000000	[Program	Name	: Pseudo	RandomNumber]								
(000000)	[Section N	Jame :	PseudoR	landomNumberl								
	Conorotoo		udo rond	am number using the mixed con	rential mathed							
	Formula r	s a Pse (i+1) =	(a r + b)	NOD N	grential method.							
	This will go The MOD	enerat	e a rando	m number between 0 & N-1 with integer remainder of (a $r + b$) / N	N = 2 (pwr 20) = 1,048,8	576, a = 1	909, b =	221,571				
	U need to	U need to provide an initial seed for the function. (eg r0). U can use the real time clock.										
	Finally, if u	u want	the result	t between 0 & 1 eg 0.5674 then c	livide the result by N							
	A200.11							MOV				
					· · · · · · · · · · · · · · · · · · ·			(021)				
	P_First_C First							A351				
	Cycle							W20	r			
								r				
	-							(023)				
								W20	r			
								W20	r			
								r				
000001	Set the va In this cas	alues fo se:	or N, a & t	0								
(000000)	N = 2(pwr)	20) =	1,048,576	3								
	a = 1909 b = 221,57	71										
	A200.11							MOVL (498)				
	P_First_C							&1048576				
	First							W22	N (1 048	576)		
	- Cycle							N		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	_							MOV (021)				
								&1909				
									a (1000)			
								a w24	a (1909)			
								MOVL				
	-							(496) &221571				
								W26 b	d (221,5	/1)		
								<u></u> _				
		-										
		F	Title	Pseudo Number Generator			Author	Sleepy Wombat		Step Number		
		1	number	1	Hevis		Date	17/03/03		000000		

000002 (000007)	Calculatio The positi So you ca control.	on of r ra ive edge an see th	ndom nu of the in ne code w	mber ternal 1 sec clock p vorking. This could	oulse has being be replaced by a	used to trigger an Always On t	the calculation. bit (CF113) or tri	iggered by	a bit at your		
	1-r x a 2-(r x a) r 3-((r x a) ' The quotic result) 4-Copy Ra and use to	result + k result + ent resu andom r o genera	b) result b) result It of the / number fo ate new ra	: / N L is placed in word bund in word W+2 andom number	W,W+1 the inte	ger remainder	placed in W+2,	W+3 (ie MC	D		
	CF102								*1	rxa	
-	↑ P 1s				<u>.</u>				(421) W20	r	
	1.0 second								r W24	a (1909)
	3000110								a	u (1000)
									W28		
	-								+L 2 (401)	(rxa)ı 	result + b
									W28		
									W26	b (221,5	571)
									W28		
									/L 3	((r x a)	result + b)
-	-								(431) W28	-result /	IN
									W22	N (1,04	8,576)
									N W28		
										Copy B	andom number
-	-								(498)	found in	word W+2
									RandNu	Randon	i Number (r+1)
									W20 r	r	
000003	To then m	hake the	random	number an integer	between 0 and	1 then divide at	pove result by N	l.		1	
(000012)	You can th nd 10	hen use	this resu	It to give you a ran	dom number for	any range ie if	u want a rando	m number	petween 0 a		
	then mullt	tiply the	result by	10. Likewise multip	bly by 100 to give	e a 0-100 rando	om number resu	ult.		l	
	CF113								FLTL		
	P_On								(433) W30	Randon	n Number (r+1)
	Always ON Flag								W32	Float R	andom Number
									Flt_Rand		
-	-	L							(457) W32	Float B	andom Number
									Flt_Rand	lioutra	
									+1046576		Ni
									W32 Flt_Rand	Float Ra	andom Number
		Γ	Title	Pseudo Number Ge	enerator			Author SI	eepy Wombat	•	Step Number
		١	Number [·]	1			Revision 0	Date	11/03/03	}	000007

000004 (000015)	Example to cal	culate a rar	dom number integer in the range of $0 \ge R < 10$)			
	CF113					*F (456)	- Flagt Dandom Number
A C	Always DN Flag					Flt_Rand +10	Float Random Number
						W34	Random Num between 0-100
-						FIX (450)	
						W34	0-100 Random Num between
000005	Example to cal	culate a rar	dom number integer in the range of $0 \ge R < 1$	000			0-100
(000018)							
-						*F (456)	-
A	Always					Flt_Rand +1000	Float Random Number
	Sitting					W36	Random Number
						FIX	between 0 -1000
						W36	Random Number between 0 -1000
						W36	Random Number between 0 -1000
		Title Number	Pseudo Number Generator 1	Revision 0	Author S Date	Sleepy Wombat 11/03/03	Step Number 000015