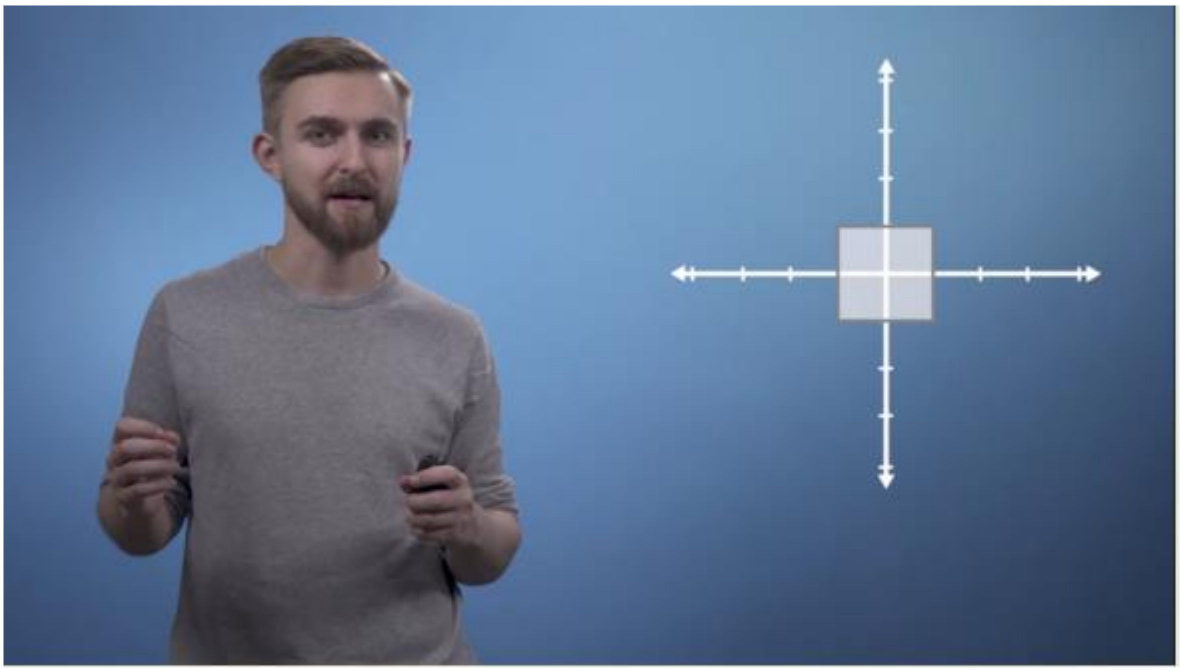
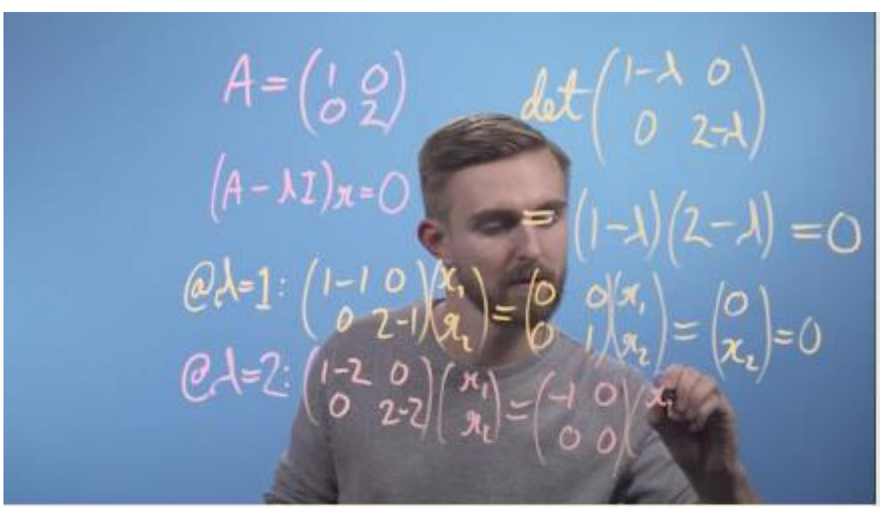
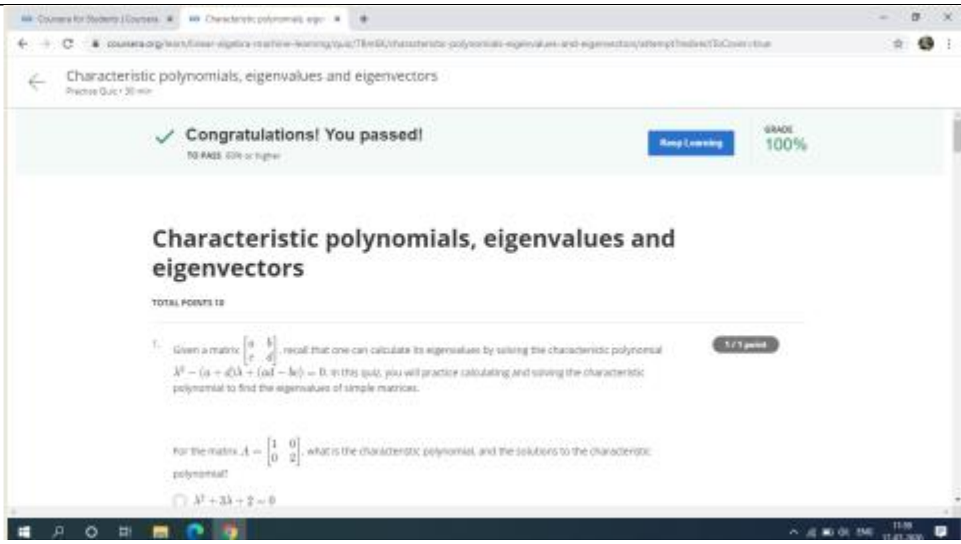
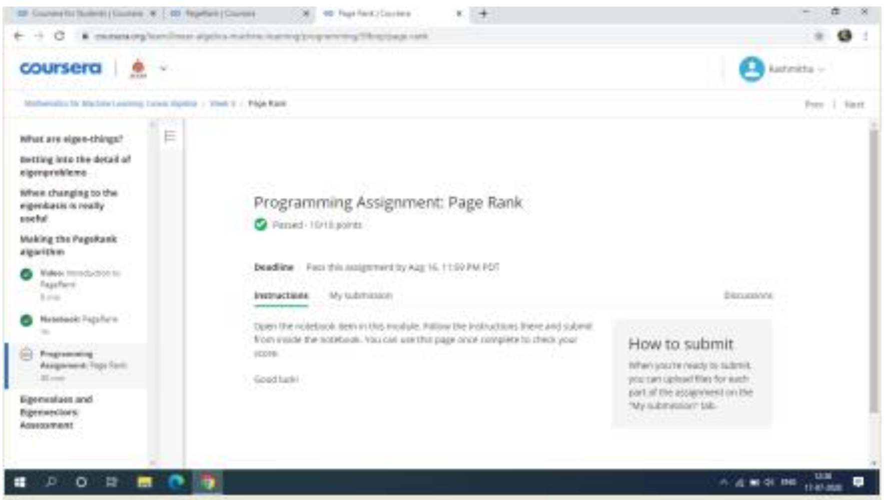
DAILY ASSESSMENT FORMAT

Date:	**17^{th} July 2020**	**Name:**	**Poorvi j gowda**
Course:	**coursera**	**USN:**	**4AL17EC077**
Topic:	**Mathematics for machine learning:Linear Algebra**	**Semester & Section:**	**6^{th} sem 'B' sec**
Github Repository:	**Poorvi-2000**		

FORENOON SESSION DETAILS
Image of session  


Characteristic polynomials, eigenvalues and eigenvectors
Congratulations! You passed!
Keep Learning
GRADE
100%
Characteristic polynomials, eigenvalues and eigenvectors
For the matrix $A = \begin{bmatrix} 1 & 0 \\ 0 & 2 \end{bmatrix}$, what is the characteristic polynomial, and the solutions to the characteristic polynomial?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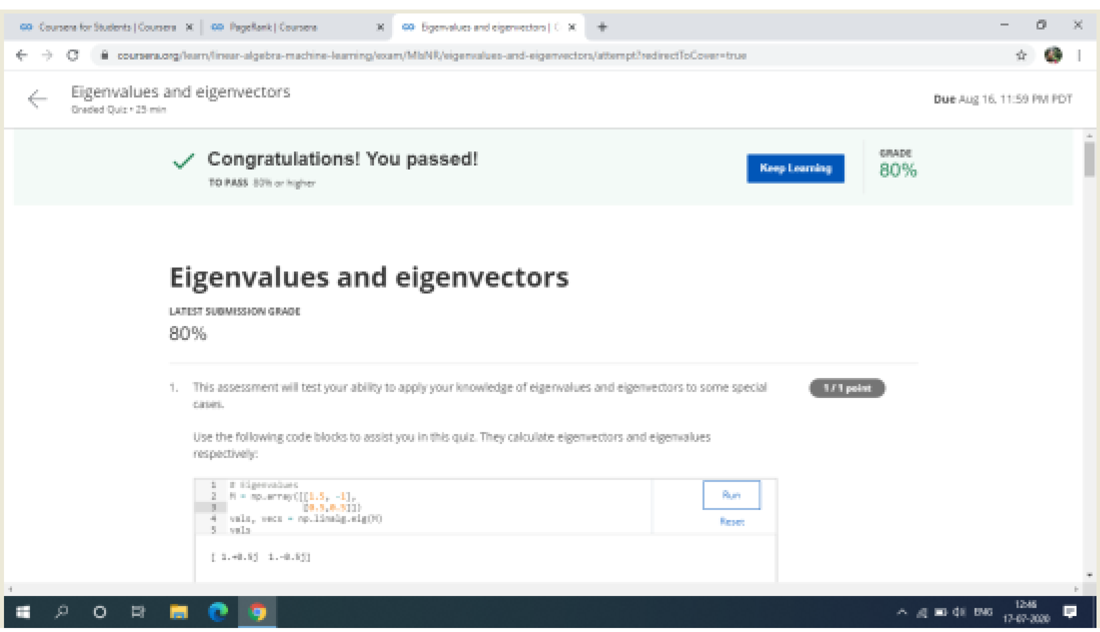
Programming Assignment: Page Rank
How to submit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Eigenvalues and eigenvectors |
coursera.org/learn/linear-algebra-machine-learning/exam/MbNR/eigenvalues-and-eigenvectors/attempt?redirectToCover=true
Eigenvalues and eigenvectors
Graded Quiz • 25 min
Due Aug 16, 11:59 PM PDT
Congratulations! You passed!
TO PASS 80% or higher
Keep Learning
GRADE
80%
Eigenvalues and eigenvectors
LATEST SUBMISSION GRADE
80%
1. This assessment will test your ability to apply your knowledge of eigenvalues and eigenvectors to some special cases.
1 / 1 point
Use the following code blocks to assist you in this quiz. They calculate eigenvectors and eigenvalues respectively:
Run
Reset

Eigenvalues & eigenvectors :-

Horizontal of three vectors will not be pointing in the same direction after a vertical scaling

→ There are 1 eigenvectors does the transformation have

→ We can posibly draw 1 vectors which are not eigenvectors

Calculating eigen vectors :-

$$Ax = \lambda x$$

$$\underbrace{(A - \lambda I)}_{=0} x = 0$$

$$\det(A - \lambda I) = 0 \qquad A = \begin{pmatrix} a & b \\ c & d \end{pmatrix}$$

$$\det\left(\begin{pmatrix} a & b \\ c & d \end{pmatrix} - \begin{pmatrix} \lambda & 0 \\ 0 & \lambda \end{pmatrix}\right) = 0$$

$$\det\left(\begin{pmatrix} a & b \\ c & d \end{pmatrix} - \begin{pmatrix} \lambda & 0 \\ 0 & \lambda \end{pmatrix}\right) = 0$$

$$\lambda^2 - (a+d)\lambda + ad - bc = 0$$

$$A = \begin{pmatrix} 1 & 0 \\ 0 & 2 \end{pmatrix} \qquad \det\begin{pmatrix} 1-\lambda & 0 \\ 0 & 2-\lambda \end{pmatrix}$$

$$(A - \lambda I)x = 0 \qquad = (1-\lambda)(2-\lambda) = 0$$

$$@\ \lambda = 1 : \begin{pmatrix} 1-1 & 0 \\ 0 & 2-1 \end{pmatrix}\begin{pmatrix} x_1 \\ x_2 \end{pmatrix} = \begin{pmatrix} 0 & 0 \\ 0 & 1 \end{pmatrix}\begin{pmatrix} x_1 \\ x_2 \end{pmatrix} = \begin{pmatrix} 0 \\ x_2 \end{pmatrix} = 0$$

$$@\ \lambda = 2 : \begin{pmatrix} 1-2 & 0 \\ 0 & 2-2 \end{pmatrix}\begin{pmatrix} x_1 \\ x_2 \end{pmatrix} = \begin{pmatrix} -1 & 0 \\ 0 & 0 \end{pmatrix}\begin{pmatrix} x_1 \\ x_2 \end{pmatrix} = \begin{pmatrix} -x_1 \\ 0 \end{pmatrix} = 0$$

$$@\ \lambda = 1 : x = \begin{pmatrix} t \\ 0 \end{pmatrix}$$

$$A = \begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix}$$

$$\det\begin{pmatrix} 0-\lambda & -1 \\ 1 & 0-\lambda \end{pmatrix} = \lambda^2 + 1 = 0$$

Imperial College London

COURSE CERTIFICATE

07/17/2020

Poorvi hj

has successfully completed

Mathematics for Machine Learning: Linear Algebra

an online non-credit course authorized by Imperial College London and offered through Coursera

EDUCATION FOR EVERYONE coursera COURSE CERTIFICATE

David Dye and Samuel J. Cooper

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Coursera has confirmed the identity of this individual and their participation in the course.