Simple Model on Spliddit							
Composition by Phase	100%		**# of people**		**8**		
Retention	20%		1.6		**2**		
Block	35%		2.8		**2**		
General	40%		3.2		**3**		
Open	5%		0.4		**1**		
Composition by Class Year							
Freshman		50%	4		**4**		
	Retention						
	Block				2	block1	block2
	General				1	general1	
	Open				1	open	
Sophomore		30%	2.4		**3**		
	Retention				2	retain1	retain2
	Block				1	block3	
	General						
	Open						
Junior		20%	1.6		**1**		
	Retention						
	Block						
	General				1	general2	
	Open						

Baseline preferences							
Sarah	Josh	Tom	"Office Block"	"Parks Block"	Lisa	Louis	"Friends Block"
Gardens	*Hill dorms*	Wesnik	Fairfax	Webster	Highlands	Woodlawn	Doherty
Hill dorms	*Highlands*		Webster	Doherty	Gardens		Fairfax
Highlands	*Gardens*		Doherty	Fairfax	Hill dorms		Webster

Buildings

variable	mapping	type
resHall1	Gardens	generic resHall
resHall2	Hill dorms	generic resHall
resHall3	Wesnik	prime' resHall
apt1	Fairfax	generic apt (block)
apt2	Webster	generic apt (block)
apt3	Highlands	generic apt
apt4	Woodlawn	prime' apt
apt5	Doherty	generic apt (block)

Participants

name	(class, phase)	name in example
retain1	(sophomore, retention)	Tom
retain2	(sophomore, retention)	Louis
block1	(freshman, block housing)	"Office Block"
block2	(freshman, block housing)	"Parks Block"
block3	(sophomore, block housing)	"Friends Block"
general1	(freshman, general selection)	Sarah
general2	(junior, general selection)	Lisa
open	(freshman, open assignment)	Josh

Normative assignments

mapping	-->	variable	name
Gardens	-->	general1	Sarah
Hill dorms	-->	open	Josh
Wesnik	-->	retain1	Tom
Fairfax	-->	block1	"Office Block"
Webster	-->	block2	"Parks Block"
Highlands	-->	block3	"Friends Block"
Woodlawn	-->	retain2	Louis
Doherty	-->	general2	Lisa

dropping retention phase:

would improve perception of 'fairness' as it'll open previously 'locked' in locations that are popular

However, for those who were previously existing tenants but not in popular dorm to have a chance at getting a better dorm whereas h/she might've just stayed put in their original 'ok' assignment

For those who were previously existing tenants of the popular dorm would either get assigned to something less satisfactory (lowering satisfaction + process no longer being IR) or leaving the process altogether, lowering participation rate

that will be depending the participation numbers of those doing retention vs other phases to evaluate overall welfare effect

assuming they participate in General since their rooms not Block qualified rooms

			"(in)equality"	
welfare numbers	**gross total**	**average (per**	**abs(highest - lowest)**	
sampleRoomSelection3	5500	687.5	500	baseline
sampleRoomSelection4	2900	362.5	350	
sampleRoomSelection5	2850	356.25	250	
sampleRoomSelection6	2700	337.5	350	
sampleRoomSelection7	2900	362.5	300	
sampleRoomSelection8	2500	312.5	400	
retainersLeave	2400	400	200	
retainersLeaveInclLoss	2400	300	500	

total # of ppl	8		
	avg (per person)	**avg (gross total)**	**"(in)equality"**
baseline	687.5	5500	500
retainersStayAggregate	346.25	2770	330
retainersLeaveAggregate	400	2400	200
retainersLeaveInclLoss	300	2400	500

[test case] Normative Assignments
sampleRoomSelection2 By Rankings

Preferences	general1	open	retain1	block1	block2	general2	retain2	block3
resHall1	1	8	7	6	5	4	3	2
resHall2	2	1	8	7	6	5	4	3
resHall3	3	2	1	8	7	6	5	4
apt1	4	3	2	1	8	7	6	5
apt2	5	4	3	2	1	8	7	6
apt3	6	5	4	3	2	1	8	7
apt4	7	6	5	4	3	2	1	8
apt5	8	7	6	5	4	3	2	1

sampleRoomSelection3 Rankings converted to 0-1000 valuation as inputted into Spliddit

Preferences	Sarah	Josh	Tom	"Office Block"	"Parks Block"	Lisa	Louis	"Friends Block"
Gardens	500	0	0	0	0	333	0	0
Hill dorms	333	*x > 0*	0	0	0	167	0	0
Wesnik	0	0	1000	0	0	0	0	0
Fairfax	0	0	0	500	167	0	0	333
Webster	0	0	0	333	500	0	0	167
Highlands	167	0	0	0	0	500	0	0
Woodlawn	0	0	0	0	0	0	1000	0
Doherty	0	0	0	167	333	0	0	500

sampleRoomSelection4 for the case that both retainees are in #1 choices AND **stay** in the process (General Selection)

Preferences	Sarah	Josh	Tom	"Office Block"	"Parks Block"	Lisa	Louis	"Friends Block"
Gardens	250	*100*	250	0	0	200	200	0
Hill dorms	200	*300*	200	0	0	150	150	0
Wesnik	300	*250*	300	0	0	100	100	0
Fairfax	0	*0*	0	500	167	0	0	333
Webster	0	*0*	0	333	500	0	0	167
Highlands	150	*200*	150	0	0	250	250	0
Woodlawn	100	*150*	100	0	0	300	300	0
Doherty	0	*0*	0	167	333	0	0	500
								higher inequality

sampleRoomSelection5 for the case that both retainees are in #1 choices AND **stay** in the process (General Selection)

Preferences	Sarah	Josh	Tom	"Office Block"	"Parks Block"	Lisa	Louis	"Friends Block"
Gardens	150	*100*	250	0	0	150	200	0
Hill dorms	100	*300*	200	0	0	100	150	0
Wesnik	300	*250*	300	0	0	250	100	0
Fairfax	0	*0*	0	500	167	0	0	333
Webster	0	*0*	0	333	500	0	0	167
Highlands	250	*200*	150	0	0	200	250	0
Woodlawn	200	*150*	100	0	0	300	300	0
Doherty	0	*0*	0	167	333	0	0	500
	case where general1 != retain1 and/or general2 != retain2					higher than prev. case; more balanced total welfare		

sampleRoomSelection7 for the case that both retainees are in #1 choices AND **stay** in the process (General Selection)

Preferences	Sarah	Josh	Tom	"Office Block	"Parks Block'	Lisa	Louis	"Friends Block"
Gardens	300	*100*	250	0	0	300	200	0
Hill dorms	100	*300*	200	0	0	100	150	0
Wesnik	250	*250*	300	0	0	250	100	0
Fairfax	0	*0*	0	500	167	0	0	333
Webster	0	*0*	0	333	500	0	0	167
Highlands	200	*200*	150	0	0	200	250	0
Woodlawn	150	*150*	100	0	0	150	300	0
Doherty	0	*0*	0	167	333	0	0	500

case where general1 == general2

sampleRoomSelection6 for the case that both retainees are in #1 choices AND **stay** in the process (General Selection)

Preferences	Sarah	Josh	Tom	"Office Block	"Parks Block'	Lisa	Louis	"Friends Block"
Gardens	250	*250*	250	0	0	250	200	0
Hill dorms	200	*200*	200	0	0	200	150	0
Wesnik	300	*300*	300	0	0	300	100	0
Fairfax	0	*0*	0	500	167	0	0	333
Webster	0	*0*	0	333	500	0	0	167
Highlands	150	*150*	150	0	0	150	250	0
Woodlawn	100	*100*	100	0	0	100	300	0
Doherty	0	*0*	0	167	333	0	0	500

case where general1 == general2 == retain1 == open != retain2

sampleRoomSelection8 for the case where general1 == general2 == open == retain1 == retain2

Preferences	Sarah	Josh	Tom	"Office Block	"Parks Block'	Lisa	Louis	"Friends Block"
Gardens	250	*250*	250	0	0	250	250	0
Hill dorms	200	*200*	200	0	0	200	200	0
Wesnik	300	*300*	300	0	0	300	300	0
Fairfax	0	*0*	0	500	167	0	0	333
Webster	0	*0*	0	333	500	0	0	167
Highlands	150	*150*	150	0	0	150	150	0
Woodlawn	100	*100*	100	0	0	100	100	0
Doherty	0	*0*	0	167	333	0	0	500

retainersLeave — for the case that both retainees are in #1 choices AND AT LEAST ONE **leaves** the process

Preferences	Sarah	Josh	Tom	"Office Block"	"Parks Block"	Lisa	Louis	"Friends Block"
Gardens	250	*100*		0	0	200		0
Hill dorms	200	*300*		0	0	150		0
Wesnik	300	*250*		0	0	100		0
Fairfax	0	*0*		500	167	0		333
Webster	0	*0*		333	500	0		167
Highlands	150	*200*		0	0	250		0
Woodlawn	100	*150*		0	0	300		0
Doherty	0	*0*		167	333	0		500

depending on preferences, can achieve best options but surplus of 2 spots --> improving on fairness & satisfaction, no more IR/lose people

for the case that both retainees are in their LAST choices

Preferences	Sarah	Josh	Tom	"Office Block"	"Parks Block"	Lisa	Louis	"Friends Block"
Gardens				0	0			0
Hill dorms				0	0			0
Wesnik			100	0	0			0
Fairfax				500	167			333
Webster				333	500			167
Highlands				0	0			0
Woodlawn				0	0		100	0
Doherty				167	333			500

so for the 'popular' places (i.e. Wesnik, Roselawn in reality) taking out retention can improve satisfaction of other participants, but just need to make sure that **there will be enough NEW people to fill other spaces...keep up demand**

if continue to assume they go to General, can be similar results to sampleRoomSelection4 and 5

if go join a Block, will also affect Block there as well

but know that will definitely be **at least** individual rational, but not necessarily pareto efficient

will be very similar (if not identical) to the sRS4,5,6,7,8 except its guaranteed IR for all these cases