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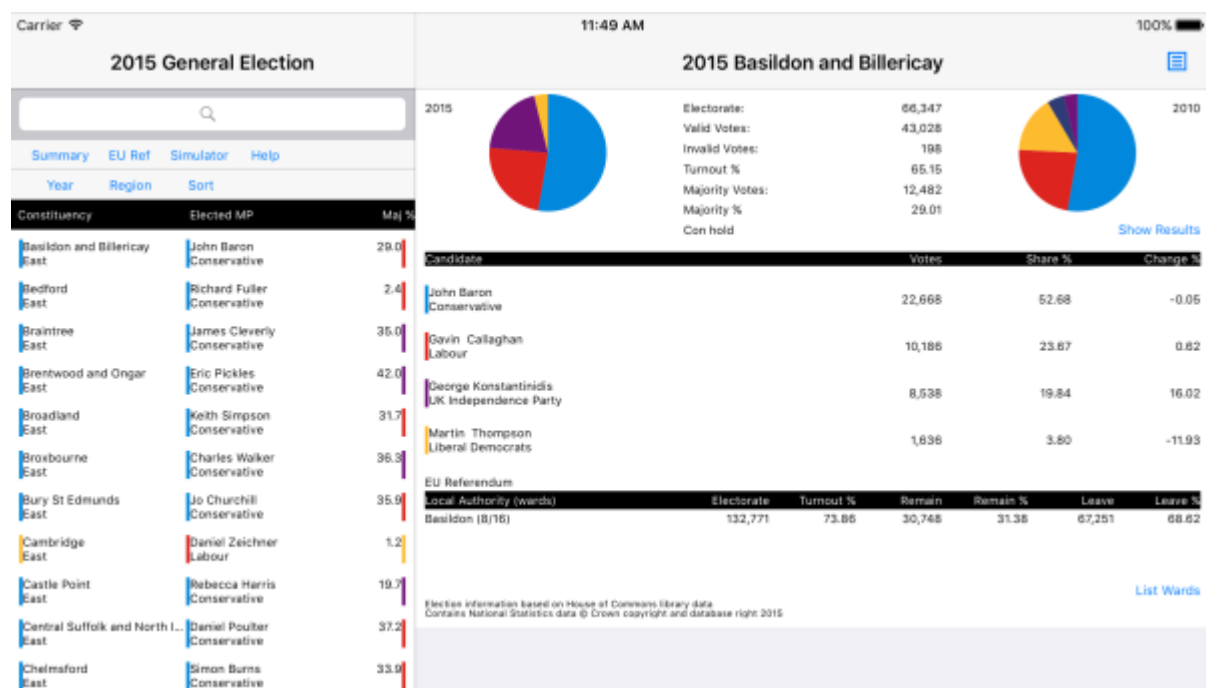
Introduction

The UK General Elections app stores and displays election results from the 2010, 2015 and 2017 General elections and subsequent by-elections and the results of the EU referendum. It allows this data to be filtered and searched and to be sorted in multiple ways (see below). A Simulator is also provided to create what-if scenarios based on the actual election results allowing entry of simulation parameters at National level with overrides by region.

Main Results list

Details displayed

The main results list of the most recent General Election is displayed when the application is opened.



The list is initially sorted by Region and Constituency. A search box at top of list allows the list to be filtered by the partial entry of a Region, Constituency, MP or Party name. It is also possible to find an unsuccessful candidate in an election by entering that candidate's full name.

The details shown for each Constituency are:



On the left, a colour code for the party holding the seat before the election (Lib Dem in example) and the constituency name and region.

In the middle, a colour code for the party that won the seat in this election (Labour in example) and the MP's name and his/her party name.

On the right, the majority percentage over the runner-up candidate and a colour code for the runner up party (Conservative in example).

Filter Options

Year

Displays a pop-up list allowing selection of an election year. If a simulation has been run, it will appear on the list as 2010 Sim or 2015 Sim. By elections appear as the main general election year followed by a +.

Select Year	Done
2015+	
2015 Sim	
2015	✓
2010+	
2010	

Region

Displays a pop-up list of regions. Selecting a region filters the list to constituencies in the region. Selecting UK Wide returns to the full list. If using the Simulator, the input option changes to entering regional override data for the selected region or changes back to the main national grid.

Select Region	Done
East	
East Midlands	
London	
North East	
North West	
Northern Ireland	
Scotland	
South East	
South West	
Wales	
West Midlands	
Yorkshire and The Humber	
UK Wide	

Sort Options

Displays a pop-up list of data items to set the results list sort order. Items can be moved up or down the list to change the order.



This function can be used to get answers to questions like:

“What were the most marginal constituencies?” – Move Majority % to top of list.

“What were the most marginal constituencies for each Region?” – Move Region to top of list and Majority % to second (Or just filter by Region first)

“What are the most marginal constituencies won by party x?” – Move Winning Party to top of list with Majority % second

“What are the most marginal constituencies won by party x where party y is the runner-up?” – Move Winning Party to top of list, move Runner-up party to second place and Majority % to third place.

“What are the most marginal constituencies won by party x where party z held the seat before the election?” – Move Winning Party to top of list, move Previous party to second place and Majority % to third place.

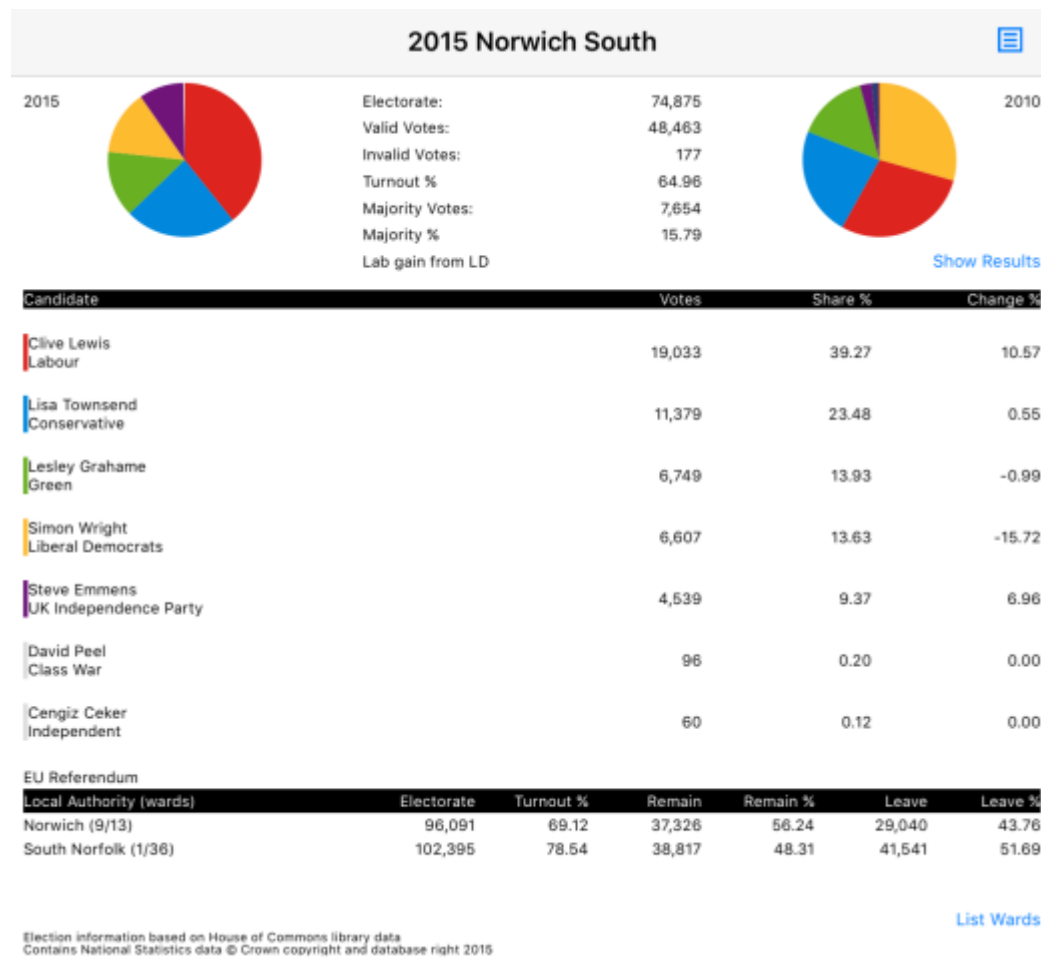
“What are the most marginal constituencies that changed party at the last election” – Move Party Changed to top of list followed by Majority %.

etc.

Note: The same options can be used on a set of Simulation results where the comparisons are with the actual results of the based-on election.

Detail Constituency Results

Selecting any result on the results list displays the detail results for the constituency.



At the top of the screen are pie-charts allowing comparison of the current and previous election. Selecting Show Result under the previous election replaces the breakdown and details of the current election with the previous election details.

The election results and candidate details shown are self-explanatory.

At the bottom of the screen are the results of the EU Referendum for Local Authorities that contain this constituency. EU Referendum results were not released at constituency level so this information is only to give an indication of the opinions in this area. Beside each Local Authority in brackets are the number of wards from that authority in the constituency out of the total number of wards in the authority. (In the example above, we can see that the constituency is mainly in Norwich).

List wards gives the names of the wards from each local authority making up this constituency.

Party Results Summary

Selecting Summary on the main results list screen displays the Party Summary Results screen. List is ordered by number of seats gained and then by votes received in descending order. The list can be filtered by region on the main list screen.

List shows the party, seats won, number of candidates entered, percentage of vote obtained, percentage change from previous election and the total votes received.

2015 UK Wide					
Party	Seats	Cand.	%Vote	%Chg	Total Votes
Conservative	330	647	36.81	0.76	11,299,609
Labour	232	631	30.45	1.46	9,347,273
Scottish National Party	56	59	4.74	3.08	1,454,436
Liberal Democrats	8	631	7.87	-15.16	2,415,916
Democratic Unionist Party	8	16	0.60	0.03	184,260
Sinn Féin	4	18	0.57	-0.01	176,232
Plaid Cymru	3	40	0.59	0.03	181,704
Social Democratic and Labour Party	3	18	0.33	-0.05	99,809
Ulster Unionist Party	2	15	0.37	0.03	114,935
UK Independence Party	1	624	12.64	9.55	3,881,099
Green	1	573	3.77	2.81	1,157,630
Independent	1	173	0.34	-0.31	103,426
Speaker	1	1	0.11	0.04	34,617
Alliance	0	18	0.20	0.06	61,556
Trade Unionist and Socialist Coalition	0	128	0.11	0.07	34,061
Traditional Unionist Voice	0	7	0.05	-0.03	16,538
National Health Action Party	0	11	0.04	0.04	12,999
Respect	0	4	0.03	-0.08	9,989
Cannabis is Safer than Alcohol Party	0	32	0.03	0.03	8,419
Independent Community and Health Concern	0	1	0.02	-0.03	7,211
Yorkshire First	0	14	0.02	0.02	6,811
People Before Profit Alliance	0	1	0.02	0.02	6,798
English Democrats	0	32	0.02	-0.20	6,531
Mebyon Kernow	0	6	0.02	0.00	5,675
Lincs Ind	0	5	0.02	0.00	5,407
Liberal	0	4	0.01	-0.01	4,480
Monster Raving Loony Party	0	16	0.01	-0.01	3,898
Independent Save Witherbush Save Lives	0	1	0.01	0.01	3,729
Socialist Labour Party	0	8	0.01	0.01	3,481
Christian Peoples Alliance Party	0	17	0.01	-0.01	3,260
Christian Party, Proclaiming Christ's Lordship	0	9	0.01	0.01	3,205

EU Referendum Results

Selecting EU Ref on the main results screen displays the EU Referendum Results screen. List is initially ordered by region and local authority. The list can be filtered by region on the main list screen.

EU Referendum UK Wide							
Total Electorate	46,500,001						
Total Votes Cast	33,551,983	Turnout %	72.15				
Remain Votes	16,141,241	Remain Percent	48.11				
Leave Votes	17,410,742	Leave Percent	51.89				
Sort							
Region	Local Authority	Electorate	Turnout%	Remain	Remain%	Leave	Leave%
East	Babergh	70,628	78.26	25,309	45.81	29,933	54.19
East	Basildon	132,771	73.86	30,748	31.38	67,251	68.62
East	Bedford	119,530	72.06	41,497	48.22	44,569	51.78
East	Braintree	112,562	76.67	33,523	38.87	52,713	61.13
East	Breckland	98,989	74.34	26,313	35.78	47,235	64.22
East	Brentwood	58,777	79.50	19,077	40.85	27,627	59.15
East	Broadland	99,254	78.37	35,469	45.63	42,268	54.37
East	Broxbourne	68,997	73.78	17,166	33.74	33,706	66.26
East	Cambridge	80,108	72.22	42,682	73.85	15,117	26.15
East	Castle Point	68,860	75.38	14,154	27.30	37,691	72.70
East	Central Bedfordshire	204,004	77.89	69,670	43.87	89,134	56.13
East	Chelmsford	129,971	77.60	47,545	47.17	53,249	52.83
East	Colchester	127,520	75.11	44,414	46.40	51,305	53.60
East	Dacorum	108,965	79.21	42,542	49.33	43,702	50.67
East	East Cambridgeshire	62,435	77.08	23,599	49.08	24,487	50.92
East	East Hertfordshire	106,260	80.40	42,372	49.64	42,994	50.36
East	Epping Forest	100,016	76.89	28,676	37.31	48,176	62.69
East	Enfield	71,447	73.69	15,055	28.61	37,571	71.39
East	Forest Heath	38,527	72.62	9,791	35.03	18,160	64.97
East	Great Yarmouth	72,634	69.06	14,284	28.50	35,844	71.50
East	Harlow	59,124	73.56	13,867	31.90	29,602	68.10
East	Hertsmere	73,295	76.62	27,593	49.16	28,532	50.84
East	Huntingdonshire	128,486	77.82	45,729	45.76	54,198	54.24
East	Ipswich	91,574	72.51	27,698	41.74	38,655	58.26
East	King's Lynn and West Norfolk	113,884	74.75	28,587	33.60	56,493	66.40
East	Luton	127,612	66.31	36,708	43.45	47,773	56.55
East	Maldon	49,073	79.17	14,529	37.42	24,302	62.58
East	Mid Suffolk	78,325	78.16	27,391	44.77	33,794	55.23
East	North Hertfordshire	99,316	78.27	42,234	54.37	35,438	45.63
East	North Norfolk	83,065	76.84	26,214	41.09	37,576	58.91
East	Norwich	96,091	69.12	37,326	56.24	29,040	43.76

Clicking on a row displays a list of the constituencies in that local authority region.

Total Electorate	46,500,001							Done
Total Votes Cast	33,551,983	Turnout %						
Remain Votes	16,141,241	Remain Percent						
Leave Votes	17,410,742	Leave Percent						
Sort								
Region	Local Authority	Electorate	Turnout%	Remain	Remain%	Leave	Leave%	
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East	Ipswich	91,574	72.51	27,698	41.74	38,655	58.26	
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East	Luton	127,612	66.31	36,708	43.45	47,773	56.55	
East	Maldon	49,073	79.17	14,529	37.42	24,302	62.58	
East	Mid Suffolk	78,325	78.16	27,391	44.77	33,794	55.23	
East	North Hertfordshire	99,316	78.27	42,234	54.37	35,438	45.63	
East	North Norfolk	83,065	76.84	26,214	41.09	37,576	58.91	
East	Norwich	96,091	69.12	37,326	56.24	29,040	43.76	

Sort

Selecting Sort displays a pop-up list of data items to sort by:

Done	
Region	≡
Local Authority	≡
Electorate	≡
Turnout%	≡
Remain	≡
Remain%	≡
Leave	≡
Leave%	≡

Simulator

National Grid

Selecting Simulator on the main results list when the list is not filtered by region displays the following grid:

UK Wide Simulator based on 2015 results

	Start %	Con	Lab	LD	UKIP	Green	SNP	PC	DUP	SF	SDLP	UUP	Allian...	Other	Chg%	End %
Con	36.81			2											-2	37.81
Lab	30.45															30.45
LD	7.87															10.87
UKIP	12.64	3													-3	9.64
Green	3.77			1											-1	2.77
SNP	4.74															4.74
PC	0.59															0.59
DUP	0.60															0.60
SF	0.57															0.57
SDLP	0.33															0.33
UUP	0.37															0.37
Alliance	0.20															0.20
Other	1.05															1.05
Chg%		3		3												

Save Rules

Run Uniform Simulation

Run Proportional Simulation

Enter NATIONAL level percentages (+) to transfer from party in left column to the other parties

Entire grid may be overridden at regional level

To enter REGIONAL level overrides, select Save Rules above and then select required Region from results list

Would recommend Regional level overrides for Scotland, Wales and Northern Ireland

Simulation may take a few minutes to complete

When complete, results are available under year 2015 Sim

In the left column are the party codes and the National percentage of the vote obtained in the based-on election. The rightmost column initially contains the same percentages. Across the top row, the parties are listed in the same order as the left column.

The objective is to enter percentages of the national vote to transfer from a party in the left column to one or more of the parties in the other columns. The percentages are net percentages to transfer between the parties, so if a percentage is entered in the first row / second column slot (Con->Lab) then the second row / first column slot will be greyed out to prevent an opposite transfer. Clearing the first entry re-enables the second slot

The other greyed-out areas on the grid are to prevent entry of a transfer from a party to itself or to a party that does not contest elections in the same constituencies as the left column party.

The green column on the right shows the percentages transferred from the parties on each row. The green row on the bottom shows the percentages transferred to each party in the columns. The end percentages column shows the net effect of transfers to and from each party.

Note: As the percentage entered is a percentage of the National Vote, transfers from and to parties that do not contest all regions will be scaled up when applied i.e. the SNP only contest 59 out of the 650 constituencies, so an entry of 0.18 would scale up to approximately 2% at constituency level.

For this reason, it is easier to enter override regional grids for Scotland, Wales and Northern Ireland as the percentages entered at that level are generally the percentages used without need for adjustment as the parties contest all seats.

Select Save rules before moving from screen of filtering by region.

Regional Grid

Select a region on the main results list and select Simulator if not already displayed. Here the results displayed are for the region and the percentages entered are the percentages of the regional vote to transfer. Otherwise, works in the same way as the national grid. Save rules before leaving screen.

Scotland Override Simulator based on 2015 results

	Start %	Con	Lab	LD	UKIP	Green	SNP	PC	DUP	SF	SDLP	UUP	Allian...	Other	Chg%	End %
Con	14.92															14.92
Lab	24.30															26.30
LD	7.55															7.55
UKIP	1.62															1.62
Green	1.35															1.35
SNP	49.97		2												-2	47.97
PC	0.00															0.00
DUP	0.00															0.00
SF	0.00															0.00
SDLP	0.00															0.00
UUP	0.00															0.00
Alliance	0.00															0.00
Other	0.30															0.30
Chg%			2													

[Save Rules](#)
[Run Uniform Simulation](#)
[Run Proportional Simulation](#)

Enter REGIONAL level percentages (+) to transfer from party in left column to the other parties
Any entries will result in this entire grid replacing national grid for constituencies in region

To enter NATIONAL level details, select Save Rules above and then select UK Wide as Region from results list

Simulation may take a few minutes to complete
When complete, results are available under year 2015 Sim

Alliances

To simulate an alliance between two parties, enter a percentage to transfer from the smaller party to the larger party which is greater than the percentage that the smaller party obtained in any constituency (e.g. 99%). This will result in a transfer of all of the votes for the smaller party to the larger party.

Run Uniform Simulation

Option can be selected from either the National or a regional grid. When the calculation completes (after a few minutes) the results can be examined on the main results list and the party summary list by selecting 2010 Sim or 2015 Sim as appropriate from the pop-up year selection.

Calculation works as follows:

- Data for any previous simulation for this election is removed
- The election data is duplicated for the simulation
- The constituencies are processed in region order. If there are any entries in the regional grid, the entire grid is used as the rules to apply. Otherwise, the entire national grid rules are used for that region.
- For each party in the constituency the transfers to other parties are calculated, scaling up for national level rules applying to parties not contesting all 650 seats if required. If a transfer from party did not gain a percentage vote in the election that is greater or equal to the percentage to transfer, the transfer percentage is scaled down to the actual percentage received.
- The transfer percentage is applied uniformly across all constituencies irrespective of the vote percentage obtained by the transfer party in that constituency e.g. 2% of the valid votes in the constituency are subtracted from the transfer from party candidate and added to the transfer to party.
- At constituency level the winning and runner up candidates are identified and the majority votes and percentages are calculated.

Run Proportional Simulation

Works in the same way as the uniform simulation except when calculating the transfer percent.

The process adjusts the transfer percentage by the proportion of the actual percentage obtained by the party in the constituency over the national or regional percentage of the vote. This means that the transfer percentage used is lower in constituencies where the party underperformed as against the national or regional average and higher where the constituency outperformed the national or regional average i.e. the same proportion of the vote percentage obtained is transferred in each constituency.

Data Sources

Data was originally retrieved from the following sources and enhanced

2015 Election results

<http://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7186>

House of Commons library

2010 Election results

<http://www.electoralcommission.org.uk/our-work/our-research/electoral-data>

Electoral Commission, UK Parliament general election, published 6 May 2010.

EU Referendum

<http://www.electoralcommission.org.uk/our-work/our-research/electoral-data>

Electoral Commission, Referendum on the UK's membership of the EU, published 23 June 2016

Relationship between constituencies and local authorities

<http://ons.maps.arcgis.com/home/item.html?id=111c3f49aa224989902b750fff785d1a>

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