DAILY ASSESSMENT FORMAT

Date:	17 JULY 2020	Name:	PAVITHRAN S
Course:	Coursera	USN:	4AL17EC068
Topic:	Mathematics for Machine Learning: Linear Algebra	Semester & Section:	6th sem & 'B' Sec

FORENOON SESSION DETAILS (9.00am to 1.00pm)

Vectors and matrices :

Scalars, **Vectors and Matrices**
A **vector** is a list of numbers (can be in a row or column), A **matrix** is an array of numbers (one or more rows, one or more columns).

vector in matrix algebra

It can be said that the **matrix algebra** notation is shorthand for the corresponding scalar longhand. **Vectors**. A **vector** is a column of numbers. {\bf a} = \left[\begin{array}{c} a_1 \\ a_2 \\ \vdots \\ a_p \end{array} \right] The scalars a_i are the elements of **vector** {\bf a}.

Row Matrix and example
In an m × n **matrix**, if m = 1, the **matrix** is said to be a **row matrix**. Definition of **Row Matrix**: If a **matrix** have only one **row** then it is called **row matrix**. **Examples** of **row matrix**: ... [13025] is a **row matrix**.

Elements of Matrix :
The numbers, symbols, or expressions in the **matrix** are called its entries or its **elements**. The horizontal and vertical lines of entries in a **matrix** are called rows and columns, respectively.

So as long as we stick to **matrices** of the same size, we do in fact have a **vector** space. So the long and short of it is that **vectors** can be **matrices** and **matrices** can be **vectors**. Now, **Matrices** are **vectors** - from the **vector** space of **matrices** - but not **all vectors** are **matrices**. Scalars, **Vectors and Matrices**

A **vector** is a list of numbers (can be **in a** row or column), A **matrix** is an array of numbers (one or more rows, one or more columns).

Vectors are a type of matrix having only one **column** or one **row**. A **vector** having only one **column** is called a **column vector**, and a **vector** having only one **row** is called a **row vector**. For example, matrix a is a **column vector**, and matrix a' is a **row vector**.

A **matrix** is a collection of numbers arranged into a fixed number of rows and columns. Usually the numbers are real numbers. In general, **matrices** can contain complex numbers but we won't see those here. Here is an **example** of a **matrix** with three rows and three columns: The top row is row 1.

The series primarily consists of a trilogy of science fiction action films beginning with The Matrix (1999) and continuing with two sequels, **The Matrix Reloaded** and **The Matrix Revolutions** (both in 2003), all written and directed by the Wachowskis and produced by Joel Silver.

Main point of the Matrix

The **Matrix** trilogy suggests that everyone has the individual responsibility to make the choice between the real world and an artificial world. Though Neo is the exemplar of free will, fate plays a large role in his adventure. Neo relies on the Oracle, and everything she says comes true in some way.

Application of **Matrices**

Almost every branch of physics, including classical mechanics, optics, electromagnetism, quantum mechanics, and quantum electrodynamics, **matrices** are used to study physical phenomena, such as the motion of rigid bodies.

Matrices have also come to have important applications in computer graphics, where they have been used to represent rotations and other transformations of images. is a 2×3 **matrix**. A **matrix** with n rows and n columns is called a square **matrix** of order n

Matrices are classified according to the number of rows and columns, and the specific elements therein. (i) Row **Matrix**: A **matrix** which has exactly one row is called a row **matrix**. The above two **matrices** are row **matrices** because each has only one row.

Matrices are a **useful** way to represent, manipulate and study linear maps between finite dimensional vector spaces (if you have chosen basis). **Matrices** can also represent quadratic forms (it's **useful**, for example, in analysis to study hessian **matrices**, which help us to study the behavior of critical points).

The numbers in a **matrix** can represent data, and they can also represent **mathematical** equations. Even more frequently, they're called upon to multiply **matrices**. **Matrix** multiplication can be

thought of as solving linear equations for particular variables.

The term **matrix** was introduced by the 19th-century English mathematician James Sylvester, but it was his friend the mathematician Arthur Cayley who developed the algebraic aspect of **matrices** in two papers in the 1850s.

In biology, **matrix** is the material (or tissue) in animal or plant. Structure of connective tissues is an extracellular **matrix**. ... It is found in various connective tissue. It is generally used as a jelly like structure instead of cytoplasm in connective tissue.

In the **mitochondrion**, the **matrix** is the space within the inner membrane. The word "**matrix**" stems from the fact that this space is viscous, compared to the relatively aqueous cytoplasm.

The **extracellular matrix** (ECM) is the non-cellular component present within all tissues and organs, and provides not only essential physical scaffolding for the cellular constituents but also initiates crucial biochemical and biomechanical cues that are required for tissue morphogenesis, differentiation and homeostasis.

CERTIFICATE: