Internet of things, which is being driven by [MOSFETs scaling down](https://en.wikipedia.org/wiki/List_of_semiconductor_scale_examples" \o "List of semiconductor scale examples) to [nanoelectronic](https://en.wikipedia.org/wiki/Nanoelectronic" \o "Nanoelectronic) levels with reducing energy consumption. Consumer applications[[edit](https://en.wikipedia.org/w/index.php?title=Internet_of_things&action=edit&section=3" \o "Edit section: Consumer applications)] A growing portion of IoT devices are created for consumer use, including connected vehicles, [home automation](https://en.wikipedia.org/wiki/Home_automation" \o "Home automation), [wearable technology](https://en.wikipedia.org/wiki/Wearable_technology" \o "Wearable technology), connected health, and appliances with remote monitoring capabilities. Smart home[[edit](https://en.wikipedia.org/w/index.php?title=Internet_of_things&action=edit&section=4" \o "Edit section: Smart home)] IoT devices are a part of the larger concept of home automation, which can include lighting, heating and air conditioning, media and security systems. Long-term benefits could include energy savings by automatically ensuring lights and electronics are turned off.  A smart home or automated home could be based on a platform or hubs that control smart devices and appliances. For instance, using [Apple](https://en.wikipedia.org/wiki/Apple_Inc." \o "Apple Inc.)'s [HomeKit](https://en.wikipedia.org/wiki/HomeKit" \o "HomeKit), manufacturers can have their home products and accessories controlled by an application in [iOS](https://en.wikipedia.org/wiki/IOS" \o "IOS) devices such as the [iPhone](https://en.wikipedia.org/wiki/IPhone" \o "IPhone) and the [Apple Watch](https://en.wikipedia.org/wiki/Apple_Watch" \o "Apple Watch). This could be a dedicated app or iOS native applications such as [Siri](https://en.wikipedia.org/wiki/Siri" \o "Siri). This can be demonstrated in the case of Lenovo's Smart Home Essentials, which is a line of smart home devices that are controlled through Apple's Home app or Siri without the need for a Wi-Fi bridge. There are also dedicated smart home hubs that are offered as standalone platforms to connect different smart home products and these include the [Amazon Echo](https://en.wikipedia.org/wiki/Amazon_Echo" \o "Amazon Echo), [Google Home](https://en.wikipedia.org/wiki/Google_Home" \o "Google Home), Apple's [HomePod](https://en.wikipedia.org/wiki/HomePod" \o "HomePod), and Samsung's [SmartThings Hub](https://en.wikipedia.org/wiki/SmartThings" \o "SmartThings). In addition to the commercial systems, there are many non-proprietary, open source ecosystems; including Home Assistant, OpenHAB and Domoticz. |