

CLASS: 1NMCT4  
 NAME: Geldof  
 FIRSTNAME: Caitlin  
 Assembly Name : iGreenhouse - Intelligent Greenhouse  
 Approval Date : 15-Mar-17  
 Part Count : 100  
 Total Cost : €168



Part #	Part Name	Description	Qty	Supplier	also available from	Units	Number in units	Unit Cost	Max Cost	Real Cost
1	Servo motor	Opening and closing windows & door.	3	The Pi Hut	Aliexpress	Each	1	€ 4,60	€ 13,80	€ 13,80
2	Push button	Button to open and close the door manually.	2	The Pi Hut	Aliexpress	Each	5	€ 2,30	€ 0,92	€ 0,92
3	Raspberry Pi 3 Model B	Small computer which we run our script on.	1	Alternate	The Pi Hut	Each	1	€ 40,99	€ 40,99	€ 40,99
4	DS18B20 waterproof temperature sensor	To measure the temperature.	1	Aliexpress	DealExtreme	Each	1	€ 0,97	€ 0,97	€ 0,97
5	Gravity Analog Soil Moisture Sensor	To measure the humidity.	1	The Pi Hut	Aliexpress	Each	1	€ 6,91	€ 6,91	€ 6,91

6	Breadboard	A board to build electrical circuits.	1	The Pi Hut	Aliexpress	Each	1	€ 8,07	€	8,07	€	8,07
7	BC557 transistor	To switch with the servo motors.	3	Aliexpress	Electorn components	Each	50	€ 0,67	€	0,04	€	0,04
8	Universal Power Supply Unit	To power the servo motors.	1	Euroshop	Conrad	Each	1	€ 16,00	€	16,00	€	16,00
9	1 Kilo Ohm resistor	To obstruct the passage of electric current. (Servo motors)	3	Aliexpress	Conrad	Each	100	€ 0,88	€	0,03	€	0,03
10	10 Kilo Ohm resistor	To obstruct the passage of electric current. (Servo motors)	3	Aliexpress	Conrad	Each	100	€ 0,88	€	0,03	€	0,03
11	220 Ohm resistor	Resistor for led.	1	Aliexpress	Conrad	Each	100	€ 0,49	€	0,00	€	0,00
12	470 Ohm resistor	Resistor for temperature sensor.	1	Aliexpress	Conrad	Each	100	€ 0,61	€	0,01	€	0,01
13	MCP3008	Analog to digital converter. To read our analog soil moisture sensor.	1	Aliexpress	Conrad	Each	1	€ 2,84	€	2,84	€	2,84
14	Pi T-Cobbler	<b>(Optional)</b> Easier to connect the pins.	1	Sos Solutions	The Pi Hut	Each	1	€ 7,95	€	7,95	€	7,95
15	Led	As visualization, instead of really giving water.	1	Aliexpress	Conrad	Each	100	€ 0,87	€	0,01	€	0,01

16	Male-female jumper wires	To connect the temperature sensor.	3	Aliexpress	The Pi Hut	Each	40	€ 0,87	€	0,07	€	0,07
17	Male-male jumper wires	To connect components.	50	Aliexpress	The Pi Hut	Each	40	€ 0,92	€	1,15	€	1,15
18	Ethernet cable	Connection between computer and Raspberry Pi.	1	Aliexpress	Conrad	Each	1	€ 0,62	€	0,62	€	0,62
19	Adapter DC 5,2V	To power the Raspberry Pi.	1	Aliexpress	Conrad	Each	1	€ 2,08	€	2,08	€	2,08
20	8 GB micro SD card	The Raspberry Pi can only boot from an SD-card.	1	Bol.com	Conrad	Each	1	€ 7,99	€	7,99	€	7,99
21	Hinges 20 x 16 mm	For the windows and door.	6	Euroshop	Amazon	Each	4	€ 1,61	€	2,42	€	2,42
22	3 x 11 mm aluminium blind rivets	To secure the angle section.	1	Euroshop	bol.com	Each	1	€ 2,23	€	2,23	€	2,23
23	Bright polystyrene plate 2,5 mm 1m <sup>2</sup>	Material for the greenhouse.	1	Euroshop	Hubo	m <sup>2</sup>	1	€ 17,02	€	17,02	€	17,02
24	Angle section 15x15x2	To assemble the pieces polystyrene to each other.	1	Euroshop	bol.com	m	1	€ 2,81	€	2,81	€	2,81

25	Soldering tin	To solder wires and resistors to each other.	1	Euroshop	bol.com	gram	1	€ 13,43	€	13,43	€	13,43
26	double-sided tape	To attach the servo motors.	1	Euroshop	bol.com	meter	1	€ 5,90	€	5,90	€	5,90
27	pins	Help to the servo to close the door and the windows.	3	Euroshop	bol.com	each	500	€ 9,99	€	0,06	€	0,06
28	electrical heat shrink sleeve 3mm	To maintain our solder joint.	1	Euroshop	bol.com	meter	1	€ 1,67	€	1,67	€	1,67
29	Cable ties 2,5 mm	To put the cables away in a beautiful way.	5	Euroshop	bol.com	each	100	€ 6,95	€	0,35	€	0,35
30	Box	Box of your choice to put the breadboard and the raspberry pi into it	1	Brico (one drawer)	bol.com	each	1	€ 11,47	€	11,47	€	11,47
<b>Total</b>			<b>100</b>						<b>€</b>	<b>167,82</b>		











## Sources

<https://thepihut.com/products/9g-micro-servo-1-6kg>

<https://thepihut.com/products/mini-push-button-switch-5-pcs>

<https://www.alternate.be/Raspberry-Pi-Foundation/Raspberry-Pi-3-model-B-moederbord/html/product/1258983?event=search>

<https://nl.aliexpress.com/item/Stainless-Steel-Package-1-Meters-Waterproof-DS18B20-Temperature-Probe-Temperature-Sensor-18B20/32359386131.html?spm>

<https://thepihut.com/products/gravity-analog-soil-moisture-sensor-for-arduino>

<https://thepihut.com/products/adafruit-full-sized-breadboard>

[https://nl.aliexpress.com/item/50pcs-BC557-PNP-General-Purpose-Amplifier-Transistor/32456183422.html?spm=2114.010208.3.17.AHITQk&ws\\_ab\\_test=search](https://nl.aliexpress.com/item/50pcs-BC557-PNP-General-Purpose-Amplifier-Transistor/32456183422.html?spm=2114.010208.3.17.AHITQk&ws_ab_test=search)

[http://www.conrad.be/ce/nl/product/1434007?WT.mc\\_id=gshop&insert=8J&gclid=CjwKEAjlw4ljKBRDr6p752cCUm3kSJAC-eqRtDbRWeE\\_SKwxJw9vTVp3CTxh](http://www.conrad.be/ce/nl/product/1434007?WT.mc_id=gshop&insert=8J&gclid=CjwKEAjlw4ljKBRDr6p752cCUm3kSJAC-eqRtDbRWeE_SKwxJw9vTVp3CTxh)

[https://nl.aliexpress.com/item/100pcs-lot-1-4W-1-1K-1Kohm-Metal-Film-Resistor/32763785859.html?spm=2114.010208.3.73.Cjs2Bh&ws\\_ab\\_test=searchweb0](https://nl.aliexpress.com/item/100pcs-lot-1-4W-1-1K-1Kohm-Metal-Film-Resistor/32763785859.html?spm=2114.010208.3.73.Cjs2Bh&ws_ab_test=searchweb0)

<https://nl.aliexpress.com/item/100PCS-1-4W-10K-ohm-resistor-1-1-4w-10KR-ohm-Metal-Film-Resistors-0/32688166550.html?spm=2114.010208.8.9.fEOHyr>

[220Ohm Resistor](#)

[470 Ohm resistor](#)

[MCP3008](#)

<https://www.sossolutions.be/assembled-pi-t-cobbler-plus-gpio-breakout>

[Leds Aliexpress](#)

[https://nl.aliexpress.com/item/Red-green-yellow-white-and-blue-of-the-light-emitting-diode-LED-KIT-3MM-5MM-100PCS/863344997.html?spm=2114.010208.3.86.zcbWGU&ws\\_ab\\_test=searchweb0\\_0,searchweb201602\\_4\\_10152\\_10065\\_10151\\_10068\\_5030016\\_10084\\_10083\\_10080\\_10082](https://nl.aliexpress.com/item/Red-green-yellow-white-and-blue-of-the-light-emitting-diode-LED-KIT-3MM-5MM-100PCS/863344997.html?spm=2114.010208.3.86.zcbWGU&ws_ab_test=searchweb0_0,searchweb201602_4_10152_10065_10151_10068_5030016_10084_10083_10080_10082)

[Jumper wire Aliexpress](#)

[Ethernet cable](#)

[Adapter](#)

<https://www.bol.com/nl/p/kingston-micro-sd-kaart-8-gb/9005000006528884/?country=BE&suggestionType=typedsearch>

---

<https://www.amazon.de/Schatullen-Scharniere-verzinkt-20x16mm-Befestigungsschrauben/dp/B00GEFSKKM>

<https://www.bol.com/nl/p/rapid-blindklinknagels-aluminium-3-2-x-8-mm-100-stuks/9200000045987494/?country=BE&suggestionType=typedsearch>

<https://www.hubo.be/nl/a/ijzerwaren/profielen-platen-accessoires/platen.html>

<https://www.bol.com/nl/p/roval-aluminium-hoekprofiel-15-x-15-x-2mm/9200000074259042/?country=BE&suggestionType=typedsearch>

<https://www.bol.com/nl/p/felder-soldeer-100-g-z-harskern/9200000010409112/?country=BE&suggestionType=typedsearch>

<https://www.bol.com/nl/p/dubbelzijdig-klevend-tape-20meterx6mm/9200000071467229/?country=BE&suggestionType=suggestedsearch>

<https://www.bol.com/nl/p/spelden-met-parel-kop-wit-25-stuks/9200000056602849/?country=BE&suggestionType=typedsearch>

<https://www.bol.com/nl/p/x2-krimpkous-geel-3mm/9200000022499619/?country=BE&suggestionType=typedsearch>

<https://www.bol.com/nl/p/kabelbinders-tie-ribs-tie-wraps-ty-raps-100-x-2-5-mm-wit-100-stuks/9200000077033333/?country=BE&suggestionType=typedsearch>

[https://www.brico.be/nl/badkamer-keuken-wonen/opbergen/manden-boxen/allibert-ladeblok-'magic-case'-3-laden/4424865?gclid=CjwKEAjwppPKBRCGwrSpqK7Y5jcSJACHYbWYK5KkYpYP8ieEmfY7AiBFOTidpQ9cz5kv6SMJ2Q\\_xRoCOHnw\\_wcB](https://www.brico.be/nl/badkamer-keuken-wonen/opbergen/manden-boxen/allibert-ladeblok-'magic-case'-3-laden/4424865?gclid=CjwKEAjwppPKBRCGwrSpqK7Y5jcSJACHYbWYK5KkYpYP8ieEmfY7AiBFOTidpQ9cz5kv6SMJ2Q_xRoCOHnw_wcB)



[http://2114.010208.3.50.zJVZnn&ws\\_ab\\_test=searchweb0\\_0,searchweb201602\\_4\\_10152\\_10065\\_10151\\_10068\\_5030016\\_10084\\_10083\\_10080\\_10082\\_1](http://2114.010208.3.50.zJVZnn&ws_ab_test=searchweb0_0,searchweb201602_4_10152_10065_10151_10068_5030016_10084_10083_10080_10082_1)

[hweb0\\_0,searchweb201602\\_4\\_10152\\_10065\\_10151\\_10068\\_5030016\\_10084\\_10083\\_10080\\_10082\\_10081\\_10177\\_10110\\_10136\\_10137\\_519\\_10111](#)

[84s4T-Banll1LODzzJhoCoDHw\\_wcB&tid=819723060\\_46178978110\\_pla-326350753364\\_pla-1434007&WT.srch=1](#)

[0,searchweb201602\\_4\\_10152\\_10065\\_10151\\_10068\\_5030016\\_10084\\_10083\\_10080\\_10082\\_10081\\_10177\\_10110\\_10136\\_10137\\_519\\_10111\\_10060](#)







0081\_10177\_10110\_10136\_10137\_519\_10111\_10060\_10112\_10113\_10155\_10062\_10114\_437\_10154\_10056\_10055\_10054\_10182\_10059\_303\_100

10060 10112 10113 10155 10062 10114 437 10154 10056 10055 10054 10182 10059 303 100031 10099 10078 10079 10103 10073 1010

10112 10113 10155 10062 10114 437 10154 10056 10055 10054 10182 10059 303 100031 10099 10078 10079 10103 10073 10102 1009





[1031\\_10099\\_10078\\_10079\\_10103\\_10073\\_10102\\_10096\\_10123\\_10189\\_10052\\_10053\\_10142\\_10107\\_142\\_10050\\_10051-10050\\_10112,searchweb2016](#)

[2\\_10096\\_10123\\_10189\\_10052\\_10053\\_10142\\_10107\\_142\\_10050\\_10051,searchweb201603\\_13,ppcSwitch\\_7&btsid=554ef641-64ff-4df3-a3b3-3f3669fa](#)

[6\\_10123\\_10189\\_10052\\_10053\\_10142\\_10107\\_142\\_10050\\_10051,searchweb201603\\_13,ppcSwitch\\_7&btsid=818046ba-579d-45a6-811e-66ec67c97d92](#)







[03\\_13,ppcSwitch\\_7&btsid=74f9b645-66ce-48ad-8791-8ab9237b234a&algo\\_expid=9ab71ad0-ef50-4b8a-8754-4735d6bafc9a-6&algo\\_pvid=9ab71ad0-ef5](#)

394&algo\_expid=82968903-1559-46eb-9b38-7ffdd93ad27b-2&algo\_pvid=82968903-1559-46eb-9b38-7ffdd93ad27b

&algo\_expid=bbdeabe3-e32b-46db-99db-e5cff8b47118-9&algo\_pvid=bbdeabe3-e32b-46db-99db-e5cff8b47118





[50-4b8a-8754-4735d6bafc9a](#)