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| **Date:** | **13-07-2020** | **Name:** | **Dhanya Shetty** |
| **Course:** | **Coursera** | **USN:** | **4AL17EC026** |
| **Topic:** | **Mathematics for Machine Learning: Linear Algebra** | **Semester & Section:** | **6th A** |
| **Github Repository:** | **Dhanya Shetty\_026** |  |  |

**DAILY ASSESSMENT FORMAT**

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| **FORENOON SESSION DETAILS(9.00am to 1.00pm)** |
| C:\Users\Hp\Desktop\report\13mat111111.PNG  C:\Users\Hp\Desktop\report\13mat22222.PNG  **C:\Users\Hp\Desktop\report\13mat33333.PNG**  **C:\Users\Hp\Desktop\report\13mat44444.PNG**  **C:\Users\Hp\Desktop\report\13mat55555.PNG**  **Cosine and Dot product :**  Algebraically, the **dot product** is the sum of the **products** of the corresponding entries of the two sequences of numbers. Geometrically, it is the **product** of the Euclidean magnitudes of the two vectors and the **cosine** of the angle between them.  In mathematics, the dot product or scalar product is an algebraic operation that takes two equal-length sequences of numbers and returns a single number.  These definitions are equivalent when using Cartesian coordinates. In modern [geometry](https://en.wikipedia.org/wiki/Geometry), [Euclidean spaces](https://en.wikipedia.org/wiki/Euclidean_space) are often defined by using [vector spaces](https://en.wikipedia.org/wiki/Vector_space). In this case, the dot product is used for defining lengths (the length of a vector is the [square root](https://en.wikipedia.org/wiki/Square_root) of the dot product of the vector by itself) and angles (the cosine of the angle of two vectors is the quotient of their dot product by the product of their lengths).  The dot product may be defined algebraically or geometrically. The geometric definition is based on the notions of angle and distance (magnitude of vectors). The equivalence of these two definitions relies on having a [Cartesian coordinate system](https://en.wikipedia.org/wiki/Cartesian_coordinate_system) for Euclidean space.  In modern presentations of [Euclidean geometry](https://en.wikipedia.org/wiki/Euclidean_geometry), the points of space are defined in terms of their [Cartesian coordinates](https://en.wikipedia.org/wiki/Cartesian_coordinates), and [Euclidean space](https://en.wikipedia.org/wiki/Euclidean_space) itself is commonly identified with the [real coordinate space](https://en.wikipedia.org/wiki/Real_coordinate_space) **R***n*. In such a presentation, the notions of length and angles are defined by means of the dot product. The length of a vector is defined as the [square root](https://en.wikipedia.org/wiki/Square_root) of the dot product of the vector by itself, and the [cosine](https://en.wikipedia.org/wiki/Cosine) of the (non oriented) angle of two vectors of length one is defined as their dot product. So the equivalence of the two definitions of the dot product is a part of the equivalence of the classical and the modern formulations of Euclidean geometry.  The distance is covered along one axis or in the direction of force and there is no need of perpendicular axis or sin theta. In cross **product** the angle between must be greater than 0 and less than 180 degree it is max at 90 degree. ... That's why we use **cos** theta for **dot product** and sin theta for cross **product**.  Proof of the **Law of Cosines**. The easiest way to prove this is by using the concepts of **vector** and **dot product**. In general the **dot product** of two vectors is the **product** of the lengths of their line segments times the **cosine** of the angle between them.  An important use of the **dot product** is to test whether or not two vectors are orthogonal. Two vectors are orthogonal if the angle between them is 90 degrees. ... Thus, two non-zero vectors have **dot product** zero if and only if they are orthogonal.  **Dot products** are very geometrical objects. They actually encode relative information about vectors, specifically they tell us "how much" one vector is in the direction of another. Particularly, the **dot product** can tell us if two vectors are (anti)parallel or if they are perpendicular.  A **dot product** of two vectors is the **product** of their lengths times the cosine of the angle between them. If the **dot product** is **0**, then either the length of one or both is **0**, or the angle between them is 90 degrees.  The **dot product** as **projection**. The **dot product** of the vectors a (in blue) and b (in green), when divided by the magnitude of b, is the **projection** of a onto b.   |  |  |  |  | | --- | --- | --- | --- | | **Date:** | **13-07-2020** | **Name:** | **Dhanya Shetty** | | **Course:** | **Coursera** | **USN:** | **4AL17EC026** | | **Topic:** | **Industrial IoT on Google Cloud Platform** | **Semester & Section:** | **6th A** | | **Github Repository:** | **Dhanya Shetty\_026** |  |  |   **C:\Users\Hp\Desktop\report\goog1111.PNG**  **C:\Users\Hp\Desktop\report\goog222222.PNG**  **C:\Users\Hp\Desktop\report\goog33333.PNG**  **Industrial** Internet of Things (**IoT) on Google Cloud Platform** (GCP) brought to you by the **Google Cloud** team. ... The course discusses sensors and devices but the focus is on the **cloud** side. You'll learn about the importance of scaling, device communication, and processing streaming data.  **IoT cloud** refers to any number of **cloud** services that power the **IoT**. These include the underlying infrastructure needed for processing and storing **IoT** data, whether in real time or not. ... Discover the power of Arm's transformative device-to-data **platform**.  **Google Cloud** Internet of Things (**IoT**) **Core** is a fully managed service for securely connecting and managing **IoT** devices, from a few to millions. Ingest data from connected devices and build rich applications that integrate with the other big data services of **Google Cloud** Platform.  Father of IoT, **Kevin Ashton**, says, 'if you think IoT is a buzzword, your business will fail'.  Which cloud is best for IoT?  **Top 11 Cloud Platforms for Internet of Things (IoT)**   1. Thingworx 8 IoT Platform. Thingworx is one of the leading IoT platforms for industrial companies, which provides easy connectivity for devices. 2. Microsoft Azure IoT Suite. 3. Google Cloud's IoT Platform. 4. IBM Watson IoT Platform. 5. AWS IoT Platform. 6. Cisco IoT Cloud Connect. 7. Salesforce IoT Cloud. 8. Kaa IoT Platform.   **Arduino IoT Cloud** is an application that helps makers build connected objects in a quick, easy and secure way. You can connect multiple devices to each other and allow them to exchange real-time data.  **IoT** is essentially a platform where embedded devices are connected to the internet, so they can collect and exchange data with each other. It enables devices to interact, collaborate and, learn from each other's experiences just like humans do.M  What are examples of IoT?  **Top Internet-of-Things (IoT)**   * Connected appliances. * Smart home security systems. * Autonomous farming equipment. * Wearable health monitors. * Smart factory equipment. * Wireless inventory trackers. * Ultra-high speed wireless internet. * Biometric cybersecurity scanners   **ARM Microcontroller revision class**  **C:\Users\Hp\Desktop\DC\Screenshot_20200713-093517_Zoom.jpg**  **C:\Users\Hp\Desktop\DC\Screenshot_20200713-094036_Zoom.jpg**  **C:\Users\Hp\Desktop\DC\Screenshot_20200713-094700_Zoom.jpg**  **C:\Users\Hp\Desktop\DC\Screenshot_20200713-094759_Zoom.jpg**  **C:\Users\Hp\Desktop\DC\Screenshot_20200713-100949_Zoom.jpg**  **C:\Users\Hp\Desktop\DC\Screenshot_20200713-103046_Zoom.jpg**  **C:\Users\Hp\Desktop\DC\Screenshot_20200713-103541_Zoom.jpg**  **WEBINAR ON A TOPIC DRONE INDUSTRY INSIGHTS HELD BY Mr. Leo Peter Charles ON MONDAY , 13 JULY 2020**  C:\Users\Hp\Desktop\DC\Screenshot_20200713-110737_Zoom.jpg  C:\Users\Hp\Desktop\DC\Screenshot_20200713-111124_Zoom.jpg  C:\Users\Hp\Desktop\DC\Screenshot_20200713-111139_Zoom.jpg  C:\Users\Hp\Desktop\DC\Screenshot_20200713-111704_Zoom.jpg  C:\Users\Hp\Desktop\DC\Screenshot_20200713-112109_Zoom.jpg  C:\Users\Hp\Desktop\DC\Screenshot_20200713-115741_Zoom.jpg  C:\Users\Hp\Desktop\DC\Screenshot_20200713-114346_Zoom.jpg |

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