

Aktører & datakilder

wyscout
the football company





Data Driven Video Analysis

Empowering the Football
Analytics Community





Take the Tour

< Back This is a demo workspace with limited edit functions. Go back to the startup window to work with your own workspace.

VIDEO MANAGER ...  DFB Pokal 08 APR 2015 BayArena 0:0 Bayern Munich 

+ PLAYLISTS 

Take the Tour! >

Take the Tour!

1 0:12

 3' SHOT 1 0:12

+ Chroma Key Field Tracking Player Tracking Monthly Annotations: 9/150 Current Annotations: 0/30 Upgrade 0:10 0:11.9 0:22

Player: ... Chroma Key 1 Play... 0:10 0:22

PLAY by METRICA SPORTS POLO LOUNGE DIE CLUB LOUNGE SONDERMODELLE www.KLINGT-GUT.de DFB-POKAL www.KLINGT-GUT.de club up! 0:11/0:32   

Bayer Leverkusen 0:0 Bayern Munich 



Angel Ric
@angelric10

...

New @FIFACom EPTS

Standard Data
colaboration w
@FCBarcelona
today in #barc
@BarcalnnoHu
technology.fifa
a-tiles...



metrica-sports-sample-data

Navn

▼ data

> Sample_Game_1

> Sample_Game_2

> Sample_Game_3

Sample_Game_3_events.json

Sample_Game_3_metadata.xml

Sample_Game_3_tracking.txt

▼ documentation

events-definitions.pdf

README.md



Angel Ric
@angelric10

...

New [@FIFAcom](#) EPTS Standard Data Format, in colaboration with [@FCBarcelona](#) Anounced today in [#barcasportstech](#) [@BarcalnnoHub](#) [football-technology.fifa.com/en/media-tiles...](#)

1.44 PM · 16. nov. 2018 · Twitter for Android

< > metrica-sports-sample-data

Navn

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Search or jump to... / Pull

metrica-sports / sample-data Public

Why GitHub? Team Enterprise Explore

Friends-of-Tracking-Data-FoTD

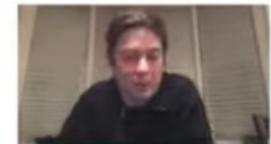
Laurie Shaw
@EightyFivePoint

Lead AI Scientist at City Football Group. Former lecturer and research scientist
@Harvard, astrophysicist @Yale and policy advisor @HMTreasury.

Boston, MA eightyfivepoints.blogspot.com
Medlem siden september 2016

534 Følger 11,5 t Følgere

Metrica Tracking Data



Event Data

Log of each on-ball event
(passes/tackles/shots)

A few thousand events/match

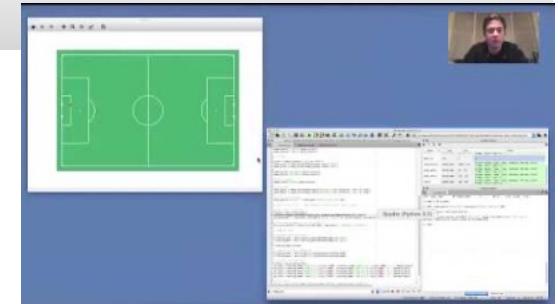
Tracking Data

Player & ball positions
sampled at 25HZ

Several million observations/match



Følg



<https://www.youtube.com/watch?v=8TrleFklEsE>



Metrica Tracking Data



Event Data

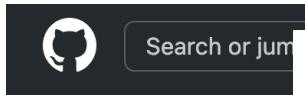
Log of each on-ball event
(passes/tackles/shots)

A few thousand events/match

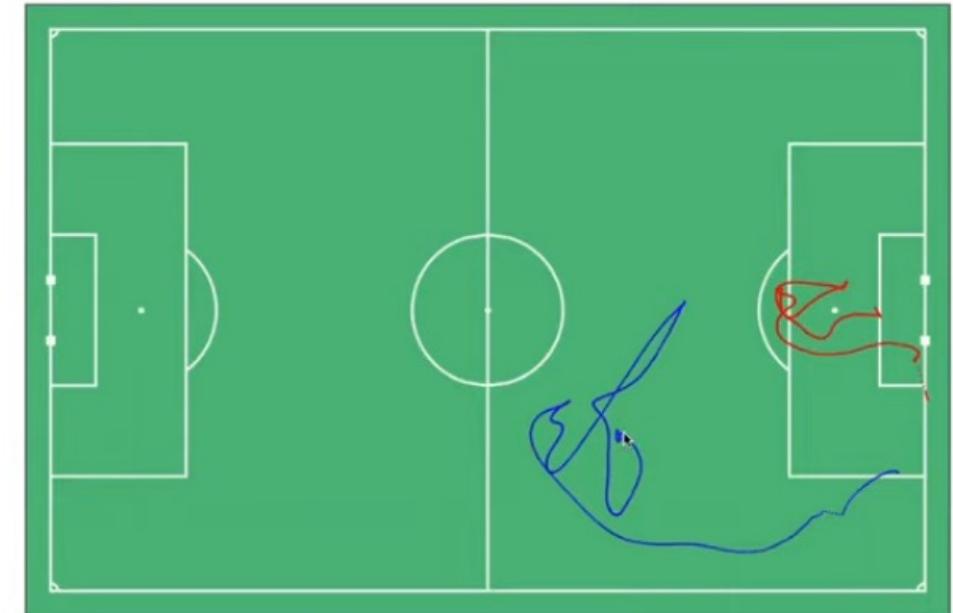
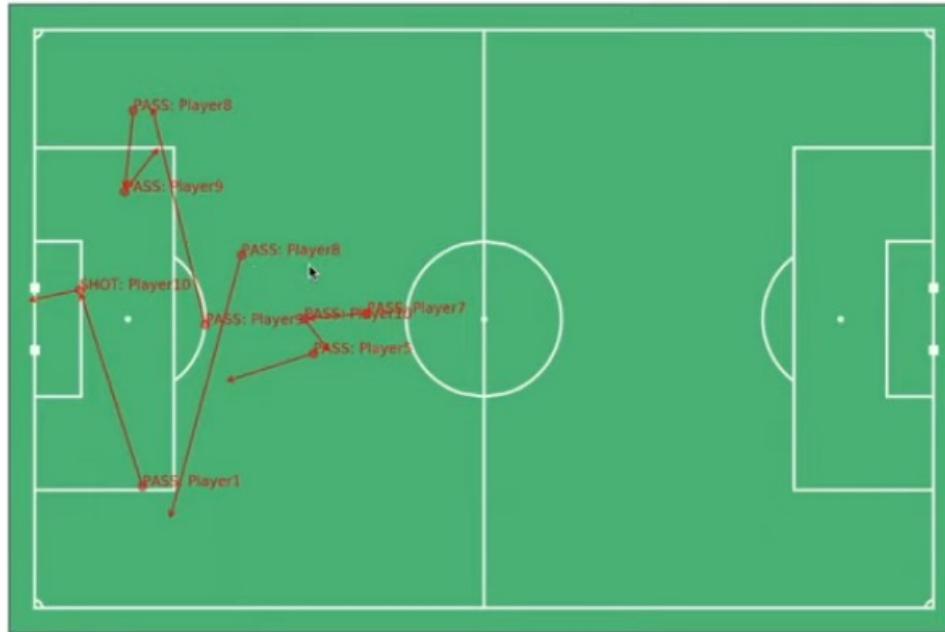
Tracking Data

Player & ball positions
sampled at 25HZ

Several million observations/match



metrica-sports





Tracking Data

Player & ball positions
sampled at 25HZ

Several million observations/match

Navn

data

> Sample_Game_1

> Sample_Game_2

> Sample_Game_3

ws Sample_Game_3_events.json

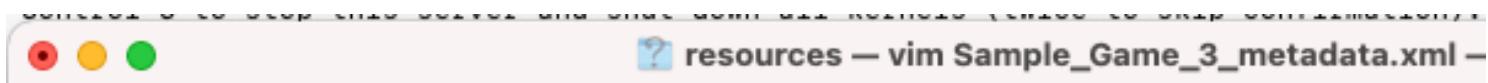
Sample_Game_3_metadata.xml

Sample_Game_3_tracking.txt

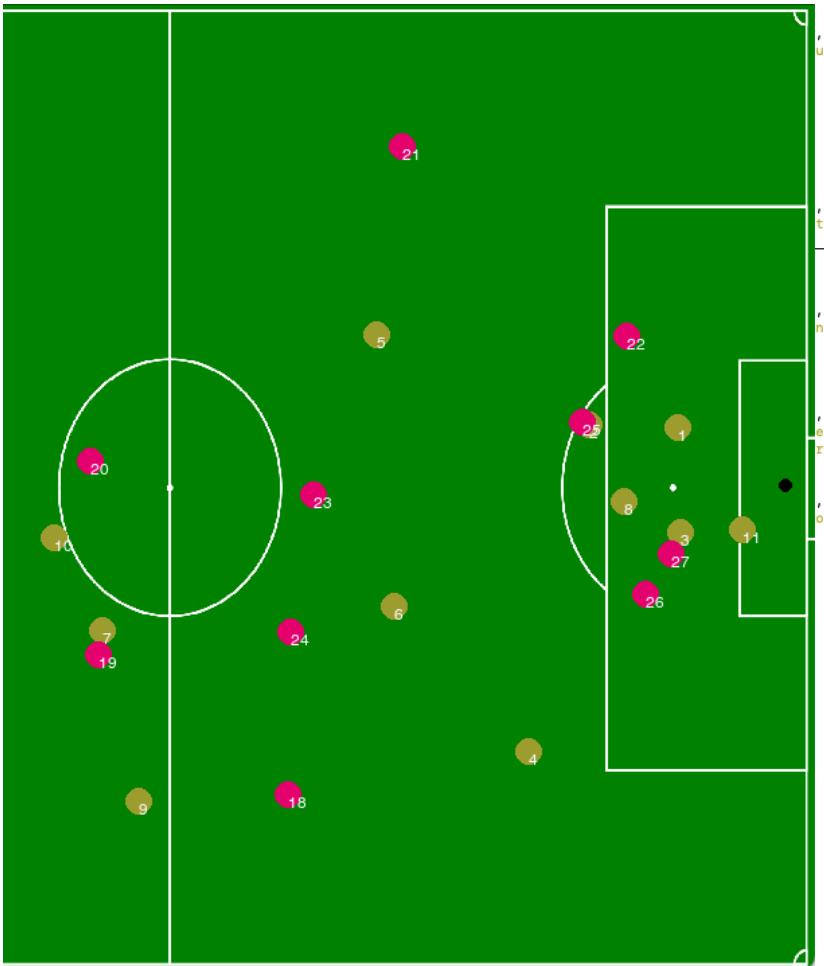
documentation

events-definitions.pdf

```
1:0.84722,0.52855;0.65268,0.24792; ... 0.22684;0.44476,0.62375;0.41381,0.52790;0.41787,0.48086;0.41215,0.36689;0.47050,0.73219;0.48864,0.36357;NaN,NaN
2:0.84722,0.52855;0.65231,0.24513; ... 22230;0.44417,0.62192;0.41375,0.52780;0.41719,0.47864;0.41132,0.36169;0.47040,0.73204;0.48834,0.36362;NaN,NaN
11991:0.83917,0.39725;0.60634,0.34932; ... 0.42503,0.81285;0.39978,0.66776;0.26515,0.62792;0.48542,0.35145;0.60616,0.81377;0.62821,0.56111;0.32912,0.87084
11992:0.83916,0.39723;0.60670,0.35059; ... 0.42495,0.81288;0.39981,0.66909;0.26577,0.62943;0.48614,0.35281;0.60619,0.81689;0.62838,0.56322;0.33061,0.87171
(base)
```

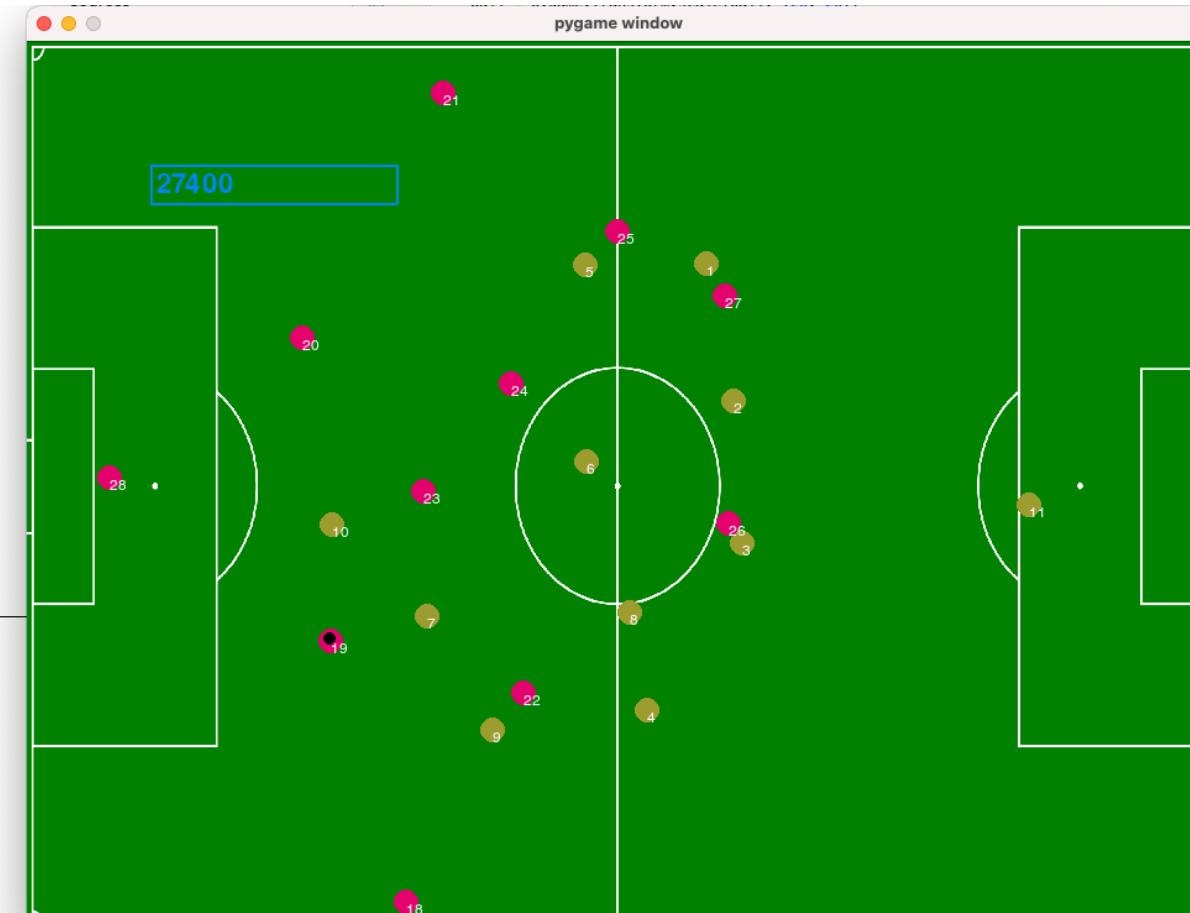


```
1 <?xml version="1.0" encoding="utf-8"?>
2 <main xmlns:tns="FIFADataTransferFormatEPTSNamespace/FIFADataTransferFormatEPTS"
ema-instance" xsi:schemaLocation="FIFADataTransferFormatEPTSNamespace/FIFADataTr
TS.xsd">
3   <Metadata>
4     <GlobalConfig>
5       <FileDate>2020-05-08T12:38:28.766Z</FileDate>
6       <FileName>game_DEMO_1002_FIFATMA_FIFATMB_MetadataFifaFormat</FileName>
7       <TrackingType>Optical</TrackingType>
8       <ProviderName>Metrica Sports</ProviderName>
9       <FrameRate>25</FrameRate>
10      <ProviderGlobalParameters>
11        <ProviderParameter>
12          <Name>first_half_start</Name>
13          <Value>1</Value>
14        </ProviderParameter>
15        <ProviderParameter>
16          <Name>first_half_end</Name>
17          <Value>69661</Value>
18        </ProviderParameter>
19        <ProviderParameter>
20          <Name>second_half_start</Name>
21          <Value>69662</Value>
22        </ProviderParameter>
```



```

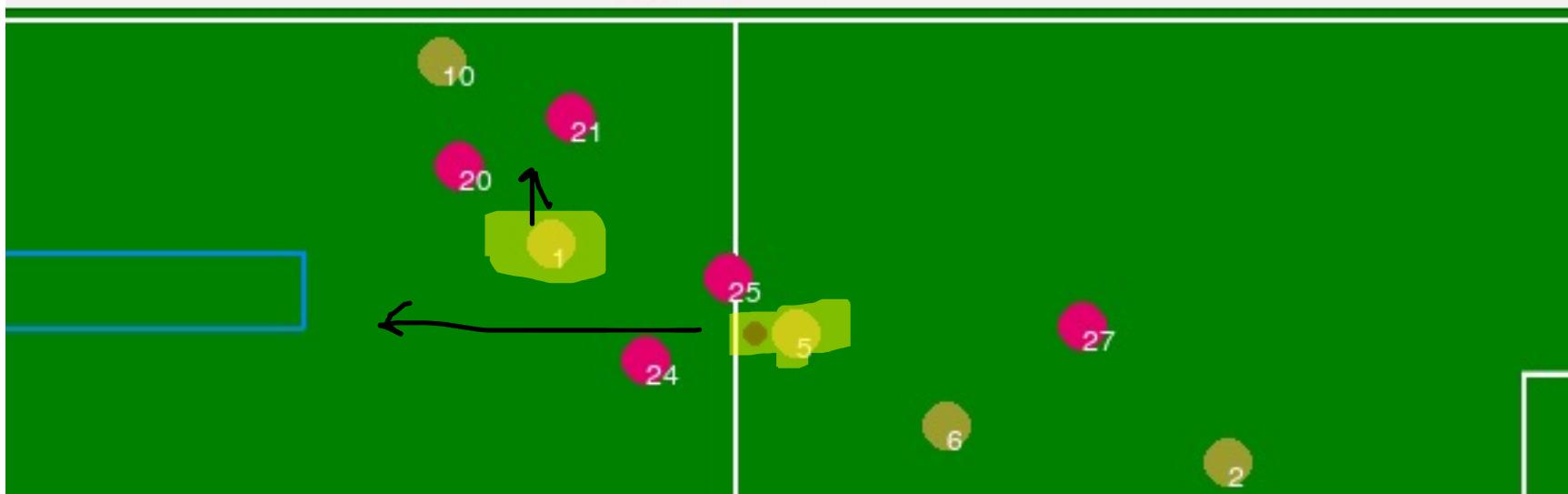
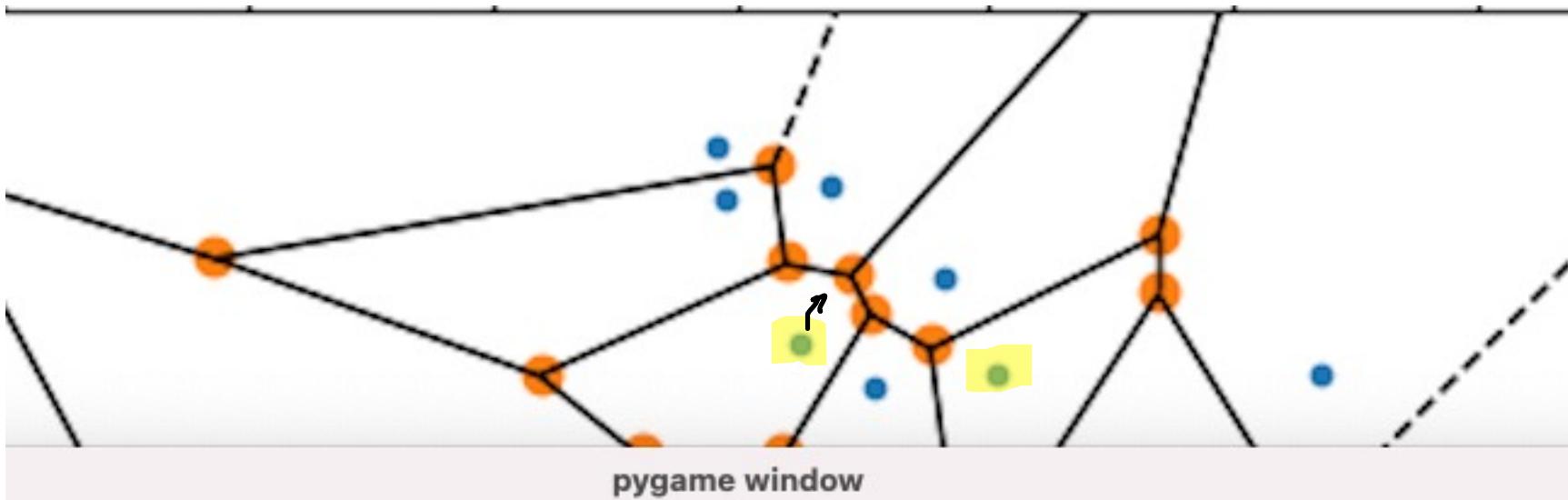
    "end": {
      "frame": 27525,
      "time": 1101,
      "x": 0.86504,
      "y": 0.56461
    },
    "period": 1,
    "from": {
      "name": Player 27,
      "id": P3594
    },
    "to": null
  },
  {
    "index": 708,
    "team": {
      "name": Team B,
      "id": FIFATMB
    },
    "type": {
      "name": SHOT,
      "id": 2
    },
    "ubtypes": [
      {
        "name": ON TARGET,
        "id": 28
      },
      {
        "name": GOAL,
        "id": 30
      }
    ],
    "start": {
      "frame": 27525,
      "time": 1101,
      "x": 0.86504,
      "y": 0.56461
    },
    "end": {
      "frame": 27544,
      "time": 1101.76,
      "x": 1.01,
      "y": 0.48
    },
    "period": 1,
    "from": {
      "name": Player 27,
      "id": P3594
    },
    "to": null
  }
]
  
```



Tracking Data
Player & ball positions
sampled at 25HZ
Several million observations/match



VORONOI



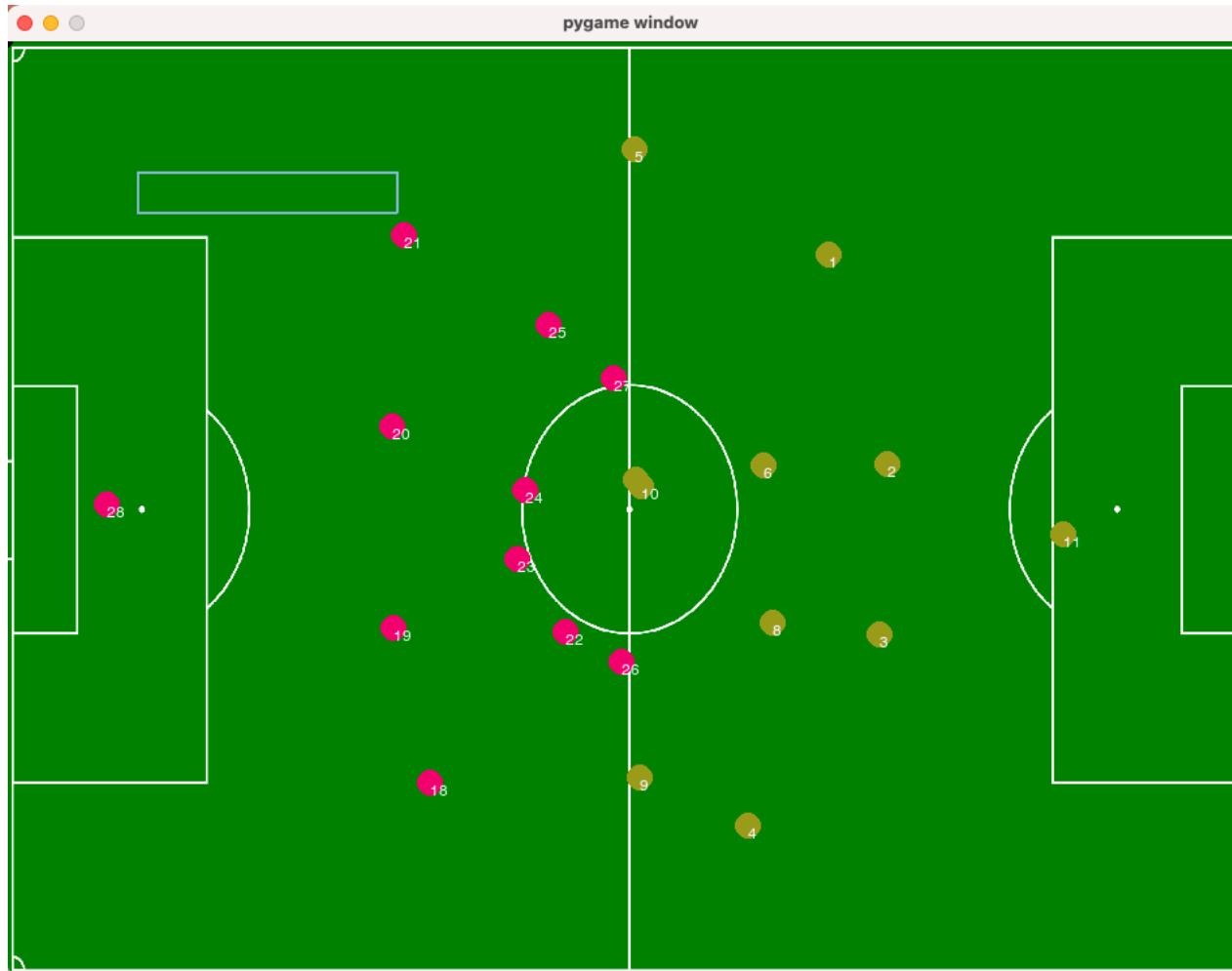


Event Data

Log of each on-ball event
(passes/tackles/shots)

A few thousand events/match

Live Demo





```
1 1
2 period: 1,
3 frameIdx: 0,
4 gameClock: 0,
5 wallClock: 1653145503547,
6 homePlayers: [
7   {
8     playerId: 0502031f-c2d5-4e75-a96f-d850c5f6eca0,
9     number: 15,
10    xyz: [
11      -3.34,
12      8.28,
13      0
14    ],
15    speed: 0,
16    optaId: 164489
17  },
18 ]
```

```
249   optaId: 223422
250 }
251 ],
252 ball: {
253   xyz: [
254     -0.22,
255     0.25,
256     0.37
257   ],
258   speed: 2.01
259 },
260 live: false,
261 lastTouch: home
262 ]
```

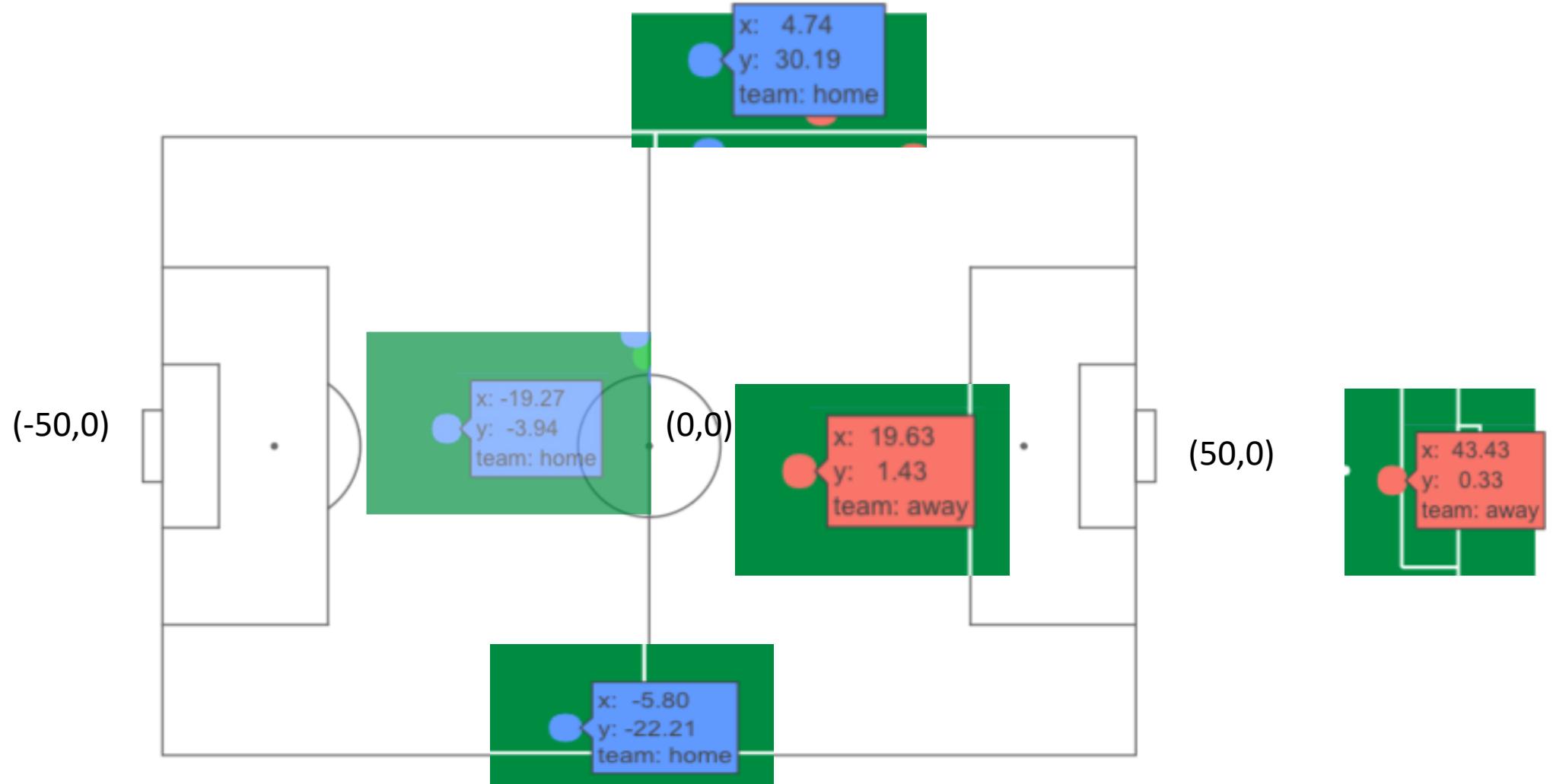
Home

Home x-koord

Home y-koord

Away

```
0,0,"0502031f-c2d5-4e75-a96f-d850c5f6eca0","0c39a037-bef2-41cf-a70c-e7e163821a0a","0f5f99d6-01e2-420f-ba4b-4
6e22d86666e","2cebebd6-50ae-4219-a176-4150cf11ce14","5320edb6-ccba-4fcf-994d-80e410e16e3c","545fa10a-fae0-40
73-a2a4-429cd66e5303","559239f9-a037-495c-ab31-2353979eba0a","a03f5a66-2778-46d3-80cc-d6198d2adae7","ba70d8e
7-2421-406a-a1a0-e79d08f67072","d01516be-13d4-48a6-93dd-0c5b22729b91","e351401f-1b87-4d11-9060-b8404ba99879"
,-3.34,-2.55,4.3,0.16,1.62,-17.82,-7.38,-46.04,3.35,-19.4,-19.35,8.28,3.58,24.81,-0.4,21.23,18.62,-23.44,0.5
8.30.73,-3.91.4.49,"04673b6c-02ee-4668-a2b3-13444b96b57e","6fccc46b-b99f-473b-aed4-3daf0bcb6d1b","700486b7-7
43f-4a8e-87d8-644fa033bd87","83abc1c9-5965-4be3-bdcc-9a0b68e1cc98","b1212ed5-c1ad-40e5-9762-99605c08152c","b
bd517c8-2dd4-4988-bd6c-1acce0b822d9","c161bab6-1db4-45a1-903e-72b366e3dc8f","c4144c51-2e1c-411f-aae9-779ab8e
f3a3c","ccdd0352-9168-48e3-87eb-bf83a1d0b47c","df6e0cd6-6017-49d2-9a84-e3d20a2819f2","fa131972-1037-4eb5-acd
8-3fb94b20dde6",5.77,21.49,43.81,19.54,18.19,4.12,20.49,13.91,7.96,15.59,-1.62,13.74,24.64,0.19,1.39,-11.49,
-9.72,11.6,27.28,3.1,22.54,8.33,-0.22,0.15
1,0.04,"0502031f-c2d5-4e75-a96f-d850c5f6eca0","0c39a037-bef2-41cf-a70c-e7e163821a0a","0f5f99d6-01e2-420f-ba4
b-46e22d86666e","2cebebd6-50ae-4219-a176-4150cf11ce14","5320edb6-ccba-4fcf-994d-80e410e16e3c","545fa10a-fae0
-4073-a2a4-429cd66e5303","559239f9-a037-495c-ab31-2353979eba0a","a03f5a66-2778-46d3-80cc-d6198d2adae7","ba70
d8e7-2421-406a-a1a0-e79d08f67072","d01516be-13d4-48a6-93dd-0c5b22729b91","e351401f-1b87-4d11-9060-b8404ba99879
```





Interview med Frökjær efter sidste kamp i Kvalifikationsspillet



26'



Mads Frökjaer-Jensen is on target to give Odense a 0-1 advantage.

VEJ
0
OBK
1

85'



Vejle have a goal kick.

86'



Goal! The home team take a 2-1 lead through Marius Elvius Kolind Jorgensen.

VEJ
2
OBK
1

Sat May 21 2022 18:07:03

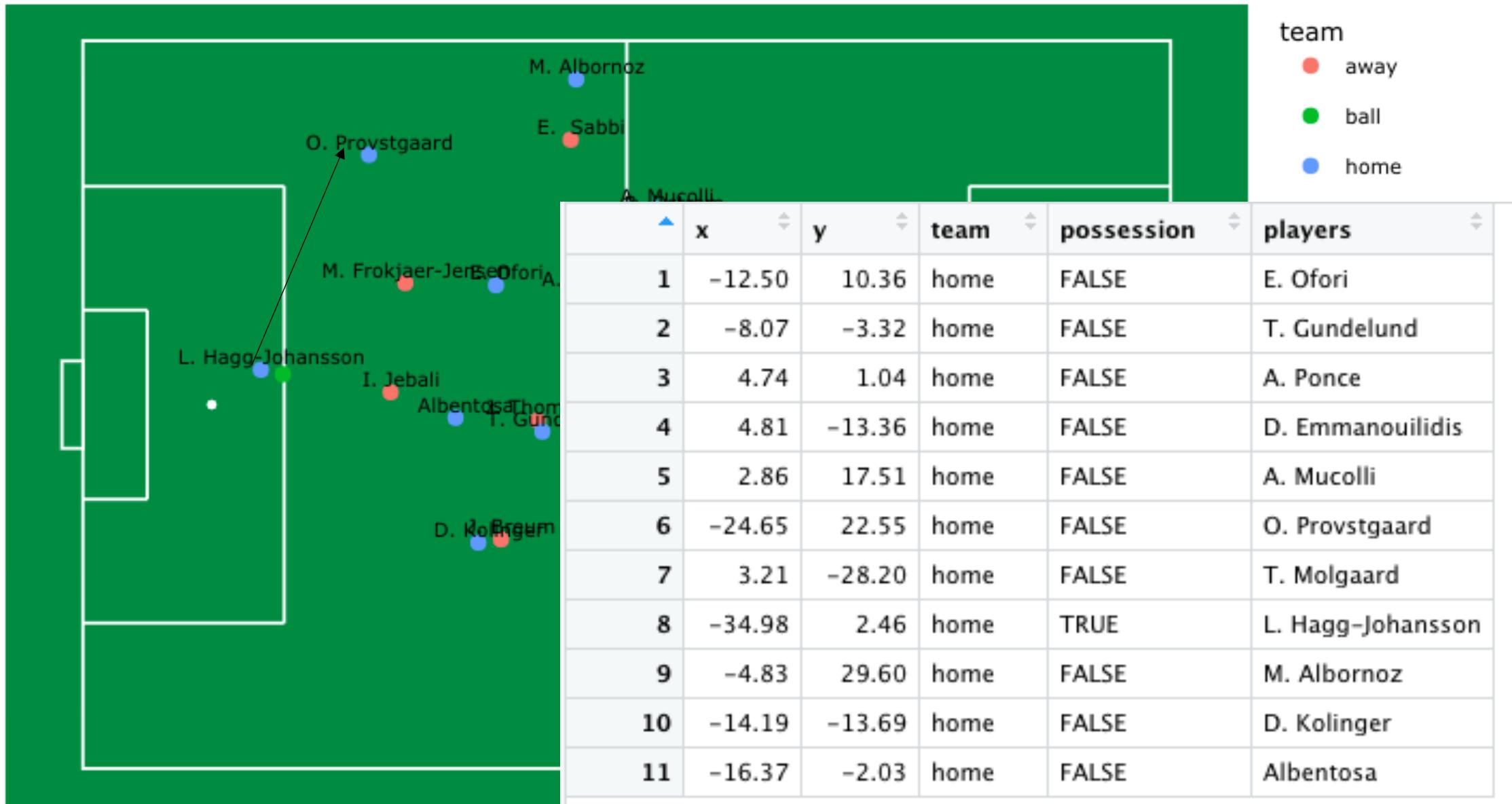
```
"period": 2,  
frameIdx: 69068,  
gameClock: 0,  
wallClock: 1653149223907
```

1653149223947

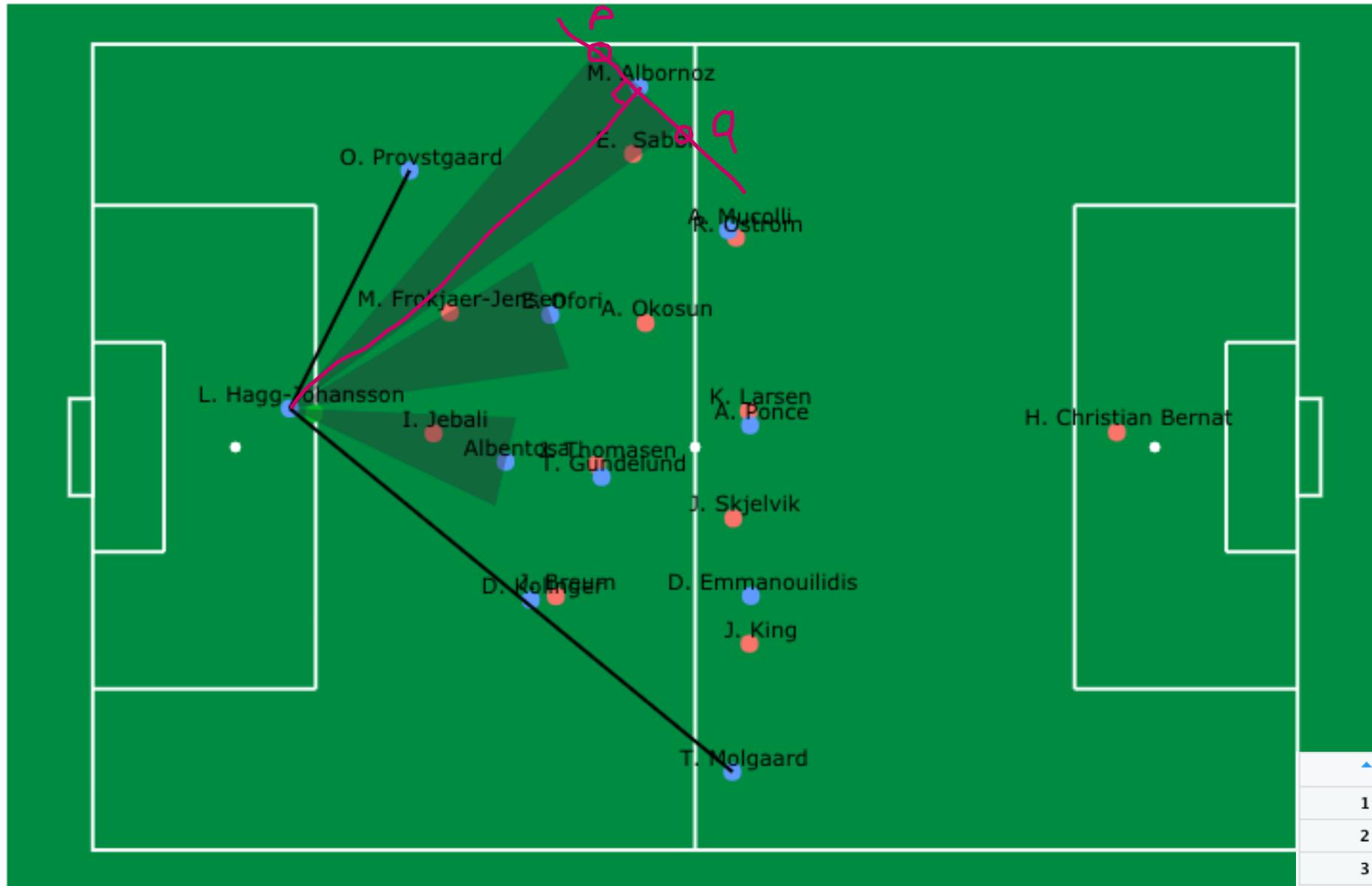
Sat May 21 2022 18:55:43

1653152143507
2919.6

Simple passmap for frame 38503



Simple passmap for frame 38503

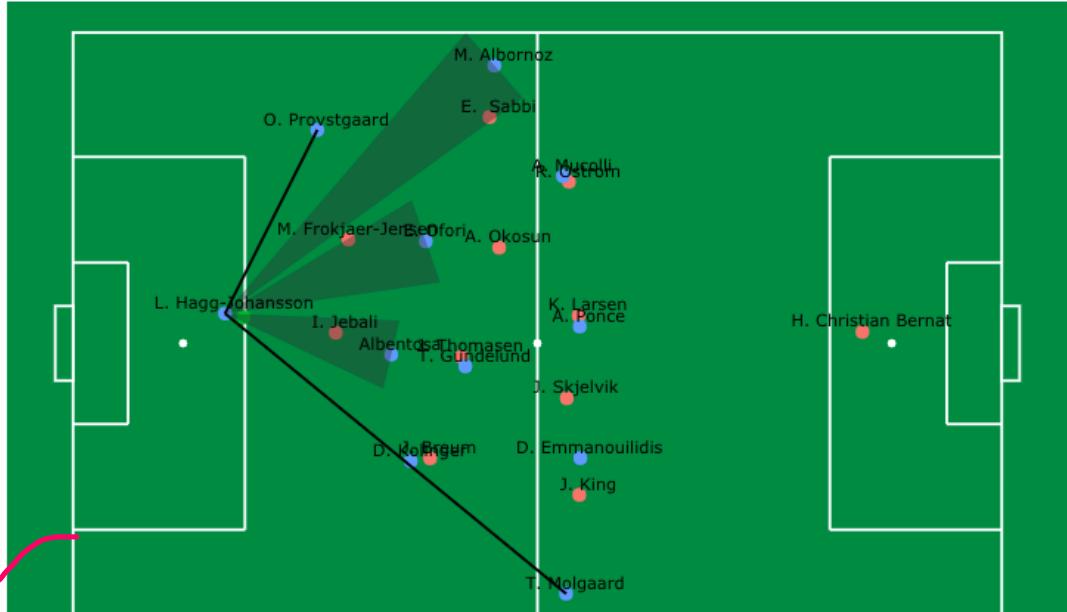


team

- away
- ball
- home

	x	y	team	possession
1	-12.50	10.36	home	FALSE
2	-8.07	-3.32	home	FALSE
3	4.74	1.04	home	FALSE
4	4.81	-13.36	home	FALSE
5	2.86	17.51	home	FALSE

Simple passmap for frame 38503



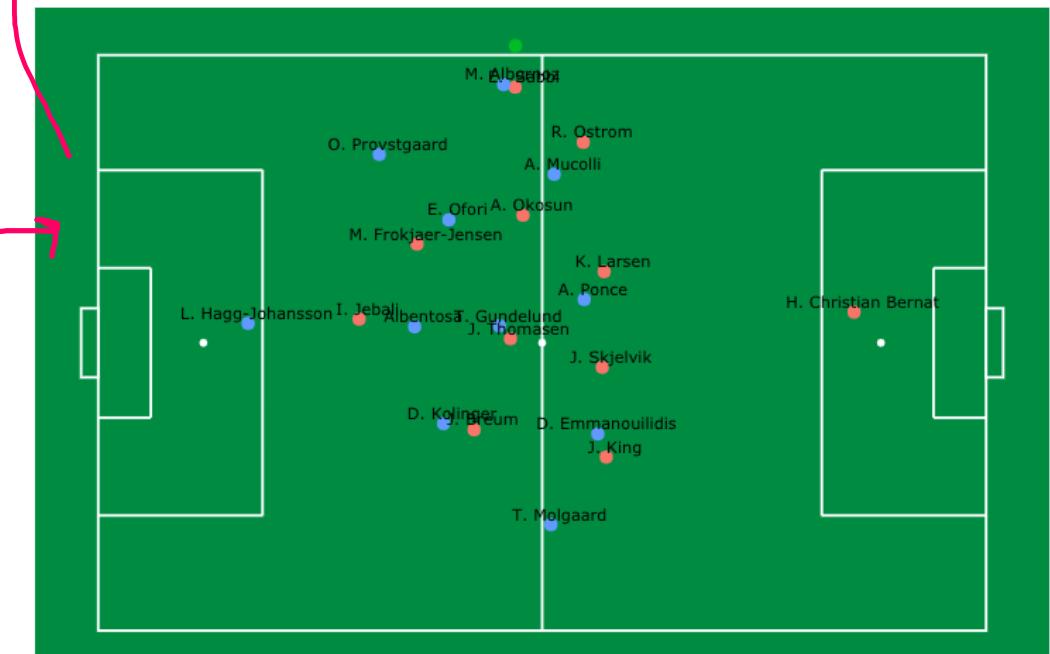
Simple passmap for frame 38560



Simple passmap for frame 38980

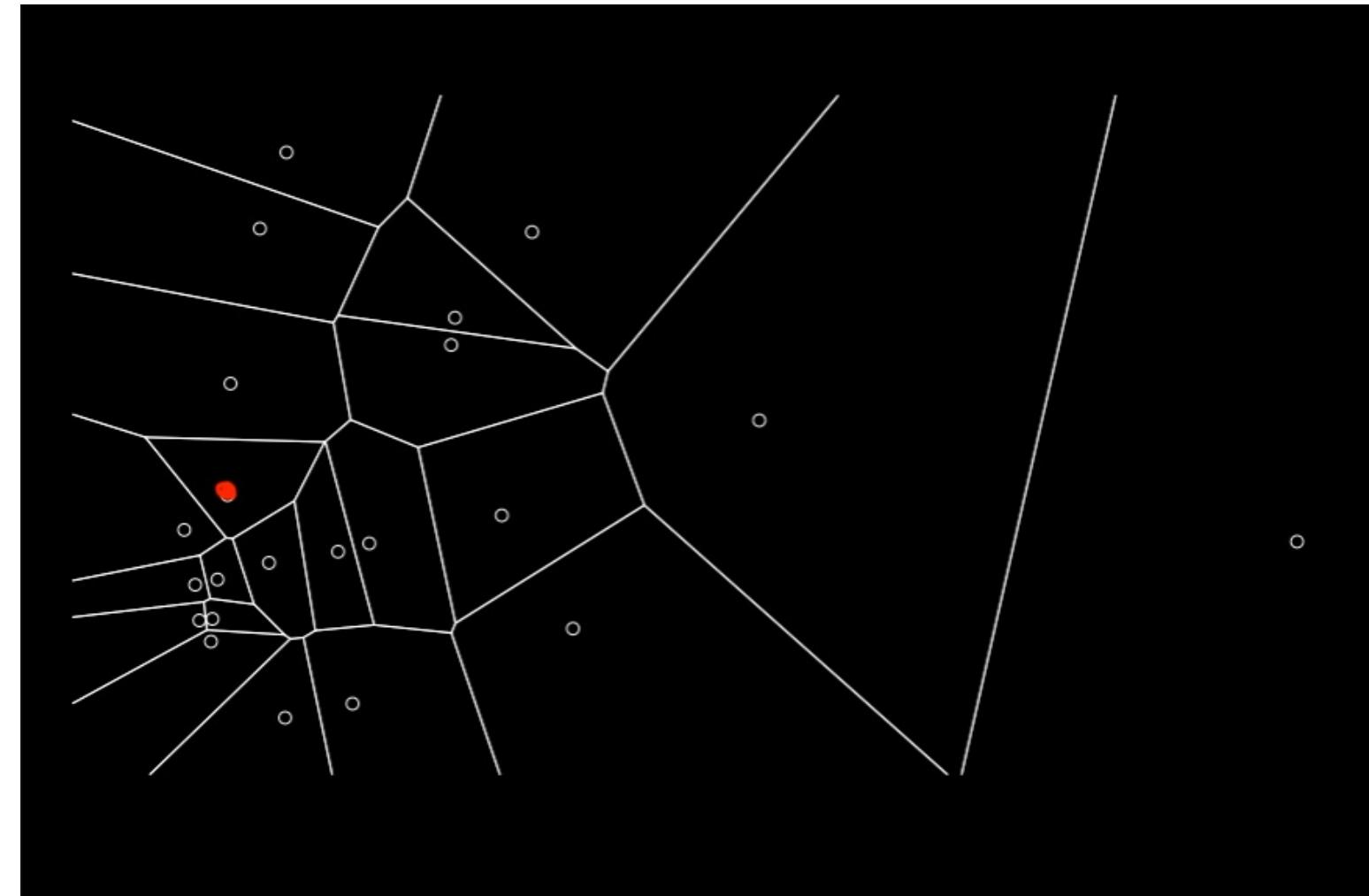


Simple passmap for frame 38580



Pitch Control

Calvin & Thorbjørn



14. Maj 2023

ATCA



Kvinder & Fodbold



PRIMERA DIVISIÓN FEMENINA TABLE

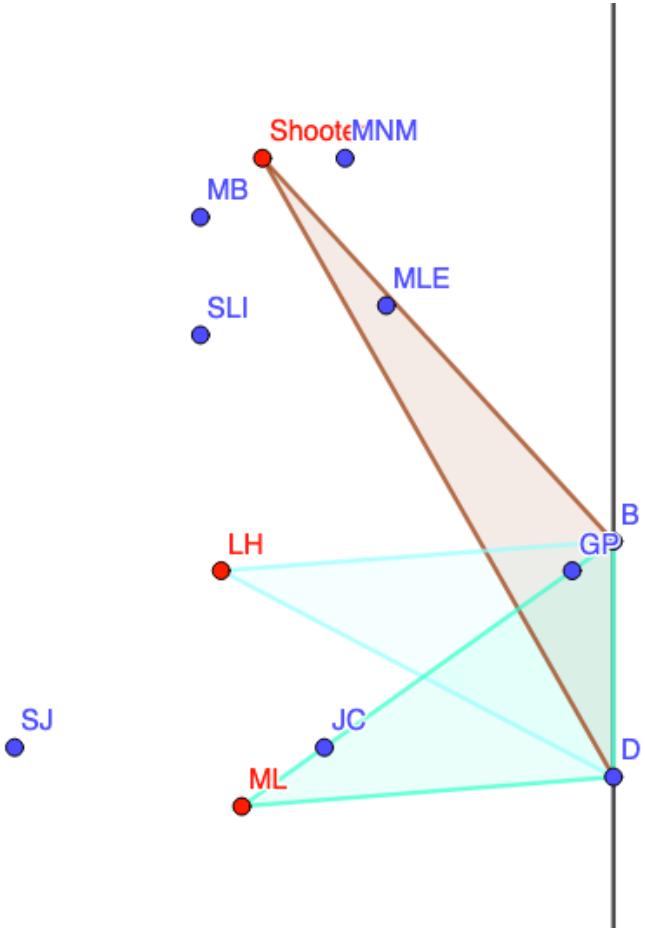
#	Team	MP	D	P
1	Barcelona	27	+138	81
2	Real Sociedad	27	+20	59
3	Atlético Madrid	27	+37	53
4	Real Madrid	27	+8	53
5	Granadilla Ten...	27	+2	53

Kvinder & Fodbold

Find all non-teammates

For each teammate

compute number of nont in triangle



```
freeze_frame: [
  {
    location: [ 102, 35 ],
    player: { id: 15547, name: 'Melissa Lawley' },
    position: { id: 24, name: 'Left Center Forward' },
    teammate: true
  },
  {
    location: [ 101, 43 ],
    player: { id: 15555, name: 'Lauren Hemp' },
    position: { id: 22, name: 'Right Center Forward' },
    teammate: true
  },
  {
    location: [ 118, 43 ],
    player: { id: 4640, name: 'Rut Hedvig Lindahl' },
    position: { id: 1, name: 'Goalkeeper' },
    teammate: false
  },
  {
    location: [ 109, 52 ],
    player: { id: 4633, name: 'Magdalena Lilly Eriksson' },
    position: { id: 5, name: 'Left Center Back' },
    teammate: false
  },
  {
    location: [ 100, 51 ],
    player: { id: 15549, name: 'Sophie Louise Ingle' },
    position: { id: 9, name: 'Right Defensive Midfield' },
    teammate: false
  },
  {
    location: [ 100, 55 ],
    player: { id: 4642, name: 'Millie Bright' },
    position: { id: 3, name: 'Right Center Back' },
    teammate: false
  },
  {
    location: [ 91, 37 ],
    player: { id: 4647, name: 'So-Yun Ji' },
    position: { id: 19, name: 'Center Attacking Midfield' },
    teammate: false
  },
  {
    location: [ 107, 57 ],
    player: { id: 10395, name: 'Maren Nævdal Mjelde' },
    position: { id: 11, name: 'Left Defensive Midfield' },
    teammate: false
  },
  {
    location: [ 106, 37 ],
    player: { id: 19422, name: 'Jessica Carter' },
    position: { id: 2, name: 'Right Back' },
    teammate: false
  }
]
```

wyscout

the football company



hudl

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WIMU **Instat**

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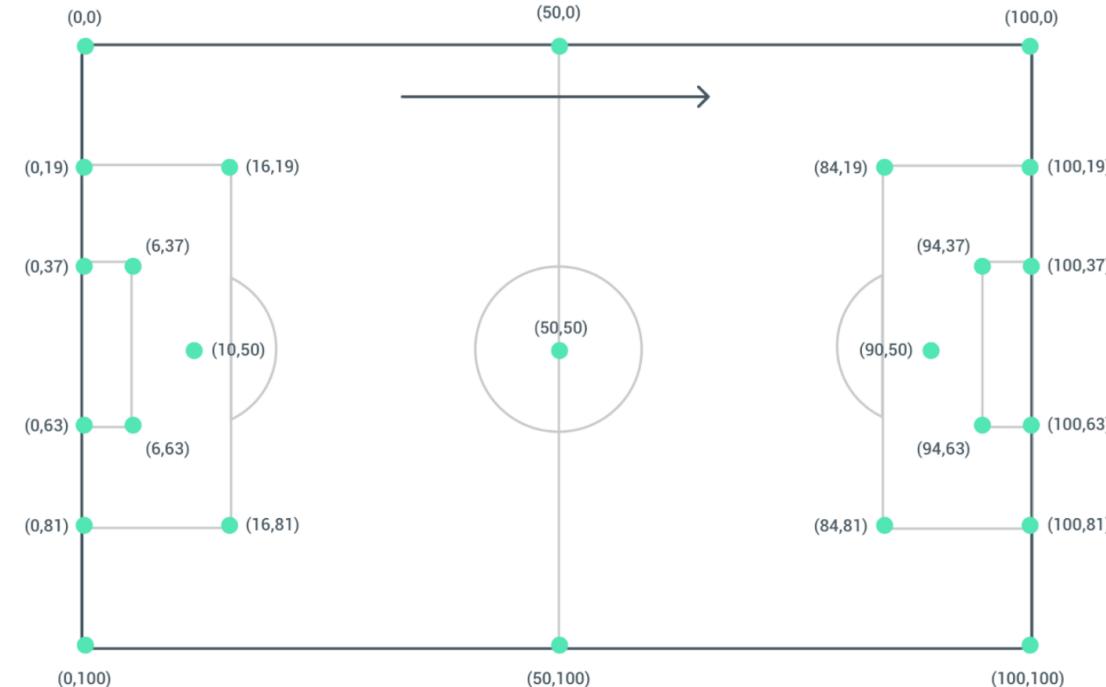
Teams >

Data glossary and definitions

At the following link you can find our Data Glossary that describes events, metrics and concepts used across the Wyscout API, Platform and reports.

[Wyscout Data Glossary](#)

Pitch coordinates



The event's coordinates depends on the subject. The subject's goal to be defended is always **x=0%** and the attack is always **x=100%**. All values are % expressed as (x,y).



```
{  
    "shot": {  
        "bodyPart": "left_foot",  
        "onTarget": true,  
        "isGoal": false,  
        "goalZone": "br",  
        "xg": 0.235,  
        "postShotXg": 0.425,  
        "goalkeeperActionId": 423860521,  
        "goalkeeper": {  
            "id": 21816,  
            "name": "D. De Gea"  
        }  
    }  
}
```

```
| => jq '.events[] | keys[]' evt_5241996.json | sort | uniq  
"aerialDuel"  
"carry"  
"groundDuel"  
"id"  
"infraction"  
"location"  
"matchId"  
"matchPeriod"  
"matchTimestamp"  
"minute"  
"opponentTeam"  
"pass"  
"player"  
"possession"  
"relatedEventId"  
"second"  
"shot"  
"team"  
"type"  
"videoTimestamp"
```

EVENTS PACK

Events

Overview

Types

Location

Possession-specific data

Attack

Event-specific data

Pass

Shot

Ground duel

Aerial duel

Infraction

Carry

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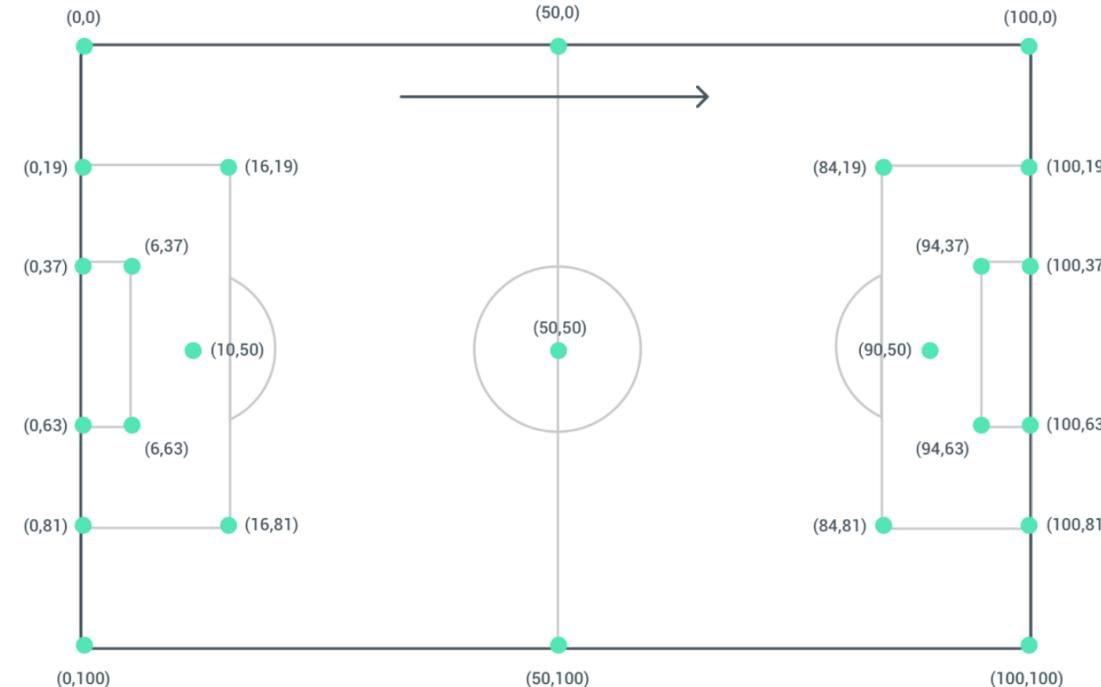
Teams >

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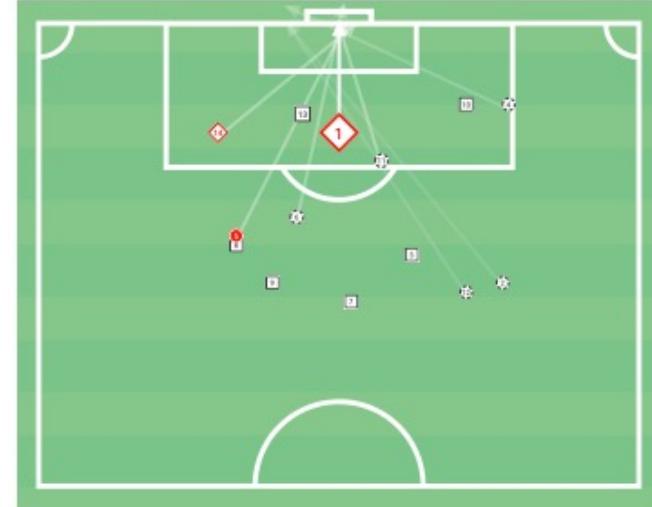


Match Report Sample

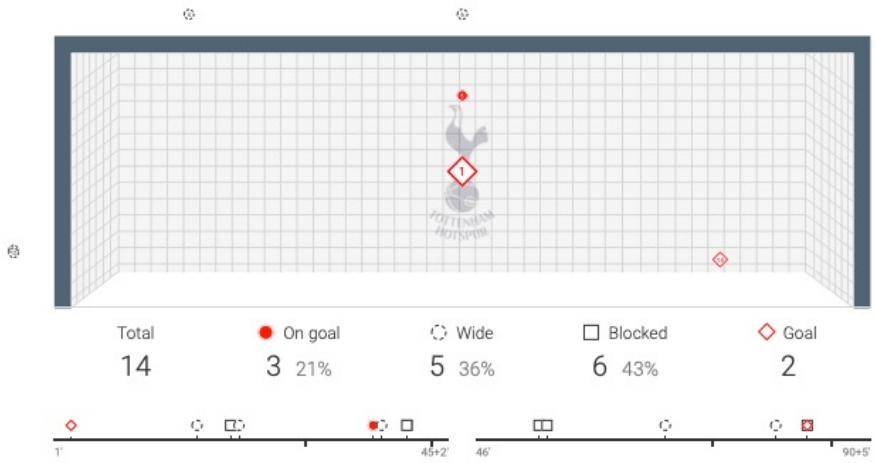
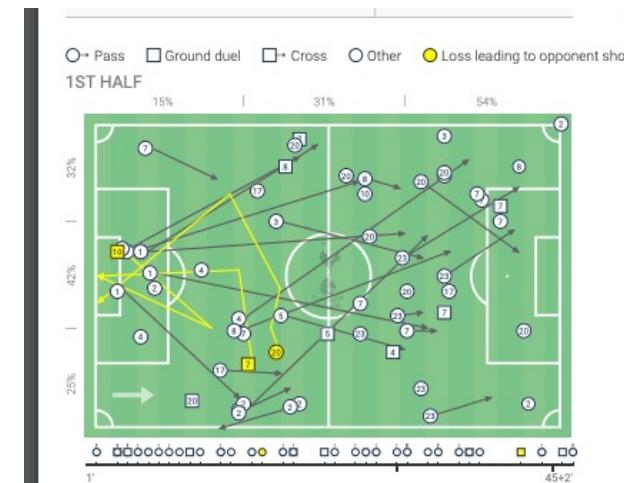
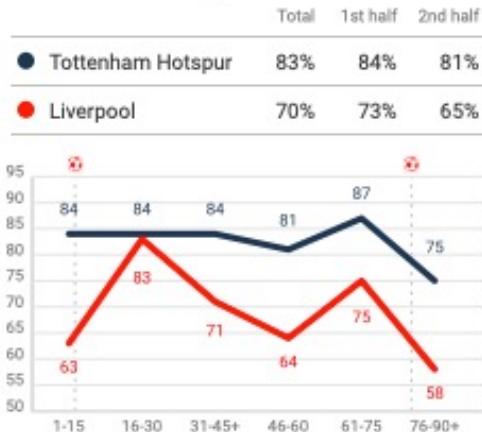
[Download](#)

Tottenham Hotspur 0 – 2 Liverpool

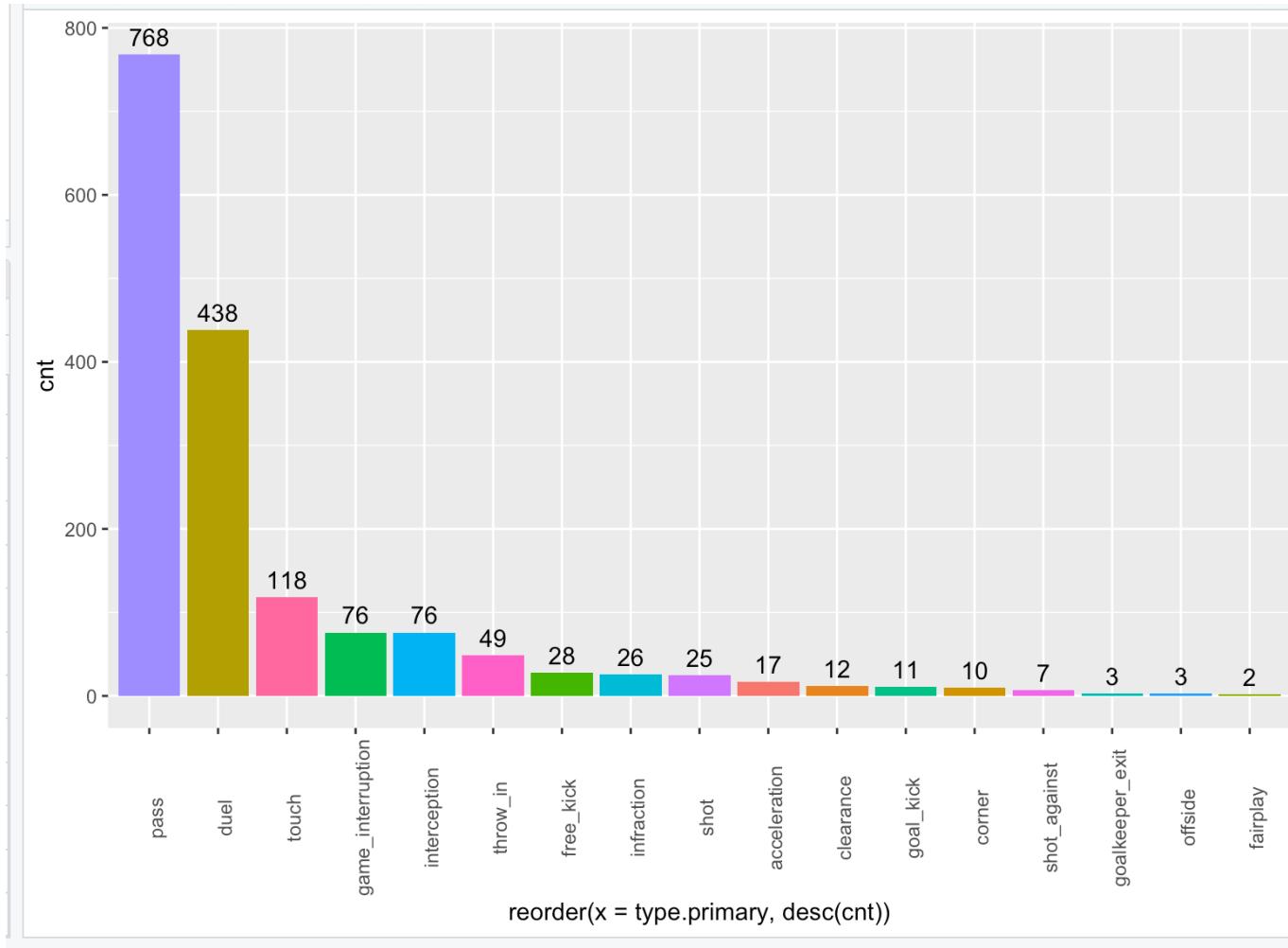
Tottenham Hotspur Liverpool



Pass accuracy, %



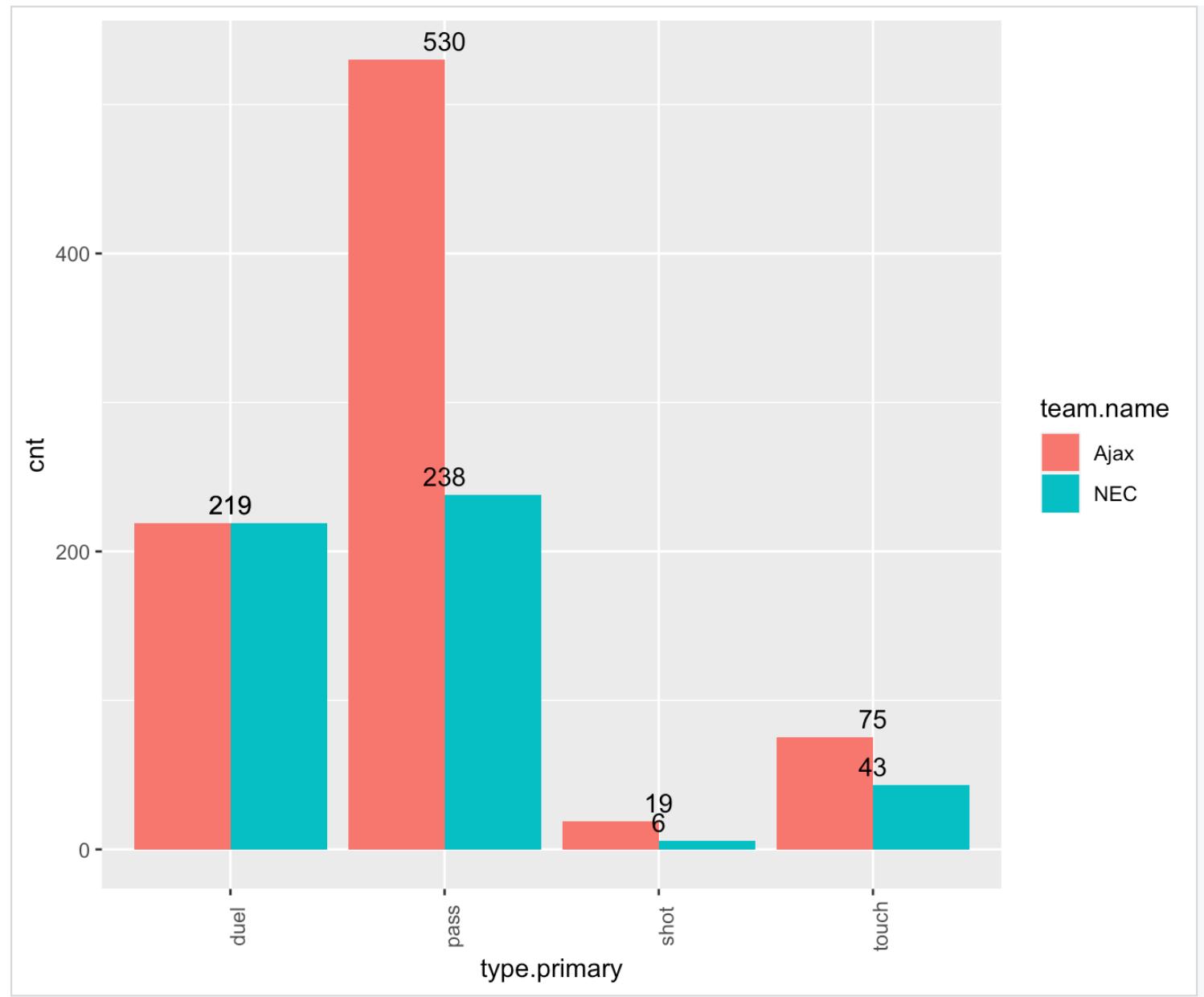
WyScout i R – Øvelse I



Frembring følgende graf – gerne med forbedringer fra evt_5360157.json

WyScout i R

Frembring følgende graf – gerne med forbedringer



Dagens DAL tjek – hent data fra el.html og konverter til dataframe

DAGLIGVARER 28. jan. 2024 - 7:24

Fylder meget i valgkamp: Pristjek af supermarket i USA og Danmark - 'jeg er faktisk overrasket'

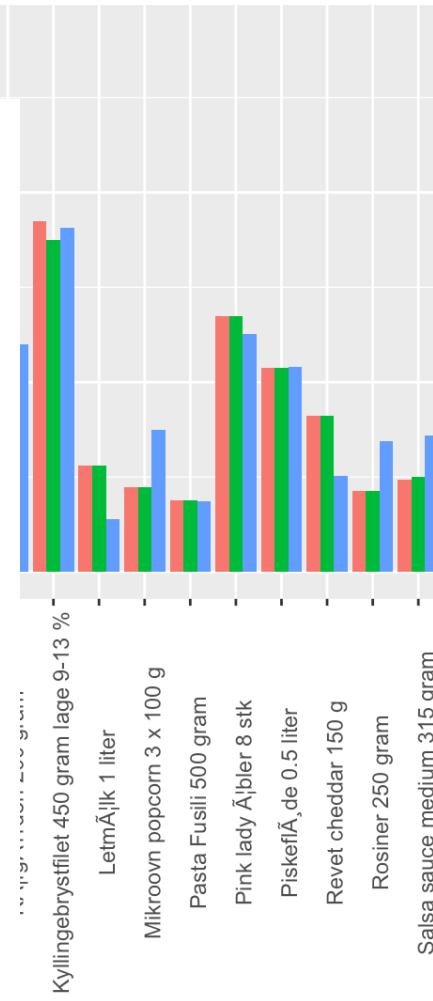
► Læs op ≡ Kø



En indkøbskurv i DK og USA

Alle priser er omregnet i til sammenlignelig vægt og opgjort i danske kroner.

Varer	365 Discount	Bilka	Walmart
Agurk	8,00	8,00	5,21
Pink lady æbler 8 stk	27,00	27,00	25,07
Broccoli 1 stk	14,00	14,00	20,34
Blomkål 1 stk	16,00	17,00	19,66
Kyllingebrystfilet 450 gram lage 9-13 %	34,95	36,95	36,23
Rosiner 250 gram	8,50	8,50	13,77
Letmælk 1 liter	11,25	11,25	5,55
Danskvand m citrus 2 liter	5,05	5,03	28,83
Pasta Fusili 500 gram	7,50	7,50	7,39
Hakkede tomater 400 gram	5,95	5,95	9,04
Revet cheddar 150 g	16,50	16,50	10,07
Kærgården 200 gram	24,95	22,95	23,97
Piskefløde 0,5 liter	21,55	21,55	21,57
Salsa sauce medium 315 gram	10,00	9,75	14,38
Creme fraiche 500 ml 18 %	15,95	15,95	14,18
Bølgeskærme pommes frites 1 kg	17,95	19,95	26,03
Hel kylling 1350 gram	56,95	56,90	4,45
Mikroovn popcorn 3 x 100 g	8,95	8,95	14,92
Cornflakes 500 gram	12,50	14,75	16,03
Æblejuice fra koncentrat 1,5 liter	9,45	9,35	17,74
Samlet pris	332,95	337,78	334,43



as.factor(shop)

- Bilka
- Discount365
- Walmart

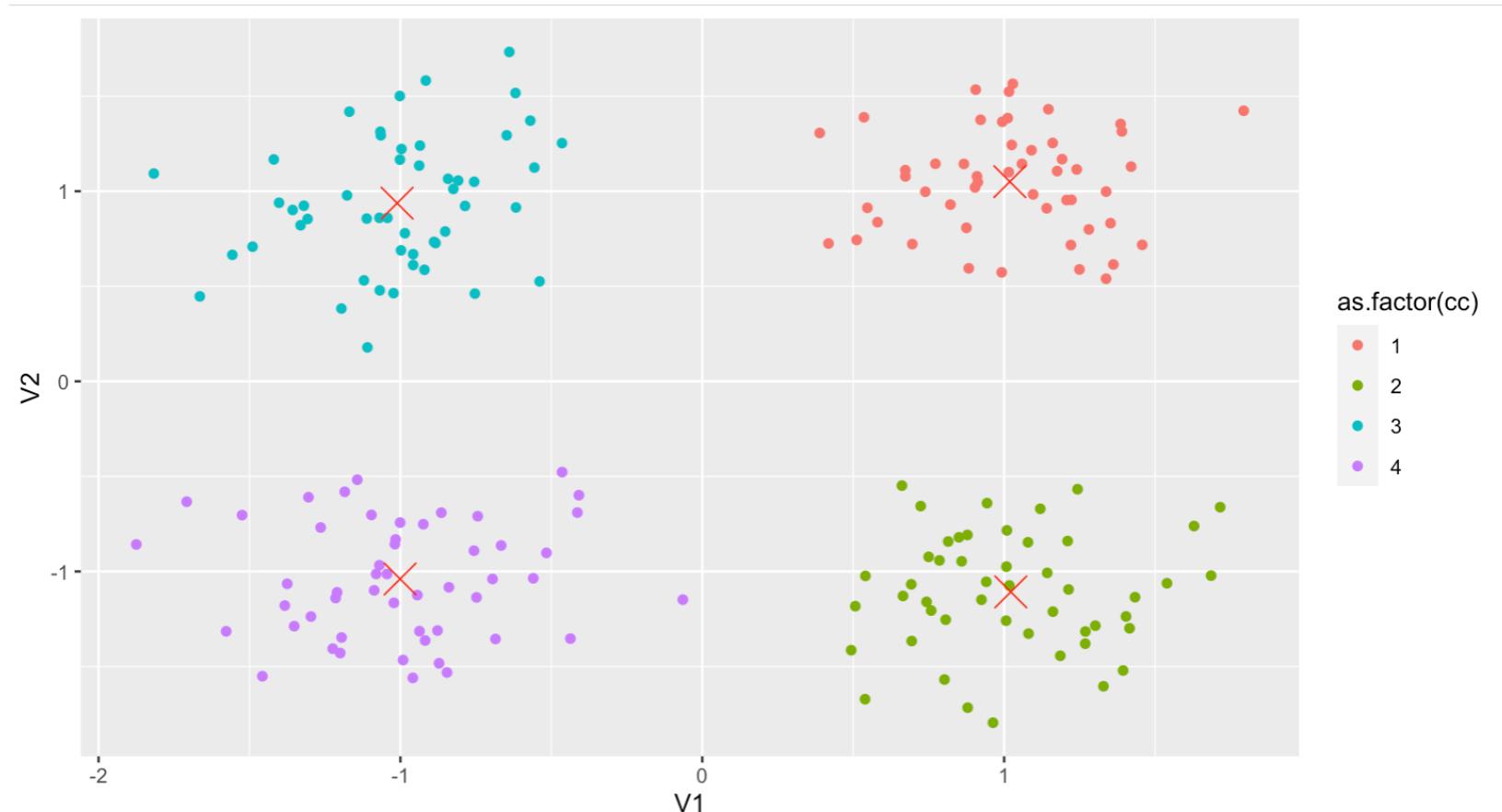
MongoDB

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mongorestore --db wyscout ~/Downloads/games.bson
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Clustering

	Attribute.A	Attribute.B
1	0.41819347	0.7250598
2	1.16077592	1.2537218
3	0.99195122	0.5733258
4	1.05911131	1.1439218
5	0.86661635	1.1435371
6	1.01605275	1.5238306
7	0.99381613	1.3653434
8	1.14670371	1.4310746

	V1	V2
C1	-1.8749140	-1.7957158
Ck	1.7936397	1.7325648
C2	-0.6249713	-0.5985719
C3	-0.9374570	-0.8978579



Clustering

For all points - compute distance to each centroid

	Attribute.A	Attribute.B	name
1	0.41819347	0.7250598	p1
2	1.16077592	1.2537218	p2
3	0.99195122	0.5733258	p3
4	1.05911131	1.1439218	p4
5	0.86661635	1.1435371	p5
197	-0.75629165	-0.8909263	p197
198	-0.94392106	-1.1244913	p198
199	-0.74788575	-1.1365162	p199
200	-0.93689985	-1.3142456	p200

First Centroids

	mx	my	ClusterNames
C1	0.84563249	-0.9832646	C1
C2	0.05079626	-0.9287640	C2
C3	0.15909567	1.6212874	C3
C4	0.79543997	-0.6895563	C4

	Attribute.A	Attribute.B	name	V4	V5	V6	V7
1	0.41819347	0.7250598	p1	1.76	1.69	0.93	1.46
2	1.16077592	1.2537218	p2	2.26	2.45	1.07	1.98
3	0.99195122	0.5733258	p3	1.56	1.77	1.34	1.28
4	1.05911131	1.1439218	p4	2.14	2.30	1.02	1.85

For all points – find the closest centroid

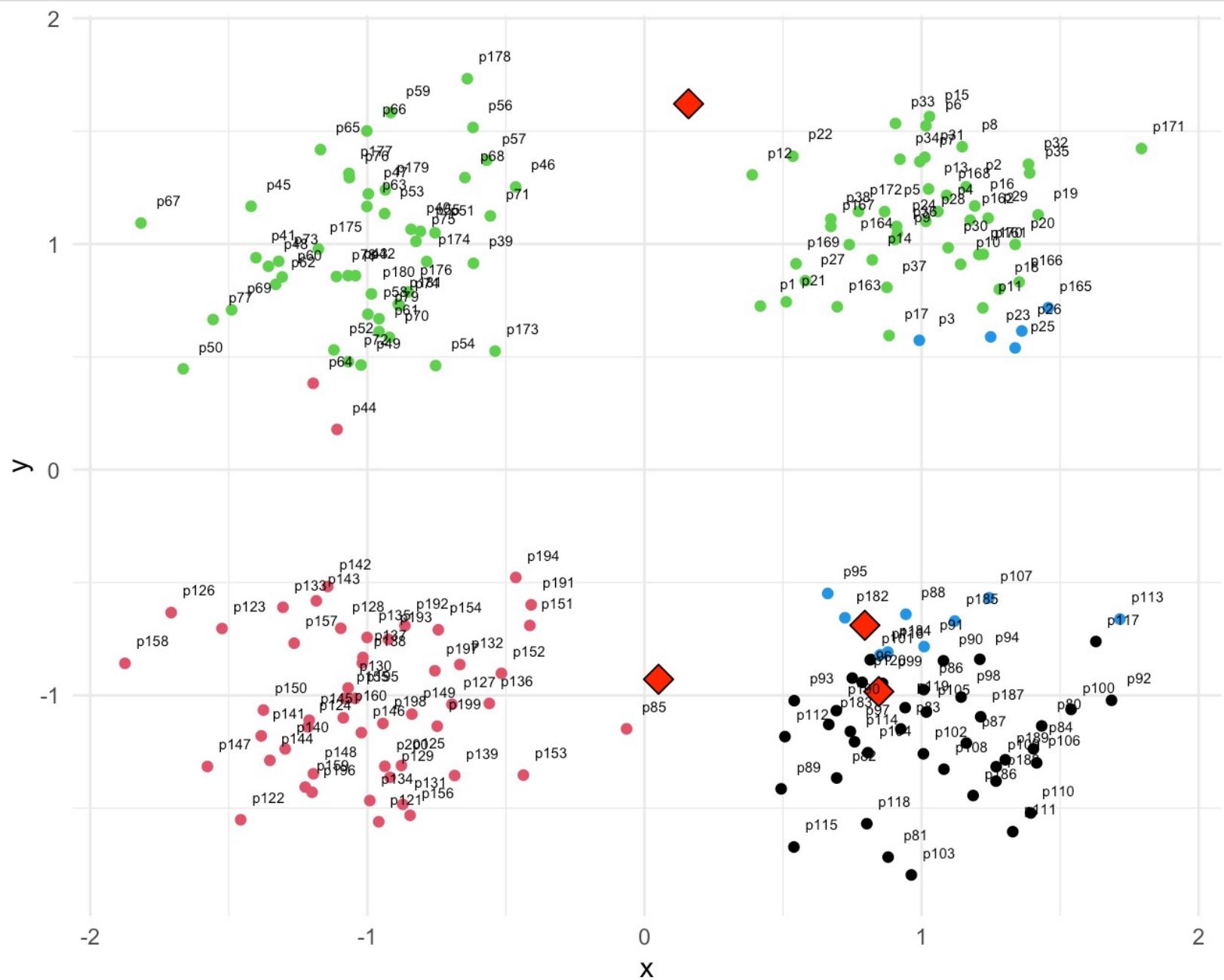
	Attribute.A	Attribute.B	name	V4	V5	V6	V7	cluster1
1	0.41819347	0.7250598	p1	1.76	1.69	0.93	1.46	3
2	1.16077592	1.2537218	p2	2.26	2.45	1.07	1.98	3
3	0.99195122	0.5733258	p3	1.56	1.77	1.34	1.28	4
4	1.05911131	1.1439218	p4	2.14	2.30	1.02	1.85	3
5	0.86661635	1.1435371	p5	2.13	2.23	0.85	1.83	3
197	-0.75629165	-0.8909263	p197	1.60	0.81	2.67	1.56	2
198	-0.94392106	-1.1244913	p198	1.80	1.01	2.96	1.79	2
199	-0.74788575	-1.1365162	p199	1.60	0.83	2.90	1.61	2
200	-0.93689985	-1.3142456	p200	1.81	1.06	3.13	1.84	2

Clustering

	Attribute.A	Attribute.B	name
1	0.41819347	0.7250598	p1
2	1.16077592	1.2537218	p2
3	0.99195122	0.5733258	p3
4	1.05911131	1.1439218	p4
5	0.86661635	1.1435371	p5
197	-0.75629165	-0.8909263	p197
198	-0.94392106	-1.1244913	p198
199	-0.74788575	-1.1365162	p199
200	-0.93689985	-1.3142456	p200

First Centroids

	mx	my	ClusterNames
C1	0.84563249	-0.9832646	C1
C2	0.05079626	-0.9287640	C2
C3	0.15909567	1.6212874	C3
C4	0.79543997	-0.6895563	C4



Clustering

	Attribute.A	Attribute.B	name
1	0.41819347	0.7250598	p1
2	1.16077592	1.2537218	p2
3	0.99195122	0.5733258	p3
4	1.05911131	1.1439218	p4
5	0.86661635	1.1435371	p5
197	-0.75629165	-0.8909263	p197
198	-0.94392106	-1.1244913	p198
199	-0.74788575	-1.1365162	p199
200	-0.93689985	-1.3142456	p200

For all points – group by cluster and compute the mean of x and y

	Attribute.A	Attribute.B	name	V4	V5	V6	V7	cluster1
1	0.41819347	0.7250598	p1	1.76	1.69	0.93	1.46	3
2	1.16077592	1.2537218	p2	2.26	2.45	1.07	1.98	3
3	0.99195122	0.5733258	p3	1.56	1.77	1.34	1.28	4
4	1.05911131	1.1439218	p4	2.14	2.30	1.02	1.85	3
5	0.86661635	1.1435371	p5	2.13	2.23	0.85	1.83	3

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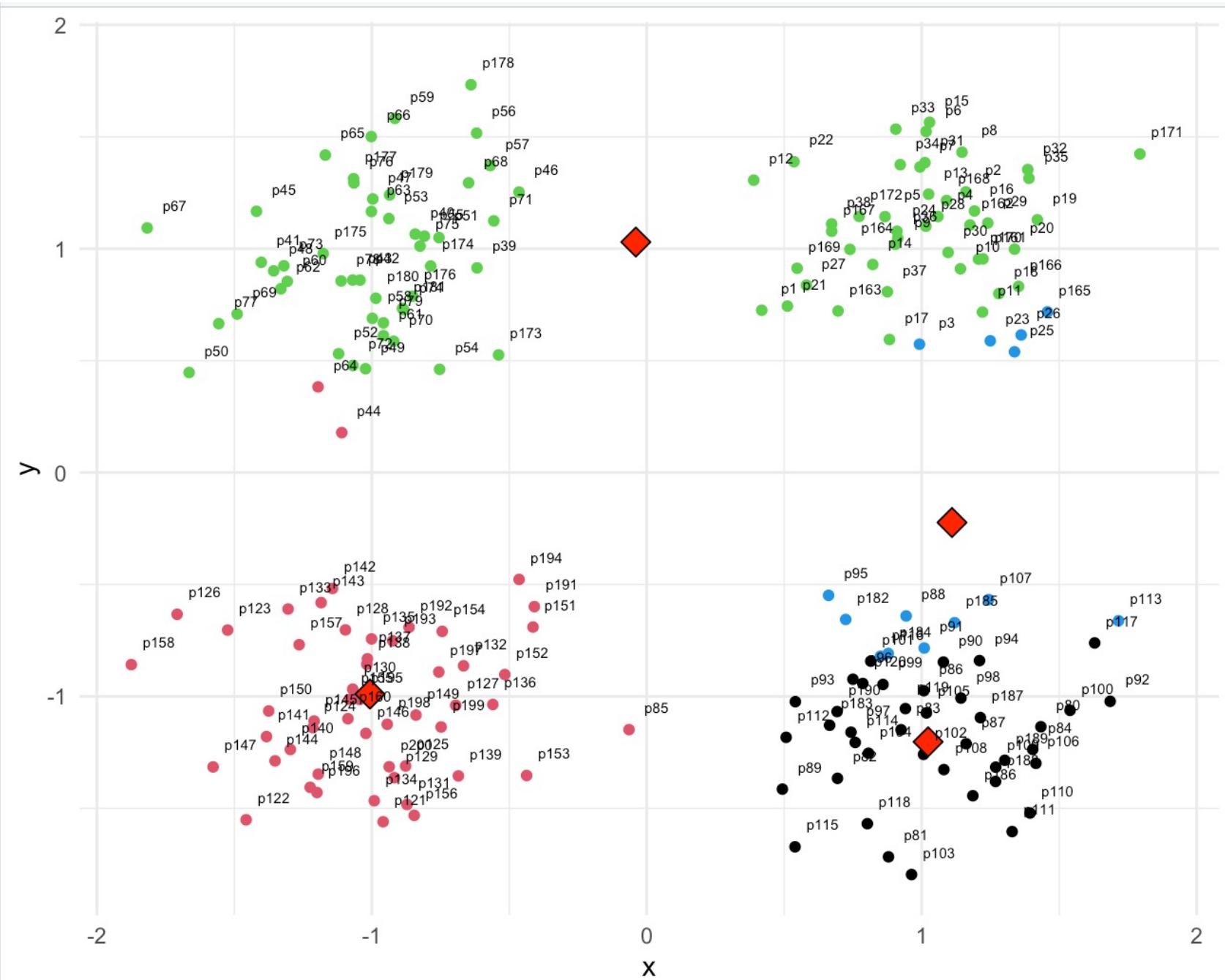
New centroids

	mx	my	ClusterNames
1	-0.03972441	1.0299160	C1
2	1.11028066	-0.2231393	C2
3	-1.00673697	-0.9896827	C3
4	1.02340505	-1.2028774	C4

Clustering

New centroids

	mx	my	ClusterNames
1	-0.03972441	1.0299160	C1
2	1.11028066	-0.2231393	C2
3	-1.00673697	-0.9896827	C3
4	1.02340505	-1.2028774	C4



Clustering

For all points - compute distance to each new centroid

New centroids

	mx	my	ClusterNames
1	-0.03972441	1.0299160	C1
2	1.11028066	-0.2231393	C2
3	-1.00673697	-0.9896827	C3
4	1.02340505	-1.2028774	C4

	Attribute.A	Attribute.B	name	V4	V5	V6	V7
1	0.41819347	0.7250598	p1	0.55	1.17	2.23	2.02
2	1.16077592	1.2537218	p2	1.22	1.48	3.12	2.46
3	0.99195122	0.5733258	p3	1.13	0.81	2.54	1.78
4	1.05911131	1.1439218	p4	1.10	1.37	2.97	2.35
5	0.86661635	1.1435371	p5	0.91	1.39	2.84	2.35

	Attribute.A	Attribute.B	name	V4	V5	V6	V7
1	0.41819347	0.7250598	p1	1.76	1.69	0.93	1.46
2	1.16077592	1.2537218	p2	2.26	2.45	1.07	1.98
3	0.99195122	0.5733258	p3	1.56	1.77	1.34	1.28
4	1.05911131	1.1439218	p4	2.14	2.30	1.02	1.85

Clustering

New centroids

	mx	my	ClusterNames
1	-0.03972441	1.0299160	C1
2	1.11028066	-0.2231393	C2
3	-1.00673697	-0.9896827	C3
4	1.02340505	-1.2028774	C4

For all points - compute distance to each new centroid

	Attribute.A	Attribute.B	name	V4	V5	V6	V7
1	0.41819347	0.7250598	p1	0.55	1.17	2.23	2.02
2	1.16077592	1.2537218	p2	1.22	1.48	3.12	2.46
3	0.99195122	0.5733258	p3	1.13	0.81	2.54	1.78
4	1.05911131	1.1439218	p4	1.10	1.37	2.97	2.35
5	0.86661635	1.1435371	p5	0.91	1.39	2.84	2.35

	Attribute.A	Attribute.B	name	V4	V5	V6	V7
1	0.41819347	0.7250598	p1	1.76	1.69	0.93	1.46
2	1.16077592	1.2537218	p2	2.26	2.45	1.07	1.98
3	0.99195122	0.5733258	p3	1.56	1.77	1.34	1.28
4	1.05911131	1.1439218	p4	2.14	2.30	1.02	1.85

For all points – find the closest centroid

	Attribute.A	Attribute.B	name	V4	V5	V6	V7	cluster1	cluster2
1.37	0.41819347	0.7250598	p1	0.55	1.17	2.23	2.02	3	1
2	1.16077592	1.2537218	p2	1.22	1.48	3.12	2.46	3	1
3	0.99195122	0.5733258	p3	1.13	0.81	2.54	1.78	4	2
4	1.05911131	1.1439218	p4	1.10	1.37	2.97	2.35	3	1
5	0.86661635	1.1435371	p5	0.91	1.39	2.84	2.35	3	1

Clustering

mx	my	ClusterNames
0.7611444	1.0983827	C1
-1.0494075	-0.1900364	C3
1.0219674	-1.0181658	C4
0.8868295	-1.5822928	C2

