

The background features a dark blue gradient with faint, light blue technical diagrams. On the left, a large circular scale is visible, with numerical markings from 140 to 260. Several circular diagrams with arrows and dashed lines are scattered across the page, suggesting a technical or engineering context.

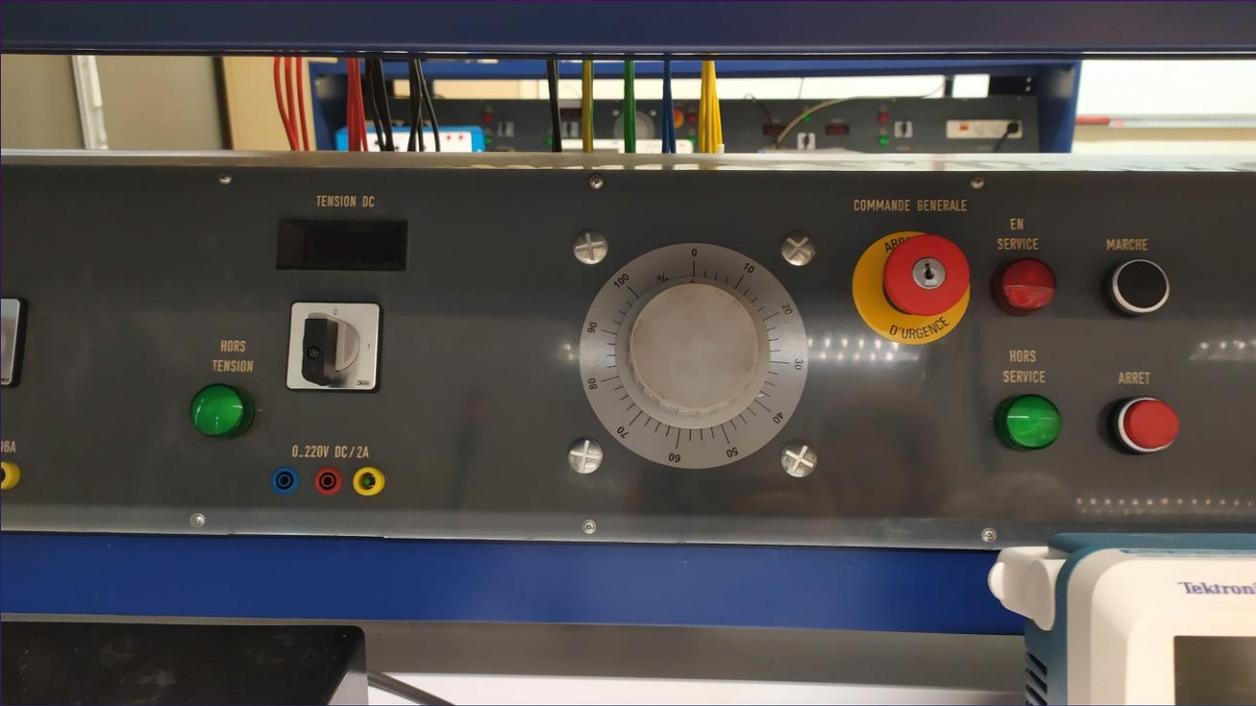
SOUTENANCE DU PROJET DE FIN D'ÉTUDES

HAVARD NICOLAS

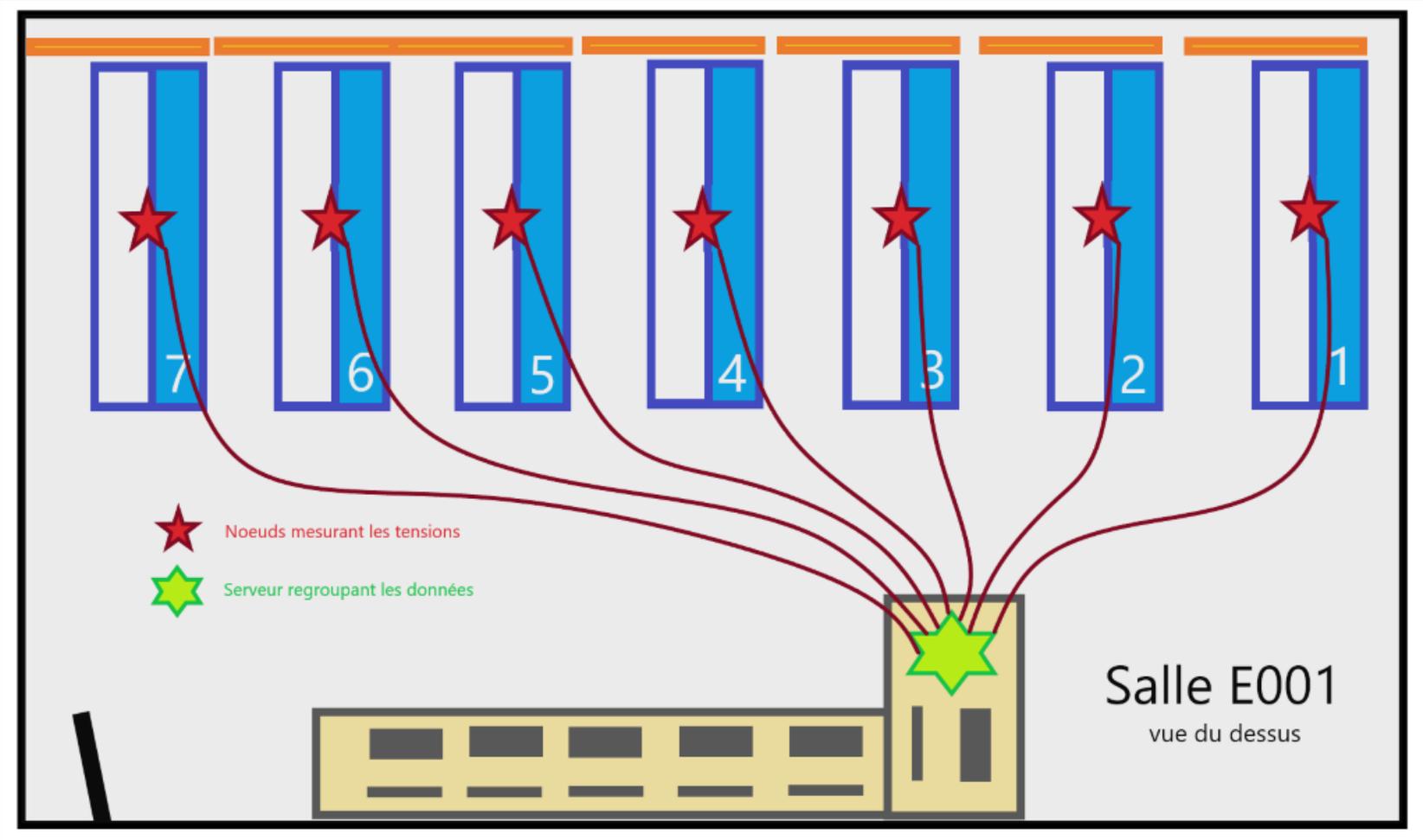
IMA5

INTRODUCTION

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I. Cartes "*afficheurs*"

II. Carte "*principale*"

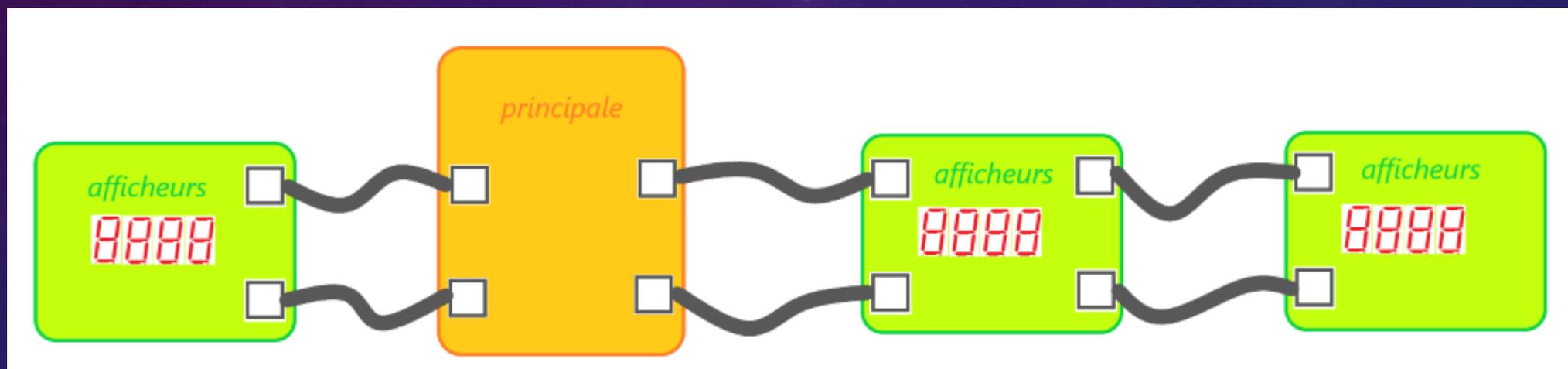
III. Application web

IV. Retour sur la gestion du projet

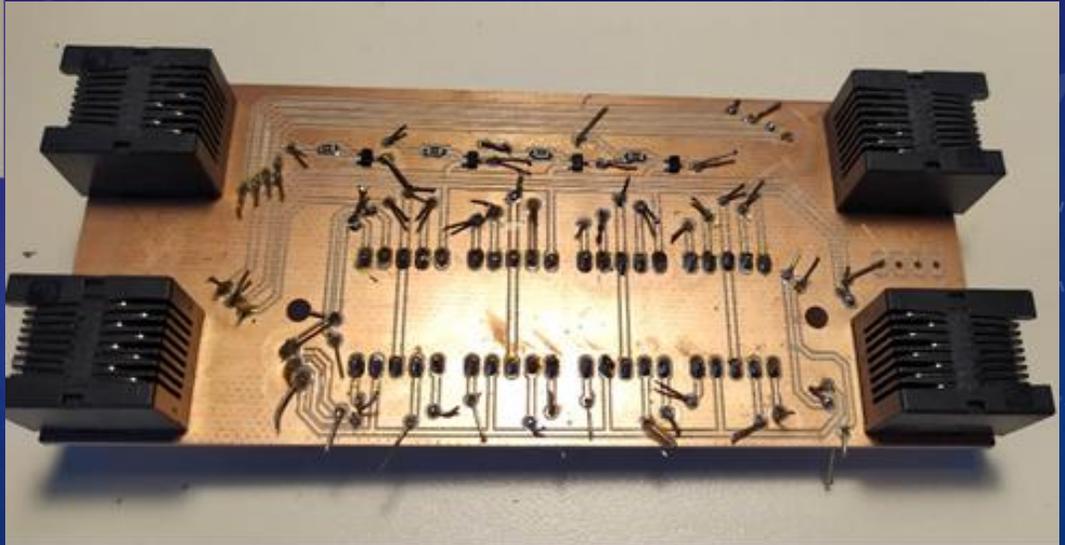
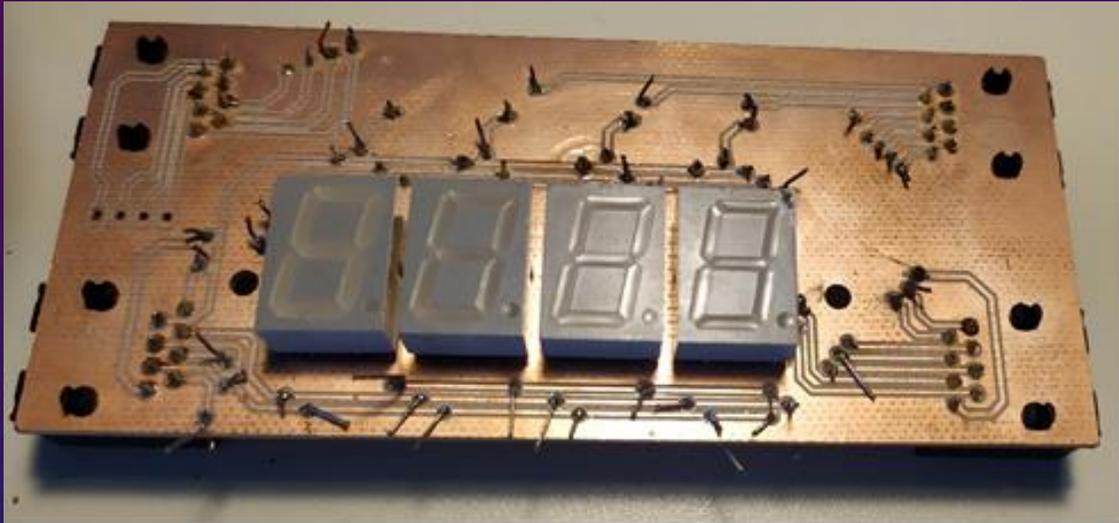
V. Conclusion

SOMMAIRE

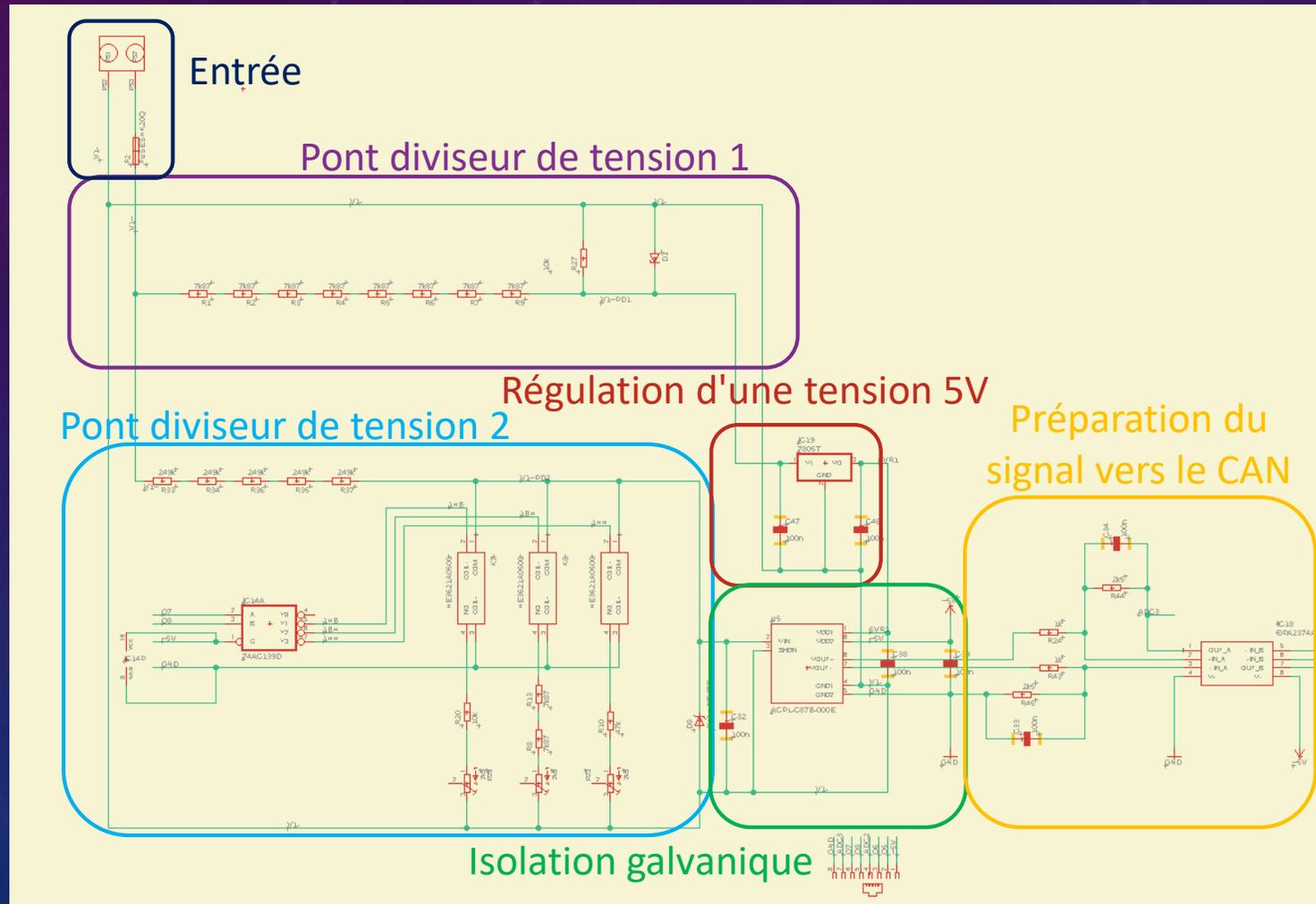
CARTES "AFFICHEURS"



CARTES "AFFICHEURS"



CARTE "PRINCIPAL"

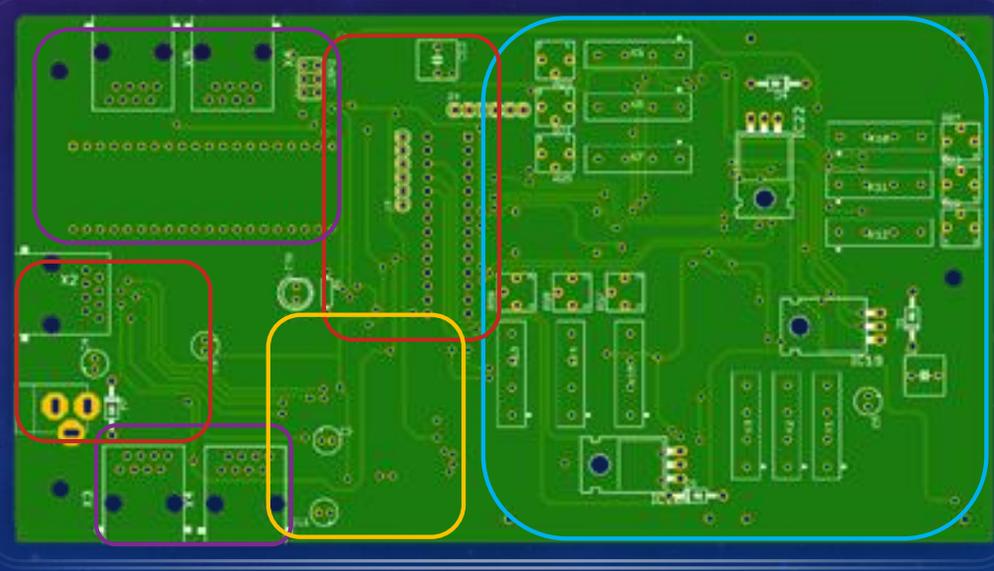
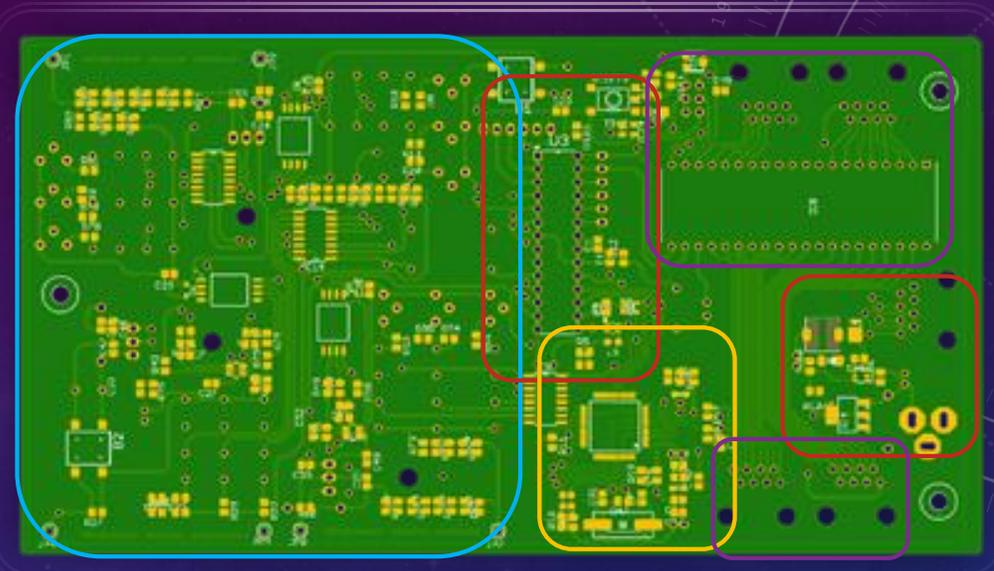
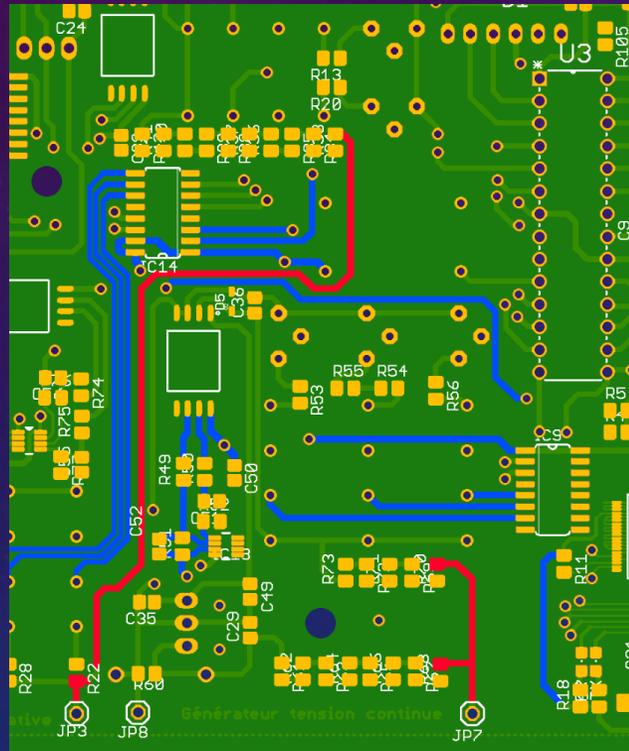


CARTE "PRINCIPAL"

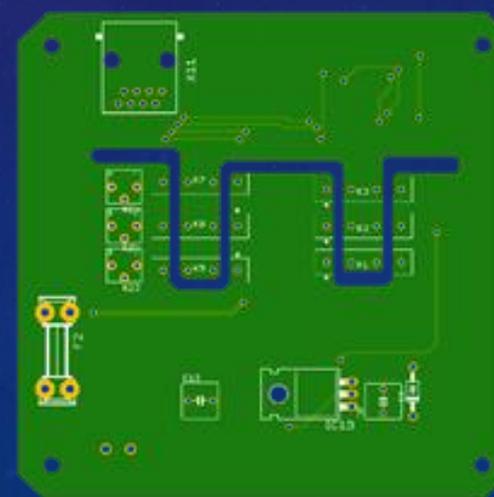
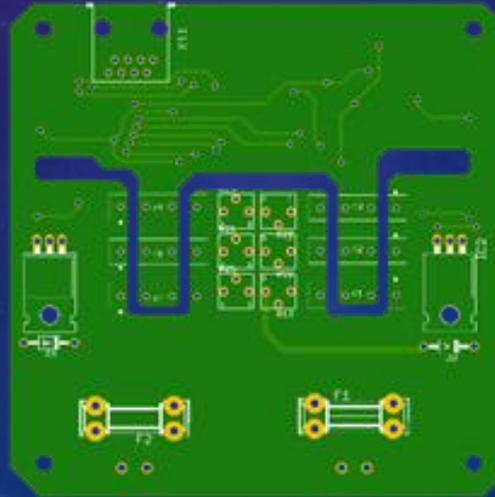
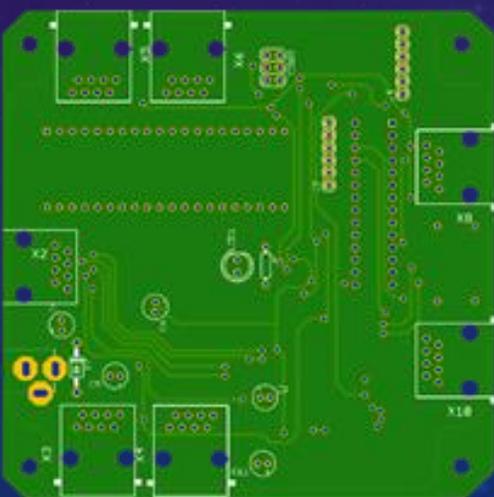
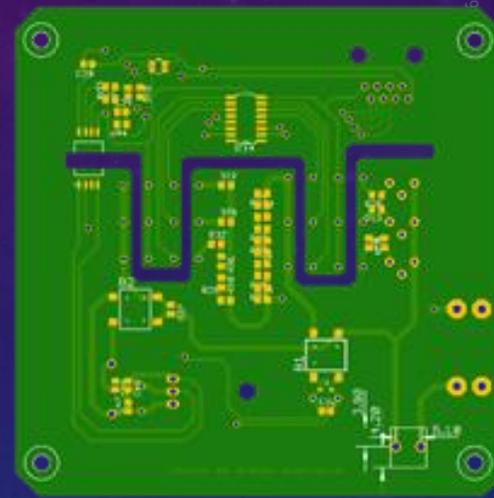
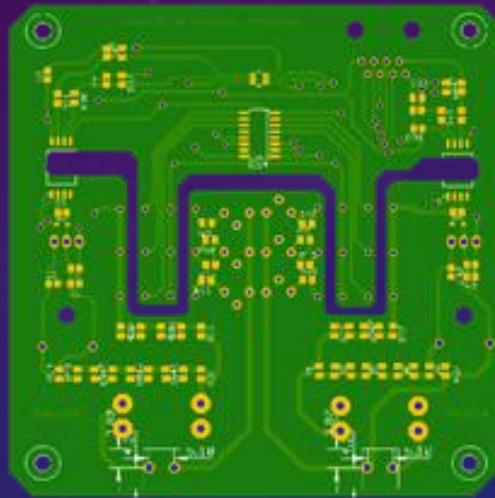
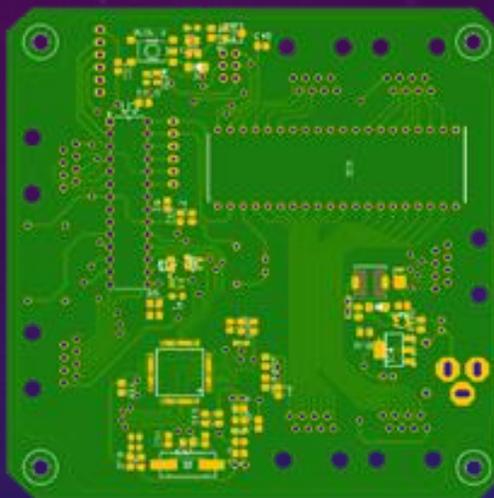
TABLEAU DU CALCUL DES RESISTANCES

	Source de tension continue			Source de tension alternative		
Tension max (V)	250	150	50	500	150	50
Tension min (V)	150	50	0	150	50	10
ratio 2V/Input	0,008	0,01333	0,04	0,004	0,01333	0,04
R1 théorique (Ohm)	1 240 000			2 490 000		
R1 choisie (Ohm)	1 245 000			2 490 000		
R2 théorique (Ohm)	10 000	16824	51875	10000	33649	103750
R2 choisie (Ohm)	10 000	15 740	47 000	10000	33000	94000
Tension max réelle (V)	251	160	55	500	153	55

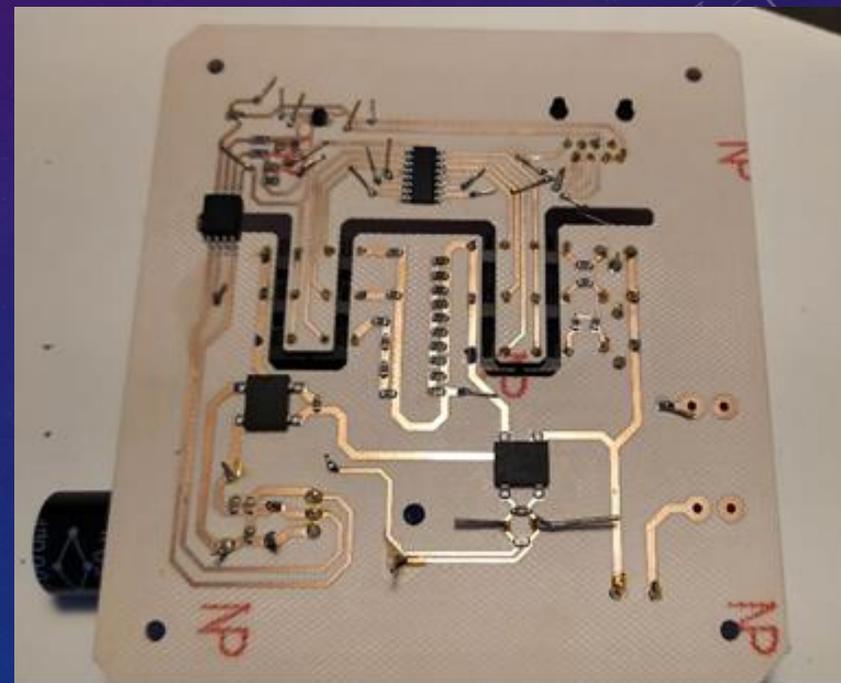
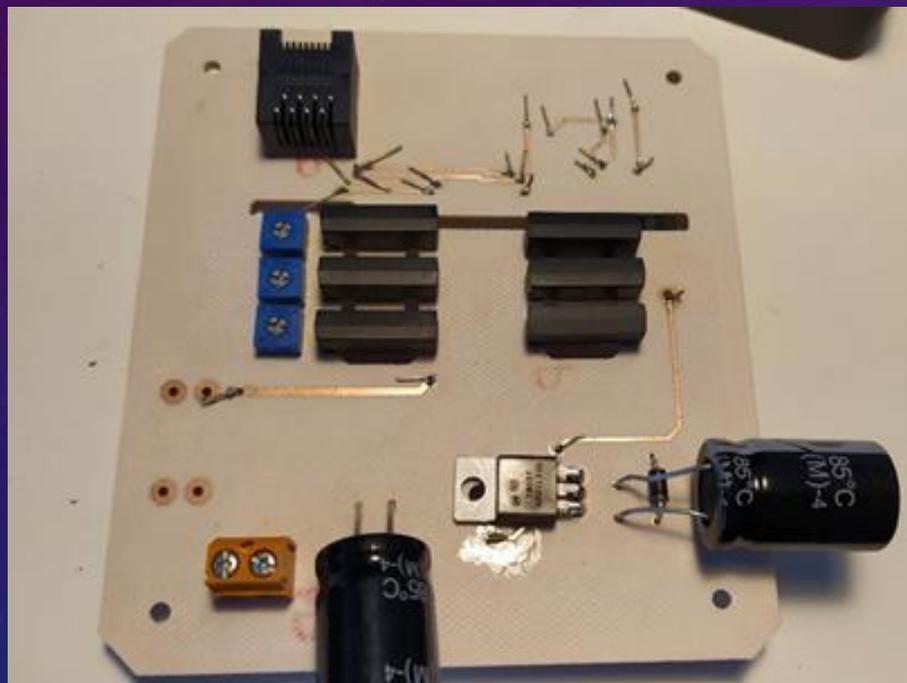
CARTE "PRINCIPAL"



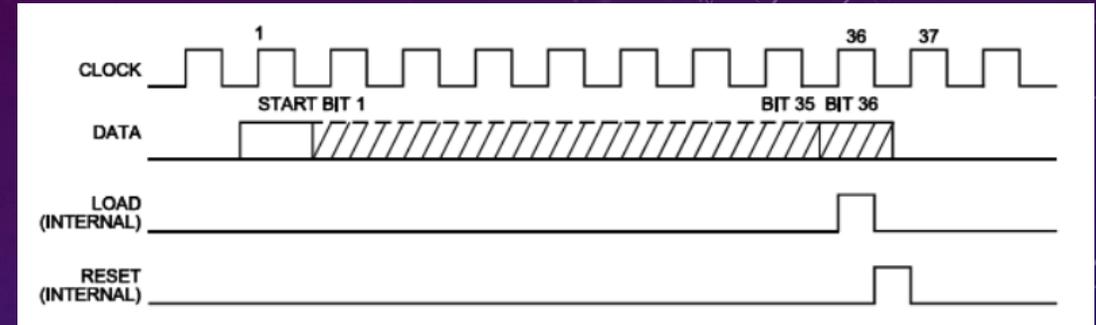
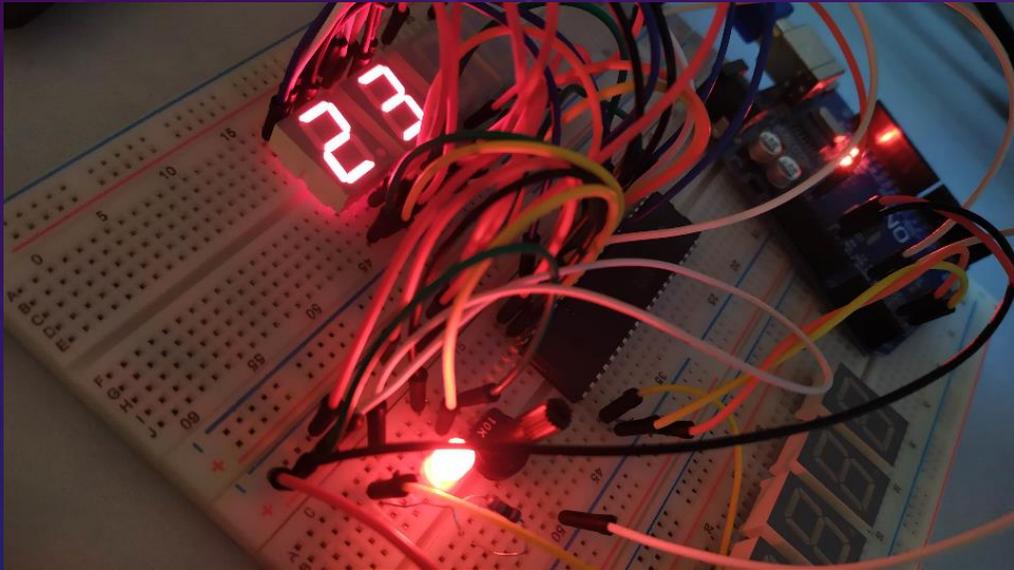
CARTE "PRINCIPAL"



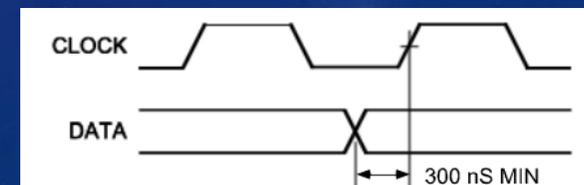
CARTE "PRINCIPAL"



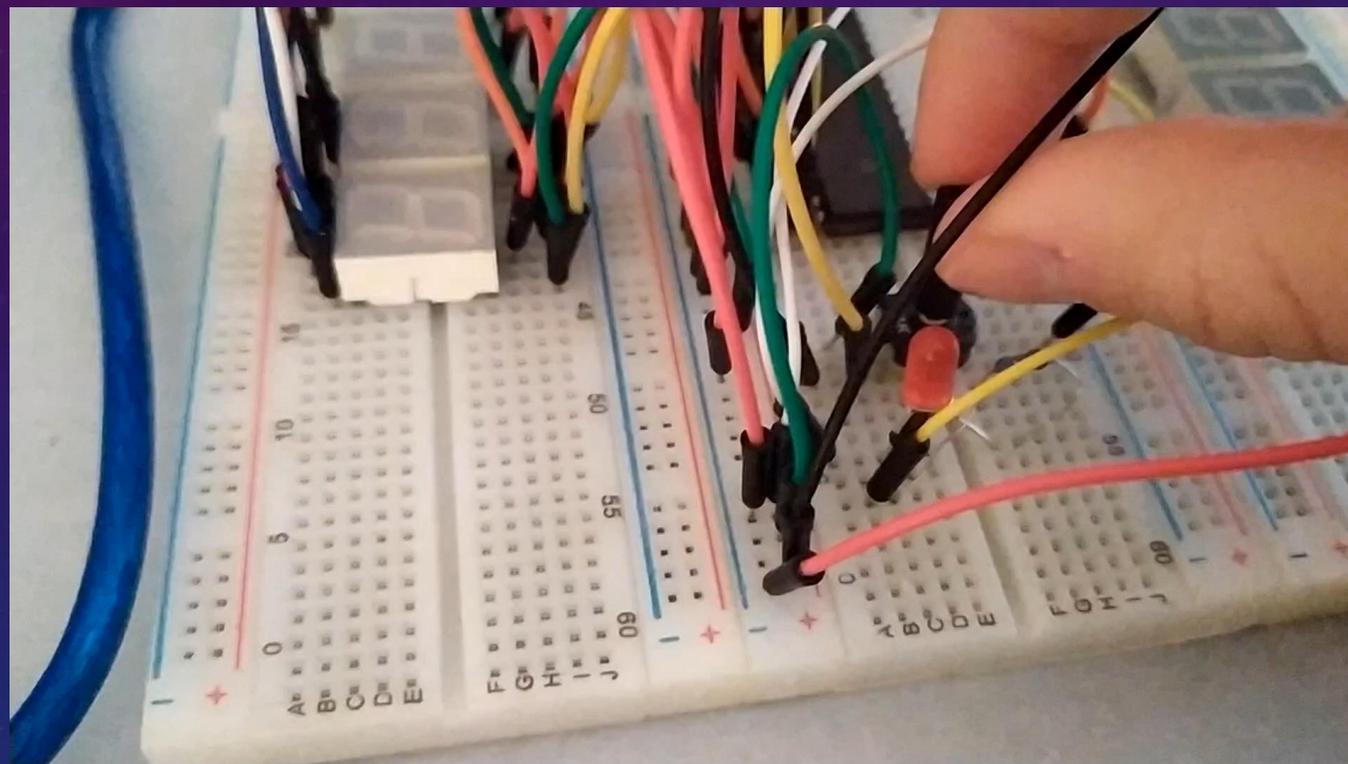
CARTE "PRINCIPAL"



```
1  digitalWrite(dataBit, HIGH) ;
2  pulseCLK() ;
3  for (int i = 0; i < 35; i++)
4  {
5      if (i%2 == 0)
6      {
7          digitalWrite(dataBit, HIGH) ;
8          pulseCLK() ;
9          //Serial.print(i) ;
10         //Serial.println(" : allumée !");
11     }
12     else
13     {
14         digitalWrite(dataBit, LOW) ;
15         pulseCLK() ;
16         //Serial.print(i) ;
17         //Serial.println(" : éteinte !");
18     }
19 }
20 }
```



CARTE "PRINCIPAL"



CARTE "PRINCIPAL"

```
1 /* Données à envoyer */
2 banc = 7 ; dc1 = 123 ; ac = 312 ; dc2 = 230 ;
3
4 // Création de la chaîne de caractère à envoyer par requête POST
5 data = "Banc=" + String(banc) + "&DC1=" + String(dc1) + "&AC=" + String(ac) + "&DC2=" + String(dc2) ;
6
7
8 if (client.connect(server,80)) // REPLACE WITH YOUR SERVER ADDRESS
9 {
10 //Serial.println("Client connecté");
11 client.println("POST /pfe/add.php/ HTTP/1.1");
12 client.println("Host: 192.168.1.1"); // SERVER ADDRESS HERE TOO
13 //Serial.println("Host: 169.254.116.49");
14 client.println("Content-Type: application/x-www-form-urlencoded");
15 client.print("Content-Length: ");
16 client.println(data.length());
17 client.println();
18 client.print(data);
19 }
20
21 if (client.connected()) {
22 client.stop(); // DISCONNECT FROM THE SERVER
23 }
24
25
26
```

Côté client

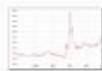
```
1 <?php
2
3 /*
4 /*
5 /* Ce script PHP permet aux cartes électroniques présentes sur chaque banc
6 /* Il consiste à récupérer les valeurs associées aux champs 'Banc', 'DC1', 'AC' et 'DC2'
7 /*
8 /*
9
10 include("connect.php");
11 $link=Connection();
12
13 $banc = $_POST["Banc"];
14 $tension1 = $_POST["DC1"];
15 $tension2 = $_POST["AC"];
16 $tension3 = $_POST["DC2"];
17
18 $query = "INSERT INTO `Tensions` (`Banc`, `DC1`, `AC`, `DC2`)
19 VALUES ('.$banc.', '$tension1.', '$tension2.', '$tension3.')";
20
21 mysqli_query($link,$query);
22 mysqli_close($link);
23
24 //header("Location: index.php");
25 ?>
```

Côté serveur

APPLICATION WEB

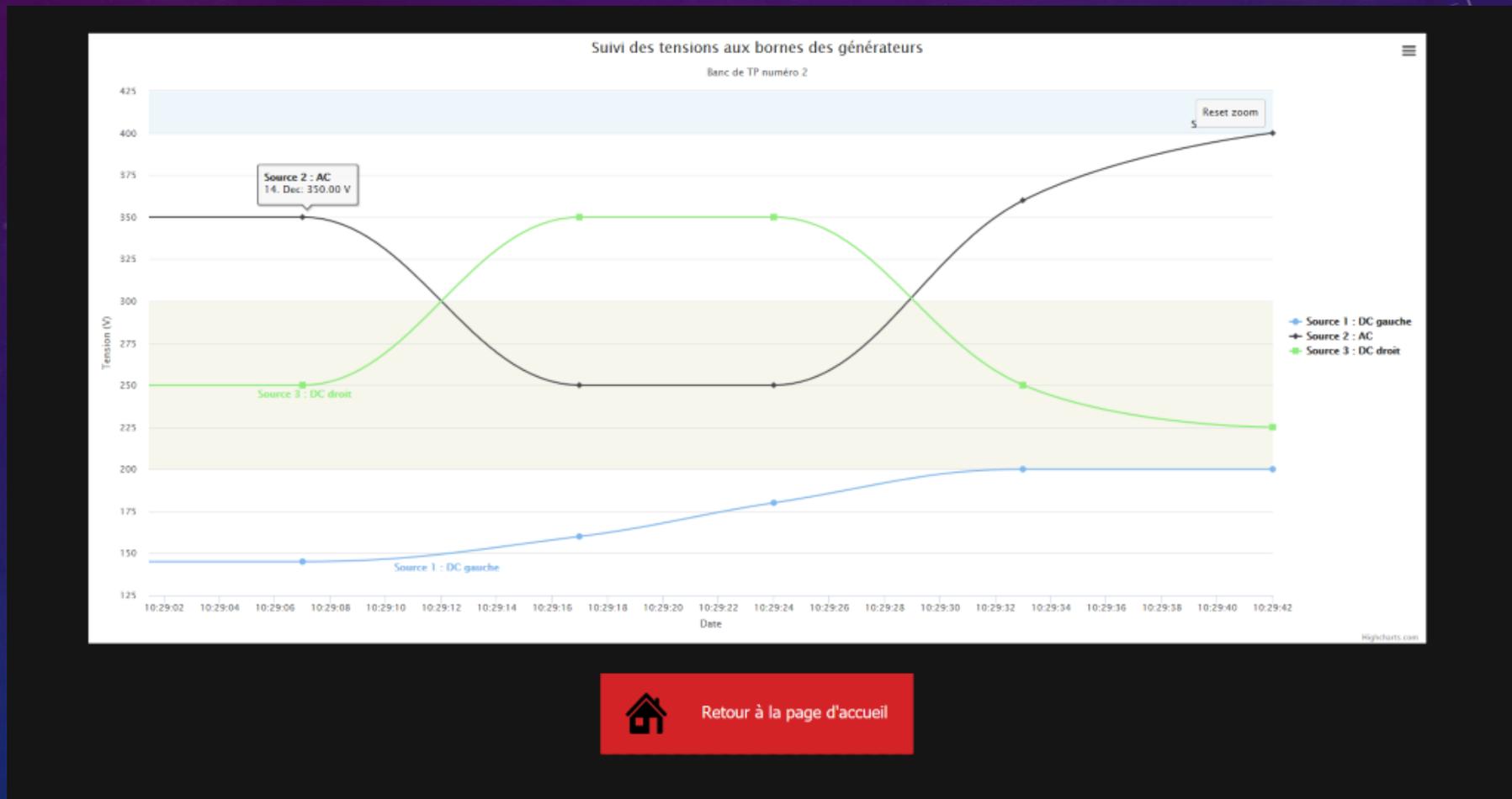


APPLICATION WEB

Valeurs mesurées					
Banc	Générateur 1	Générateur 2	Générateur 3	Date	Courbe
1	345	12	35	2019-12-09 13:03:01	
2	145	346	250	2019-12-14 10:39:02	
3	3	0	148	2019-12-14 10:39:10	
4	216	287	0	2019-12-14 10:39:23	
5	100	0	150	2019-12-14 10:39:32	
6	0	0	147	2019-12-14 10:39:43	
7	169	347	0	2019-12-14 10:39:56	

Réinitialiser l'affichage

APPLICATION WEB

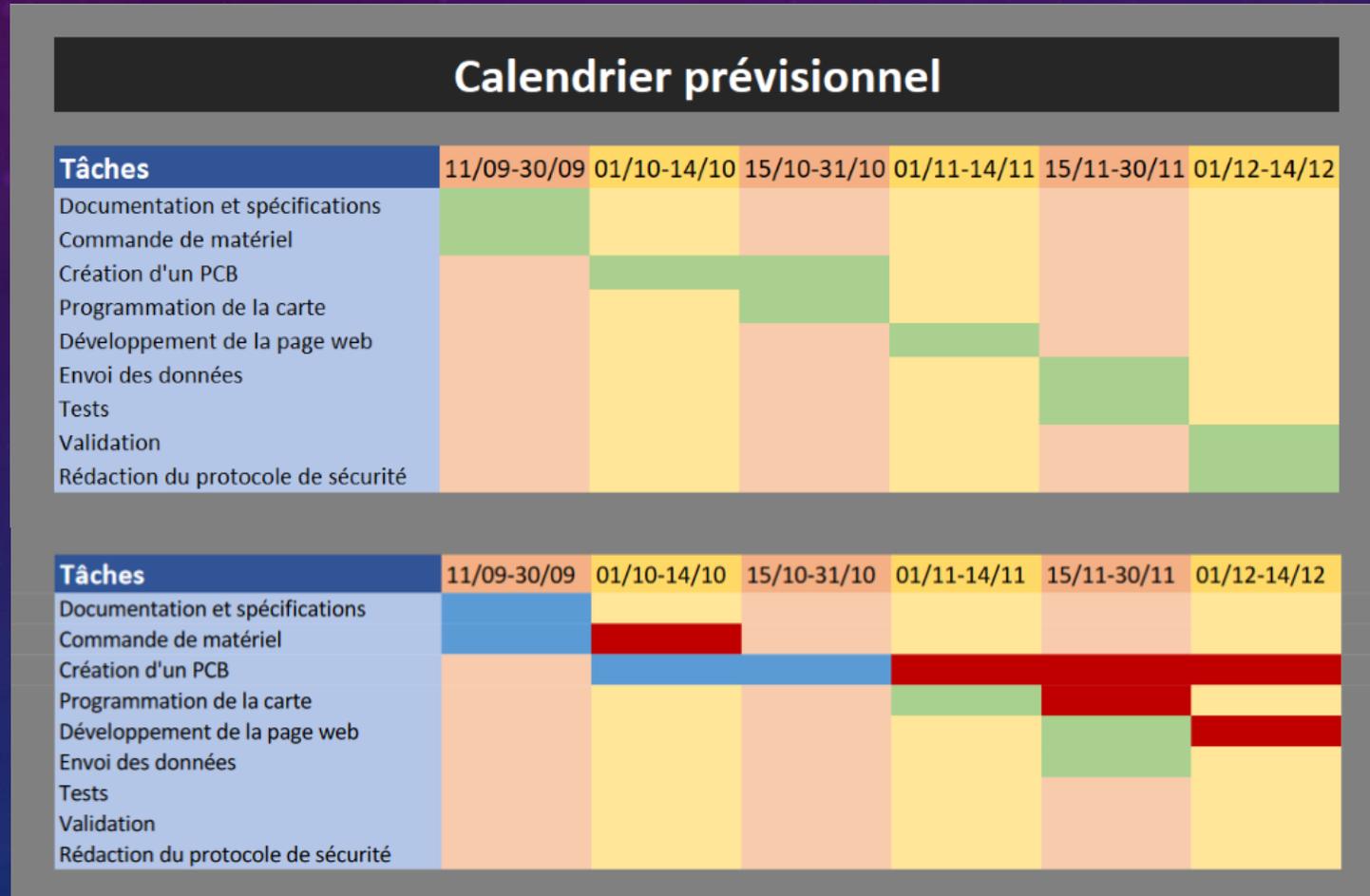


APPLICATION WEB

Test :

<http://127.0.0.1/pfe/index.php>

RETOUR SUR LA GESTION DU PROJET



RETOUR SUR LA GESTION DU PROJET

Description	Coût (€)
Afficheur n°1	9,9952
Afficheur n°2	10,7072
Afficheur n°3	9,9952
Récupération des tensions continues	26,1346
Récupération de la tension alternative	19,5629
Gestion du driver de LEDs	6,438
Envoi des données sur le réseau	7,3695
Traitement des données	9,8151
TOTAL	99,9727

CONCLUSION

- Cartes afficheurs conçues, gravées et testées
- Application web au point avec une partie historique ajoutée
- Envoi des données aux afficheurs et au réseau réussi avec une carte UNO et son shield Ethernet

QUESTIONS