

Semester Project V2.0

Internet of Things -- Project

08/09/2019





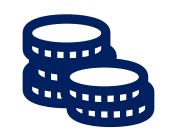
Let's talk

- 1. Introduction to your project
- 2. Key requirements
- 3. Technical challenges
- 4. Choice og sensors/actuators/web-data sources
- 5. How do you plan to test
- 6. Introduction to your github repository

Bored with Kroner coins in your wallet?



Danske Kroner Money Converter



Let the « DKMC » help you with your coins and let it count for you!







Why?

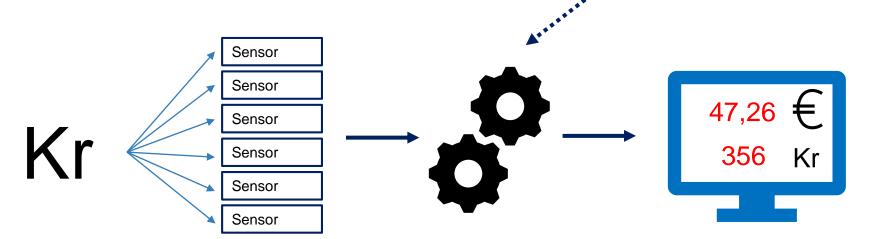
Let's start with the begining



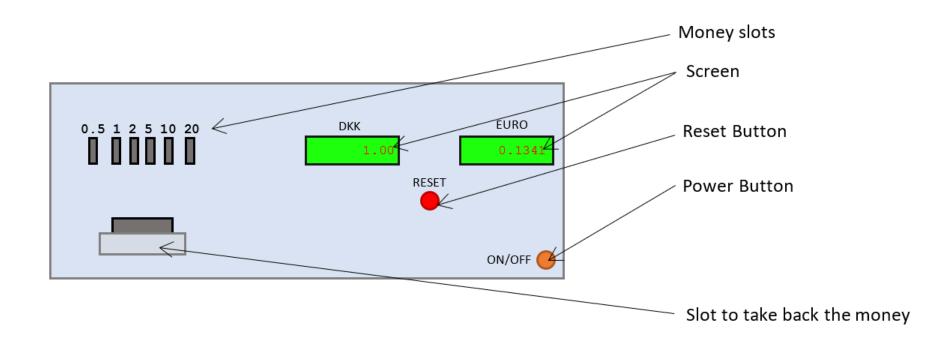


How does it work?













Key requirements

Let's build!



We are going to use:

- 6 Sensors to count how many coins are inserted.
- The photon device that will compute with the exchange rate of the day.
- 2 buttons (Reset & Power)
- 2 screens to print the data.





Technical Challenges

Let us think about it!



There are some challenges:

The main problems:

- There is not many pin slot on the photon.
- We are not sure that the power will be enough to all the components.



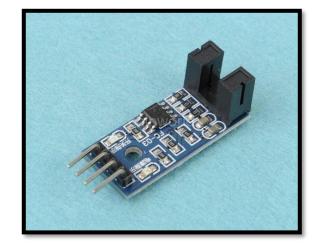
Choice of sensors/actuat ors/web-data sources

Let's build!





- use imported groove coupler sensor
- the groove width of 5mm.
- output status indicator, the lamp output high, output low lights.
- the comparator output, the signal is clean, the waveform, driving ability, more than 15mA.
- operating voltage 3.3V-5V
- The output in the form: Digital switching outputs (0 and 1)
- small plates PCB Dimensions: 3.2cm x 1.4cm



LCD1602 IIC/I2C Blue Backlight

- I2C Address: 0x27
- Backlight (White character on Blue background)
- Supply voltage: 5V
- Size: 82x35x18 mm
- Come with IIC interface, which can be connected by DuPont Package Include:
 1 X IIC/I2C/TWI 1602 Serial LCD Module







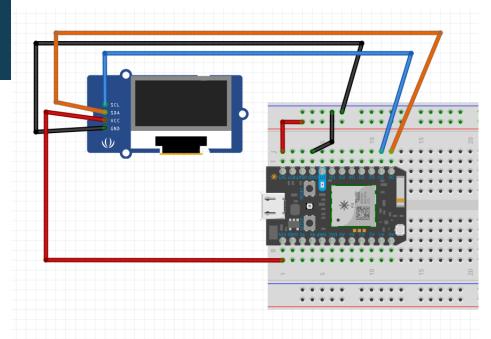
How do we plan to test

First step in the project

Test the LCD

The simplest way to test it:

```
#include<LiquidCrystal_I2C_Spark.h>
LiquidCrystal_I2C *lcd;
void setup() {
Serial.begin(9600);
lcd = new LiquidCrystal_I2C(0x3F, 16, 2);
lcd->init();
lcd->backlight();
lcd->clear();
void loop() {
if (Time.now(), "%H:%M:%S" == "00:00:00") {
lcd->clear();
lcd->setCursor(0,0);
lcd->print("Coins-Coins");
}
```

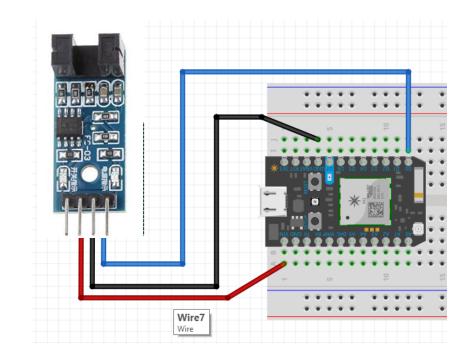


Test Slot-type Optocoupler Module

The simplest way to test it:

"The output in the form: Digital switching outputs (0 and 1)"

We just need to plug it in and add a listener to the photon



Test the rate currency

```
WEBHOOK

Very {

"event": "Elevation",

"url": "OUR_URL",

"requestType": "GET",

"query": {

"locations": "{{{lat}}},{{{lng}}}",

"key": "<paste your secret Google API key here>"

"responseTemplate": "{{{results.0.elevation}}}",

"noDefaults": true
}
```



"usd":{"code":"USD","alphaCode":"USD","numericCode":"840","name":"U.S. Dollar","rate":0.14892238492781,"date":"Wed, 23 Oct 2019 12:00:01 GMT","inverseRate":6.7149072349649},"eur": ("code":"EUR","alphaCode":"EUR","numericCode":"978","name":"Euro","rate": 0.13370335298034,"date":"Wed, 23 Oct 2019 12:00:01 GMT","inverseRate":7.4792439958259},"gbp":{"code":"GBP","alphaCode":"GBP","numericCode":"882","name":"U.K. Pound Sterling", "rate":0.11522219505237, "date": "Ned, 23 Oct 2019 12:00:01 GMT", "inverseRate": 8.6788834351356}, "aud": {"code": "AUD", "numericCode": "036", "name": "Australian Dollar", "rate": 0.21723209861039, "date": "Ned, 23 Oct 2019 12:00:01 GMT", "inverseRate":4.603371262336}, "cad":{"code":"CAD", "alphaCode":"CAD", "numericCode":"124", "name":"Canadian Dollar", "rate":0.195469137203, "date":"Wed, 23 Oct 2019 12:00:01 GMT", "inverseRate":5.1158971401273}, "jpy" ("code":"JPY","alphaCode":"JPY","numericCode":"392","name":"Japanese Yen","rate":16.162845189172,"date":"Wed, 23 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23 Oct 2019 12:00:01 GMT", "inverseRate":0.38582351769231}, "ars": {"code": "ARS", "alphaCode": "ARS", "numericCode": "032", "name": "Argentine Peso", "rate":8.7417415066026, "date": "Wed, 23 Oct 2019 12:00:01 GMT", "inverseRate":0.11439368222507}, "bzd":{"code":"BZD", "alphaCode":"BZD", "numericCode":"084", "name":"Belize dollar", "rate":0.30033500630748, "date":"Wed, 23 Oct 2019 12:00:01 GMT", "inverseRate":3.3296151930296}, "kmf": {"code": "KMF", "alphaCode": "KMF", "numericCode": "174", "name": "\tCompro franc", "rate":65.848648607374, "date": "Wed, 23 Oct 2019 12:00:01 GMT", "inverserate":0,015186340511899}, "sll":{"code": "SLL", "name code": "SLL", "numericCode": "694", "name": "Sierra Le leone", "rate":1418.1908206257, "date": "Wed, 23 Oct 2019 12:00:01 GMT", "inverseRate": 0.00070512372908944}, "mvr": {"code": "MVR", "alphaCode": "MVR", "numericCode": "462", "name": "Maldivian rufiyaa", "rate": 2.303776001338, "date": "Wed, 23 Oct 2019 12:00:01 GMT", 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http://www.floatrates.com/daily/dkk.json?fbclid=lwAR2plNzplh0qDPdBoi09xpbDeyEoMjt_Az5RtZC g-6uiEvP5C333gdGibBA



Follow us on GitHub

Best project

GitHub

IoT-Project - DKMC

BENJAMIN MILLE VIRGILE CRESPEL

Hej! Welcome to our IOT Project.

Project description: Work in progress

There will be updates on this read me file every time needed:

SOURCES:

JSON FILE FOR RATE: http://www.floatrates.com/daily/dkk.json?fbclid=lwAR2plNzplh0qDPdBoi09xpbDeyEoMjt Az5RtZCq-6uiEvP5C333qdGibBA

MATERIAL: https://arduinotech.dk

TEST THE MATERIAL: https://docs.particle.io/reference/device-cloud/webhooks /?fbclid=lwAR14YTb9KTHh9BBWYFeBuFMvk1uWMndM9At9uy7JJ73LwQ7K7flGSpyMaO4 https://www1.oanda.com/lang/fr/currency/live-exchange-rates/EURDKK/?fbclid=lwAR2wFW1A83cpIR-CAlHA2AhXQO9cZM7Abx_ZOCkIT_BPjoeM_-4RqV75d6c

Sources:

- https://docs.particle.io/reference/devicecloud/webhooks/?fbclid=lwAR14YTb9KTHh9BBWYFeBuFMvk1uWMndM9At9uy7JJ73L wQ7K7flGSpyMaO4
- https://www1.oanda.com/lang/fr/currency/live-exchangerates/EURDKK/?fbclid=lwAR2wFW1A83cplR-CAIHA2AhXQO9cZM7Abx ZOCkIT BPjoeM -4RqV75d6c
- https://arduinotech.dk

THANKS!

Any questions?

