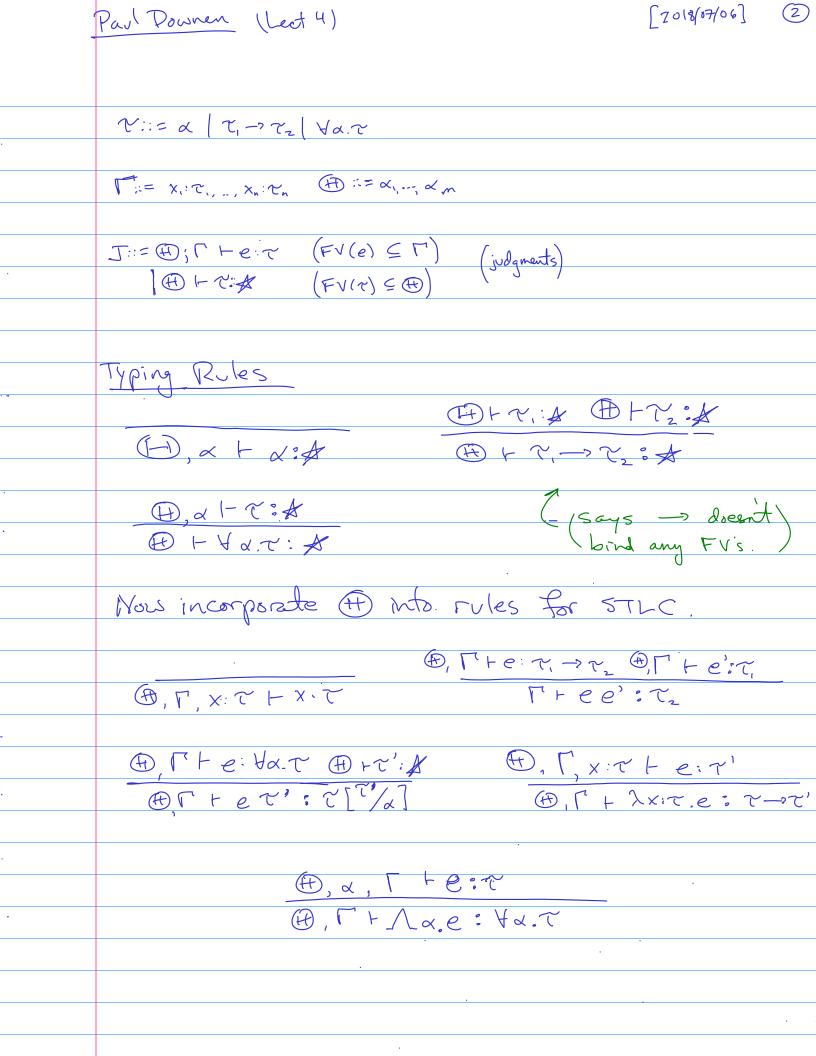
Paul Downen (Lecture 4) [2018/07/06] (1) Polymorphism id Bool = 2 (x: Bool). x : Bool -> Bool id Num = x (x:Num)x : Nat -> Nat il Alpha = >(xix).xi ~ → x We want to avoid this redundancy. What is the identity function? How do we all this quantifier to the language? System F (the polymorphic A-calculus)

(Girard) (Reynolds)

(Basically 2-colc plus)

(something for PL) Alternative Syntax Syntax for System F T:= & | app (T,T2) | all(d.T) Expressions for System F Alternative Syntax Recall, in STLC, we had $e := \chi \left| \lambda \times \mathcal{X} \cdot e \right| e_i e_z$ e:= x (lam { ? } (x.e) app (e; e2) For system F, we add: e::= ... | Nx.e | ex e:= -- | Lam (de) | App (e.e) (polymorphism) (instantiation)



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	θ; χ: α ⊢ X: α
-	$\lambda \times . \lambda \times . \times = \langle \lambda \times . \lambda y. y \rangle$ oops
	we can fix this by eg
	# + [,x:~ , etc (A) [x:7 + x:7]
	Theorem: If \$\P + \tau \tau \then \text{FV(\tau)} \subsection \text{\$\P\$} \\ If \$\P\$, \$\Gamma + \text{\$\text{\$\text{\$\psi}\$} \text{\$\psi\$} \text{\$\psi\$} \\ If \$\P\$, \$\Gamma + \text{\$\text{\$\psi\$}\$} \text{\$\psi\$} \\ \end{arrange}
	A + T