

#### PARSHVANATH CHARITABLE TRUSTS

## A.P. SHAH INSTITUTE OF TECHNOLOGY

Department of Computer Science and Engineering
Data Science

Semester:
* Reflexive closure and transitive closure-
* Reflexive closure -
$A = \{1, 2, 3\}$
$R = d(1,1)(2,2)(3,3)$ $M_R = 2$
diagonal value.
So for reflexive relation we must
where for each a GA we must have.
s (a,a) a e A 3 is a diagonal relation and this diagonal relation is A
e.g. A = Sa, b3
$\Delta = \{ (a_1a)(b_1b) \}$
30 reflexive closure of relation R on
Set A is in the second of the
52 = 33 /45
A is not reference
hence Py is not equipment relation.

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Semester:
* Closure of relation
. Let R ha a rolation
TO TOO TO
J godositivity.
P containing R such that S is the subset
- The order of the order of the order
R then s is called the closure of R with respect to P.
1) Reflexive closure
diagonal relation 1 set of A. The reflexive
closure of relation R on set A is RUD
2) Symmetric closure-
THE TOTAL PROPERTY OF THE PARTY
let R-1 be the inverse of R. The symmetricolosure of relation R on set A is
- RUK
3) Transitive closure.  Let R be a relation on set A. The

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Semester :r	Subject :	Academic Year: 20 - 20
, ce	relation is	lefined as -
R* = 1	Rn. The +	R is R*
- Sixtindate	to we have the	2 DAL CIX9 125
2. q. A = 21	(1,1)(1,4)(2	(3) (3,1) (3,3)
16 2 9 15 1	(3,4) g & (1,1) (2,2) (	9 10 0100 000 9
N. Const		1 1 1 1 1 1
RUDA = Y	(1,1) (2,2) (3	3,1) (3,4) 3
This is	reflexive clo	sure of R.
iib Sym	metric closure end the inve 13,43 ) (1,4) (2,3)	to to month.
A = 21,2	13,43	rse of N
R = { (11)	1) (4,1) (3,2)	(3,1) (3,4)
60 0000 0 0 0 C1 1 1	3 (1,1)(144)	SITE OF STATE
(3,4)	(4,1)(3,2) C	1,3)(4,3)?
This is	symmetric cl	osure of R
- 1- 12 + 1	ac milions i	The state of the s



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Semester:
iii'd Transitive closure, we need to
pr = Rh-1 d to find Rz, R, Ps until
is achieved in stop when this condition
polypood of since finding higher
is achieved since finding higher  powers of R would be the same.
$ReR = \begin{cases} (1,1)(1,4)(2,3)(3,1)(3,4)3\\ ReR = \begin{cases} 2 \\ 2 \\ 1,1 \end{cases}(1,4)(2,1)(2,4)(3,1)(3,4) \end{cases}$ $ReR = \begin{cases} 2 \\ 2 \\ 1,1 \end{cases}(1,4)(2,1)(2,4)(3,1)(3,4) \end{cases}$ $ReR = \begin{cases} 3 \\ 2 \\ 1,1 \end{cases}(1,1)(1,4)(2,1)(2,4)(3,1)(3,4) \end{cases}$
ROR= D2 - 5 (1 1) (2,3) (3,1) (3,4)3
ROROR = 83 1 (11) (1/4) (2,1) (2,4) (3,1) (3,4) 4
10101 (21) (21) (21) (31) (314)3
ue stop here
R = K
Transitive closure
A6)
$=$ $\{(1,1)(1,4)(2,1)(2,3)$
$= \frac{\{(1,1)(1,4)(2,1)(2,3)}{(2,4)(3,1)(3,4)^{2}}$
140/6:-
$\frac{1}{2} = \frac{1}{2} = \frac{1}{2} \left( \frac{1}{2} \right) $
R = S(1,1)(114)(2,3)(3,1)(3,4)
ROR = {(1,1)(1,14)(2,1)(2,4)(3,1)(3,4)

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