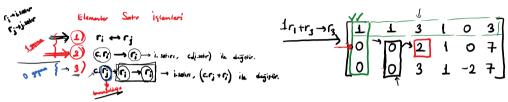
3. Hafta Pazartesi Dersi

08 Mart 2021 Pazartesi 11:33





$$\frac{\frac{1}{2}r_2 \rightarrow r_2}{\longrightarrow} \begin{bmatrix}
1 & 1 & 3 & 1 & 0 & 3 \\
0 & 0 & \boxed{1} & \frac{1}{2} & 0 & \frac{7}{2} \\
0 & 0 & \boxed{3} & 1 & -2 & 7
\end{bmatrix}$$

$$-3r_{2}+r_{1} \rightarrow r_{1}$$

$$0 \quad 0 \quad 1 \quad 0 \quad -2 \quad 0$$

$$0 \quad 0 \quad 1 \quad 4 \quad 7$$

$$0 \quad 0 \quad 1 \quad 4 \quad 7$$

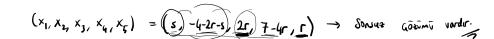
$$\Rightarrow X_3 = 2r$$

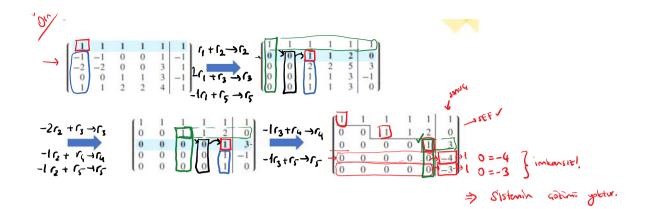
$$\Rightarrow X_4 = 7 - 4r$$
booginhi

$$(x_1) + (x_2) + 2r = -4$$

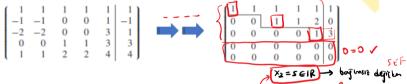
$$(x_1, x_2, x_3, x_4, x_5) = (s) - 4-2r-s, 2r, 7-4r, r) \rightarrow Sonue Gozimi vardir.$$











Gaus

$$\begin{array}{c} x_2 = s \in |R| \rightarrow \text{ boj milt dejith} \\ \xrightarrow{-6-\Gamma} \frac{3}{1} + (x_2) + x_3 + x_4 + x_5 = 1 \\ \hline x_3 + x_4 + 2x_5 = 0 \rightarrow x_3 + (x_1) + 6 = 0 \rightarrow (x_3 = -6-\Gamma) \end{array}$$

$$x_1 + x_3 + x_5 = 1 - x_2 - x_4$$
$$x_3 + 2x_5 = -x_4$$

(4-s, s, -6-r, r, 3): r,selR -> sonsut

x1+5-6-/++++3=1 => [x1=4-5]

m = Dentlem Sayısı n = Degister Sayısı

<u>m >n</u>

* Sistem SEFle Germalidir.

(a):
$$\begin{cases} 1 & 1 & 1 \\ 1 & -1 & 3 \\ -1 & 2 & -2 \end{cases} \xrightarrow{\text{SE}^g} \begin{cases} 1 & 1 & 1 \\ 0 & 1 & -1 \\ \hline{0 & 0 & 1} \end{cases} \xrightarrow{\text{Cotion yok}} .$$

(b):
$$\begin{bmatrix} 1 & 2 & 1 & 1 \\ 2 & -1 & 1 & 2 \\ 4 & 3 & 3 & 4 \\ 2 & -1 & 3 & 5 \end{bmatrix} \xrightarrow{\text{ef}} \begin{bmatrix} 1 & 2 & 1 & 1 \\ 0 & 1 & \frac{1}{3} & 0 \\ 0 & 0 & 1 & \frac{3}{2} \\ 0 & 0 & 0 & 0 \end{bmatrix} \xrightarrow{\text{bet Govim}} \text{vordif}.$$

$$M=n$$
, $Ax=0$ / $Ax=b$

m < n

sonue/hiq -> sistem SEFle cerribulidir.

(a):
$$\begin{pmatrix} 1 & 2 & 1 & 1 \\ 2 & 4 & 2 & 3 \end{pmatrix} \xrightarrow{\xi\xi} \begin{pmatrix} 1 & 2 & 1 & 1 \\ 0 & 0 & 0 & 1 \end{pmatrix} \xrightarrow{\xi = \xi} \xi = \xi = \xi = \xi$$

b):
$$\begin{cases} 1 & 1 & 1 & 1 & 1 & 2 \\ 1 & 1 & 1 & 2 & 2 & 3 \\ 1 & 1 & 1 & 2 & 3 & 2 \end{cases} \xrightarrow{SES} \begin{cases} 1 & 1 & 1 & 1 & 1 & 2 \\ 0 & 0 & 0 & 1 & 1 & 1 \\ 0 & 0 & 0 & 0 & 1 & -1 \end{cases} \xrightarrow{Sonsuf} \begin{cases} 62in & var. \end{cases}$$

$$\xrightarrow{x_1 + x_2 + x_3} \xrightarrow{x_4 + x_5} = 2 \xrightarrow{x_2 = r} \xrightarrow{x_2 = r} \xrightarrow{x_3 = S} \xrightarrow{r, s \in \mathbb{R}}$$

$$\xrightarrow{x_4 + x_5 = -1} \xrightarrow{x_5 = -1} \xrightarrow{x_4 = 2} \xrightarrow{x_4 = 1 - r - S} \xrightarrow{x_5 = -1} \xrightarrow{$$

(1-r-s, r, s, 2, -1): r,s ∈ IR -> sons+ Fin

Matrislerde Islemler

רת . ו 7 רח

$$C.$$
 matrix = matrix
$$C. A_{m \times n} = \left[C.a_{ij} \right]_{m \times n}$$

$$\left[a_{ij} \right]$$

Tkaler Carpna: C. matris = matris

$$c. A_{m\times n} = \begin{bmatrix} c.a_{ij} \end{bmatrix}_{m\times n}$$

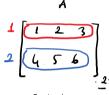
$$\begin{bmatrix} a_{ij} \end{bmatrix} = \begin{bmatrix} -2 & -4 \\ -4 & -3 \end{bmatrix}$$

$$\begin{bmatrix} a_{ij} \end{bmatrix} = \begin{bmatrix} -2 & -4 \\ -4 & -3 \end{bmatrix}$$

$$A_{2\sqrt{2}}$$
, $B_{R\sqrt{2}} = C_{2\sqrt{2}}$

$$A_{2\times3}$$
, $B_{3\times5} = C_{2\times5}$ and $B_{3\times7}$. $A_{2\times3} \rightarrow carpina yapilanat.$

$$A_{3\times 3}$$
. $B_{3\times 3} = C_{3\times 3}$ $B_{3\times 3}$. $A_{3\times 3} = D_{3\times 3}$ $C \neq D$ (both direction)



$$\begin{bmatrix} \frac{1}{4} & \frac{3}{2} & \frac{4}{4} \\ -\frac{1}{2} & 0 & -\frac{1}{4} \\ \frac{2}{3} & \frac{2}{2} & 0 & -\frac{3}{3} \end{bmatrix}$$
Suturiar

-470 F19 Satirlar

$$\frac{A'_{\text{nin}} \quad \underline{1.\text{sature}}}{1.\text{ Garpin}} \quad \bullet \quad B'_{\text{nin}} \quad \underline{1.\text{sature}}$$

$$\frac{A'_{\text{nin}} \quad \underline{1.\text{sature}}}{1.\text{sature}} \quad \bullet \quad (-1, 2, 3) = 1.-1 + 2.2 + 3.3 = 12 \rightarrow C_{41}$$

B'nin 2. suitunu

$$(1,2,3)$$
 • $(0,1,2) = 1.0 + 2.1 + 3.2 = 8 \rightarrow C_{12}$
B'nin 3. sútuny

$$(1,2,3)$$
 . $(-1,2,0) = 1.-1 + 2.2 + 3.0 = 3 \rightarrow C_{13}$

$$(1,2,3)$$
 · $(1,2,-3) = 1.1 + 2.2 + 3.-3 = -4 \rightarrow C_{14}$