

A China Chin	PAGE
CS747:	Weekly Ones
VIBHAV AGGARWAL	
190050128	Can the man to the work in
a) In cv, we were calculating	V _{t+1} using V _t , so the order (1) would not matter since
in which we colculate Vy	(5) would not matter since
Ve is fixed for that iteration	•
	alsouted and will be the
However in QV, we are our	my immedicately updating the
value of V and using the	se updested value in the
calculation of next state	1. 7 is working the safe.
The operator B co	vresponding to the pseudocod
is given by:-	
patron 11 X 2 / chills	197 - 12/07 71
(B(F))(S) and menx (>	7(5, a, 5') { R(5, a, 5') + 8(8(7)(5'))
acA \ sice	s and to dead will when I
4.	7 7(5,9,5') & R(5,0,5') + 8 F(5')4)
LESTER - COCETA 1 121	For skin sixt m. 72.
222 to Q NIN- FILL 2	
=	$(\mathcal{B}^*(\mathcal{S}_s))(s)$
	- Lts vartrakert
where	
C_{-1}	

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(b) (1) B is a contraction merphine	7H7 8D
	MEMBER AGENERAL
We need to Show 11 B(F) -	B(G)
Equivalently we can sho	ω , $(B(F))(s) - (R(G))(s)$
was strong to bloom on the	< X 11 F-G(10 + Y S € 11-14)
	street; test all herit is or
We do this by induction	•
Rase cox: taketa with them is some	Property in 1979, and other se
For s=1, (BLF)(s)=	(B*(F))(s) by abbluing
the definition of B.	it has do in below
Since B* is a contracti	on mabbing, we have
(R(F))(1) - (R(G)))(D) { X E-6
1021到机工(15.10219 1/15.021下一	(R(F))(S) = West (S
Induction hypothesis:	9 , 4 9 0
(1/2)9) + (2, 2)9) (2021 F	yan.
For some startens, 31, le	$L \mid (B(F))(S) - (B(G))(S) $
,	< 8/18-61/8 1 4 3 < 50
(2)(2011 57)	
Induction etch:	
*	when :
We need to show that I (B(F	=) (So +1) - (B(G)) (So +1)
	EXIIF-G1100
27 (2	74
$ (B(F))(S_0+1) - (B(G))(S_0+1) =$	max 5 T(s, +1 a, s) } R(s, e), a, s')
	max \(\sum_{S'(S_{0})} \) \(\frac{\(\text{R(S_0} \) \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\
+ Z 7(50+1, a,51) & R(50+1, a, 51)	$) + \times FR(zi) \setminus)$
	·
- max (< same express	ion for G 7)
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the transfer of the state of th
ach (305)21454
$+ \geq T(S_0+1,q,S)(F(S')-G_1(S'))$
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75.17
\[\text{Y max} \] \[\text{T \(\sigma_0 \text{t}} \] \[\text{T \(\sigma_0 \text{t}} \] \[\text{R \(\sigma_0 \text{t}} \] \[\text{R \(\sigma_0 \text{t}} \) \[\text{T \(\sigma_0 \text{t}} \] \[\text{T \(\sigma_0 \text{t}} \] \[\text{R \(\sigma_0 \text{t}} \) \[R \(\sigma_0
Manager Company Control of the contr
+ > T(st), q, si) F(si) - G(si)
2,3241
We know that (B(F))(51) - (B(G))(5)) {8 F-G 100
for 51 < 5,71
[I reluction hypothers]
Also 1F(S)) - G(S)) (51/1F-G/1/10 (C))
=> (B(F))(5,71) - (B(S))(5,71) & X max \(\sigma\) \(\si
aeA (sies
= 8/1F-G/bg
Hence, by strong induction, we get 11B(F)-B(q)110
EXILE-CII
as desired.
(2) V* is the fixed point of B
Let some V' be the fixed point of B.
So, we have, $V' = B(V')$
=> V'(s) = max(= T(s,a,s)) f e(s,a,s) + x(B(v))(s) V
7 5 7(s, a,s') \ R(s, a,s) + X V'(s') \)
5,32

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Since V' = B(V),

VI(S) = max (> T(S, a,S)) { R(S, a,s)) - (X (S'))

7 = 7 (5 9,51) { R(5,9,51) + XV1 (51) }

= max \(\frac{7}{5}\) \(\frac{1}{6}\) \(\frac{

This is the same expression as V* and therefore V'= V*.

Hence, & QV comerges to V* cy 7-20.

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