Section		Content				
Identifier	Con	Control Gym				
Name	Gyn	n Cont	roller			
Author	Kard	oliina \	/aris, Fr	ancisco Vieira and Guilherme Castro		
Version	V1.0)				
Change history						
Priority						
Criticality						
Source						
Short description	The	Contr	oller wil	II manage all his functions so that he can keep the		
	tem	temperature, humidity and amount of light right for each ages and				
	pur	pose o	f the Gy	m, using the least amount of energy needed.		
Use Case level						
Goal(s)	Aut	omatio	contro	l of windows, blinds, lights, heaters, air coolers		
	and	dryers	s to hav	e the right value of temperature, humidity and		
	ligh [.]	t in the	e Gym.			
Primary actor	kind	lergart	ten teac	thers.		
Other actors	Chil	dren, e	employe	ers, visitors.		
Precondition	Valu	ues of	Temper	ature, Light and Humidity for the Gym.		
Postcondition	Kee	p the p	oreset v	alues in the Gym.		
Result	Dec	ide in	each mo	oment if: windows and blinds are open or close;		
	hea	ters, a	ir coole	rs, dryers and lights are on or off.		
Main Scenario	1	Kinde	ergarten	teacher defines the perfect temperature,		
		humi	dity and	lightness in Gym in the various periods of a day.		
		1.1	It is al	so possible to choose if there are certain		
			actuat	tors that can not be activated in certain moments.		
	2			receiving values of temperature from the sensor		
		all th	e time a	and operate in the actuators if needed.		
		2.1	Receiv	ve values of the Gym		
		2.2	Calcul	ate the difference between the present value and		
			the de	efined as perfect condition.		
		2.3		erence is notable it will make a decision depending		
				e conditions outside and hour in which this is		
			happe	1		
			2.3.1	If it is night, it will not open a window or blinds		
				for security issues.		
			2.3.2	If there were put a restriction in on actuator at		
				that hour it won't be activated.		
			2.3.3	Respecting the previous mentions, it will have		
				the following priorities on actuators:		
				1. Open/Close Blinds/Windows		
				2. Turn On/Off Heaters/Air		
				Coolers/Lights/Dryers		
				2.3.3.1 Lights have 3 options: Off, Mid-light,		
		ır -		Full-light		
	3			ctivates any actuator or open a window/blind and		
			temperature, humidity and light are as preset, Il consider that the defined value is not what is			
		needed in the moment and turn down devices that will counteract what that action means.				
		coun	iciall M	mat that attion means.		

		-			
	3.1	If heater is turned on, windows are closed, and air			
		cooler turned off if it is on.			
	3.2 If air cooler is turn on, windows are closed, and heater turned off if it is on.				
	3.3 If dryer is turned on, windows are open if no humidity				
		outside, or closed if there is some.			
	3.4	If window opened, heaters and air cooler turned off,			
		dryers are turned on if some humidity outside.			
	3.5	If blinds closed, turn lights on to full-light.			
	3.6	Product takes the control of the room back to the			
		preset values when is told to do it or in the end of the			
		day.			
4	If door of the gym to the hall is opened and the hall has a				
	different preset value, nothing is change in 15 minutes. After				
	that an alarm goes off to inform that controller is going to				
	close	the door. In the next minute if nothing happens to the			
	door,	door, controller closes it.			
1a	Kindergarten teacher choose that Gym will not be controlled				
	by the controller in that day.				
		3.2 3.3 3.4 3.5 3.6 4 If door differ that a close door, 1a Kinde			

Section	Content					
Identifier	Control Bathroom (with window)					
Name	athroom with window Controller					
Author	Karoliina Varis, Francisco Vieira and Guilherme Castro					
Version	V1.0					
Change history						
Priority						
Criticality						
Source						
Short description	The Controller will manage all his functions so that he can keep the					
	temperature, humidity and amount of light right for each ages and					
	purpose of the Bathroom, using the least amount of energy					
	needed.					
Use Case level						
Goal(s)	Automatic control of windows, blinds, lights, heaters, air coolers					
	and dryers to have the right value of temperature, humidity and					
	light in the Bathroom.					
Primary actor	kindergarten teachers.					
Other actors	Children, employers, visitors.					
Precondition	Values of Temperature, Light and Humidity for the Bathroom.					
Postcondition	Keep the preset values in the Bathroom.					
Result	Decide in each moment if: windows and blinds are open or close;					
	heaters, dryers and lights are on or off.					
Main Scenario	1 Kindergarten teacher defines the perfect temperature,					
	humidity and lightness in Bathroom in the various periods of a					
	day.					
	1.1 It is also possible to choose if there are certain					
	actuators that can not be activated in certain moments.					

	2	Conti	ollor ic	receiving values of temperature from the server		
	2		Controller is receiving values of temperature from the sensor			
				and operate in the actuators if needed.		
		2.1		ve values of the Bathroom		
		2.2	Calculate the difference between the present value and			
			the defined as perfect condition.			
		2.3	on the conditions outside and hour in which this is			
			happe			
			2.3.1	If it is night, it will not open a window or blinds		
				for security issues.		
			2.3.2	If there were put a restriction in on actuator at		
				that hour it won't be activated.		
			2.3.3	Respecting the previous mentions, it will have		
				the following priorities on actuators:		
				Open/Close Blinds/Windows		
				2. Turn On/Off Heaters/Lights/Dryers		
				2.3.3.1 Lights have 3 options: Off, Mid-light,		
				Full-light		
	3	If an actor activates any actuator or open a window/blind ar the value of temperature, humidity and light are as preset,				
		contr	controller will consider that the defined value is not what is needed in the moment and turn down devices that will			
		need				
		count	counteract what that action means.			
		3.1	3.1 If heater is turned on, windows are closed.			
		3.3	If drye	r is turned on, windows are open if no humidity		
			outsid	e, or closed if there is some.		
		3.4	If wind	dow opened, heaters turned off, dryers are turned		
				ome humidity outside.		
		3.5	If bline	ds closed, turn lights on to full-light.		
		3.6		ct takes the control of the room back to the		
			preset	values when is told to do it or in the end of the		
			day.			
	4	If doc	or of the	Bathroom to the hall is opened and the hall has a		
				set value, nothing is change in 15 minutes. After		
			•	n goes off to inform that controller is going to		
				or. In the next minute if nothing happens to the		
				ller closes it.		
Alternative	1a			teacher choose that Bathroom will not be		
Scenario(s)		controlled by the controller in that day.				
Exception Scenario(s)		l .		•		
	<u> </u>					

Section	Content
Identifier	General (with window) Control
Name	General Room with window Controller
Author	Karoliina Varis, Francisco Vieira and Guilherme Castro
Version	V1.0
Change history	

Priority							
Criticality							
Source							
Short description	tem pur	The Controller will manage all his functions so that he can keep the temperature, humidity and amount of light right for each ages and purpose of each room of a kindergarten, using the least amount of energy needed.					
Use Case level	1	-67					
Goal(s)	the	Automatic control of windows, blinds, heaters and lights to have the right value of temperature, humidity and light for each room case.					
Primary actor	kind	dergart	ten teacl	ners.			
Other actors	Chil	dren, e	employe	rs, visitors.			
Precondition			•	ature, Light and Humidity for the room defined.			
Postcondition	Kee	p the r	right valu	ues in the room.			
Result		ters ar	nd lights	ment if: windows and blinds are open or close; are on or off.			
Main Scenario	1		dity and	teacher defines the perfect temperature, lightness in each room in the various periods of a			
		1.1		o possible to chose if there are certain actuators in not be activated in certain moments.			
	2	Contr	roller is r	receiving values of temperature of each room all			
			the time and operate in the actuators if needed.				
		2.1					
		2.2	Calcula	ite the difference between the present value and			
			the de	fined as perfect condition.			
		2.3	If diffe	rence is notable it will make a decision depending			
			on the	conditions outside and hour in which this is ning.			
			2.3.1	If it is night, it will not open a window or blinds for security issues.			
			2.3.2	If there were put a restriction in on actuator at that hour it won't be activated.			
			2.3.3	Respecting the previous mentions, it will have the following priorities on actuators: 1. Open/Close Blinds/Windows			
			_	2. Turn On/Off Heaters/Lights2.3.3.1 Lights have 3 options: Off, Mid-light, Full-light			
	3	If an actor activates any actuator or open a window/blind and the value of temperature, humidity and light are as preset, controller will consider that the defined value is not what is needed in the moment and turn down devices that will counteract what that action means.					
		3.1	If heat	er is turned on, windows are closed			
		3.4		ow opened, heaters turned off, are turned on if numidity outside.			
		3.5	If blind	s closed, turn lights on to full-light.			

		3.6	Product takes the control of the room back to the preset values when is told to do it or in the end of the day.		
	4	is ope goes the n	If a door to outside or to a room with a different preset value is opened, nothing is change in 15 minutes. After that an alarm goes off to inform that controller is going to close the door. In the next minute if nothing happens to the door, controller closes it.		
Alternative Scenario(s)	1a	Kindergarten teacher choose that the room will not be controlled by the controller in that day.			
Exception Scenario(s)					

Section				Content		
Identifier	Kitch	Kitchen Control				
Name	Kitch	Kitchen Controller				
Author	Karo	Karoliina Varis, Francisco Vieira and Guilherme Castro				
Version	V1.0					
Change history						
Priority						
Criticality						
Source						
Short description	The	Contro	oller wil	I manage all his functions so that he can keep the		
	tem	peratu	ıre, hun	nidity and amount of light right for each ages and		
	purp	ose o	f the Kit	chen, using the least amount of energy needed.		
Use Case level						
Goal(s)	Auto	omatic	contro	l of lights, heaters, air coolers and dryers to have		
				temperature, humidity and light in the Kitchen.		
Primary actor			en teac			
Other actors	_			ers, visitors.		
Precondition	Valu	es of	Гетрег	ature, Light and Humidity for the Kitchen.		
Postcondition	Keep	Keep the preset values in the Kitchen.				
Result		Decide in each moment if: heaters, air coolers, dryers and lights are				
Main Casassia		or off. Kindergarten teacher defines the perfect temperature,				
Main Scenario	1		_	I lightness in Kitchen in the various periods of a		
		day.	uity and	riighthess in kitchen in the various perious of a		
		1.1	It is als	so possible to choose if there are certain		
				ors that can not be activated in certain moments.		
	2	Contr	oller is	receiving values of temperature from the sensor		
				and operate in the actuators if needed.		
		2.1	Receiv	ve values of the Kitchen		
		2.2	Calcul	ate the difference between the present value and		
			the de	fined as perfect condition.		
		2.3 If difference is notable it will make a decisio		erence is notable it will make a decision depending		
			on ho	ur in which this is happening.		
			2.3.1	If there were put a restriction in on actuator at		
				that hour it won't be activated.		
			2.3.2	Lights have 3 options: Off, Mid-light, Full-light		

	3	If door of the Kitchen to the Canteen is opened and the Canteen has a different preset value, nothing is change in 15 minutes. After that an alarm goes off to inform that controller is going to close the door. In the next minute if nothing happens to the door, controller closes it.
Alternative	1a	Kindergarten teacher choose that Kitchen will not be
Scenario(s)		controlled by the controller in that day.
Exception Scenario(s)		

Section		Content				
Identifier	Hal	Hall Control				
Name	Hal	Hall Controller				
Author	Kar	Karoliina Varis, Francisco Vieira and Guilherme Castro				
Version	V1.	0				
Change history						
Priority						
Criticality						
Source						
Short description	The	Contr	oller wil	I manage all his functions so that he can keep the		
	tem	nperatu	ıre, hun	nidity and amount of light right for each ages and		
	pur	pose o	f the Ha	all, using the least amount of energy needed.		
Use Case level						
Goal(s)				I of lights, heaters and dryers to have the right		
	_			ture, humidity and light in the Hall.		
Primary actor	_		en teac			
Other actors	_			ers, visitors.		
Precondition		Values of Temperature, Light and Humidity for the Hall.				
Postcondition		Keep the preset values in the Hall.				
Result	Dec	Decide in each moment if: heaters, dryers and lights are on or off.				
Main Scenario	1		_	teacher defines the perfect temperature,		
		humidity and lightness in Hall in the various periods of a day.				
		1.1		so possible to choose if there are certain		
				cors that can not be activated in certain moments.		
	2			receiving values of temperature from the sensor		
			the time and operate in the actuators if needed.			
		2.1		ve values of the Hall		
		2.2		ate the difference between the present value and		
				fined as perfect condition.		
		2.3		erence is notable it will make a decision depending		
				e hour in which this is happening.		
			2.3.1			
				that hour it won't be activated.		
			2.3.2	Lights have 3 options: Off, Mid-light, Full-light		
	3			e Hall to any room is opened and the room has a		
		different preset value, nothing is change in 15 minutes. After that an alarm goes off to inform that controller is going to close the door. In the next minute if nothing happens to the				
		door, controller closes it.				

Alternative	1a	Kindergarten teacher choose that Hall will not be controlled by
Scenario(s)		the controller in that day.
Exception Scenario(s)		

Section	Content							
Identifier	General (without window) Control							
Name		General Room without window Controller						
Author		Karoliina Varis, Francisco Vieira and Guilherme Castro						
Version	_	V1.0						
Change history								
Priority								
Criticality								
Source								
Short description	The	Contr	oller wil	I manage all his functions so that he can keep the				
		-		nidity and amount of light right for each ages and				
	pur	pose o	f each r	oom of a kindergarten.				
Use Case level								
Goal(s)				l of heaters and lights to have the right value of				
				nidity and light for each room case.				
Primary actor			en teac					
Other actors				ers, visitors.				
Precondition	_			ature, Light and Humidity for the room defined.				
Postcondition		•		ues in the room.				
Result				oment if: heaters and lights are on or off.				
Main Scenario	1	Kindergarten teacher defines the perfect temperature,						
		day.	aity and	l lightness in each room in the various periods of a				
		1.1 It is also possible to chose if there are certain actuat that can not be activated in certain moments.						
	2	Controller is receiving values of temperature of each r						
		the ti	me and	operate in the actuators if needed.				
		2.1 Receive values of a room						
		2.2		ate the difference between the present value and efined as perfect condition.				
		2.3	If diffe	erence is notable it will make a decision depending				
			on the conditions outside and hour in which this is					
			happe	ning.				
			2.3.1	If there were put a restriction in on actuator at				
				that hour it won't be activated.				
			2.3.2	Lights have 3 options: Off, Mid-light, Full-light				
			2.3.2	Lights have 3 options. On, who highly tuli-light				
	4	If a d	oor to a	room with a different preset value is opened,				
		nothi	ng is ch	ange in 15 minutes. After that an alarm goes off				
				at controller is going to close the door. In the next				
				hing happens to the door, controller closes it.				
Alternative	1a	Kindergarten teacher choose that the room will not be						
Scenario(s)		contr	controlled by the controller in that day.					
Exception Scenario(s)								