The New SQID

Improving Wikidata Made Easy

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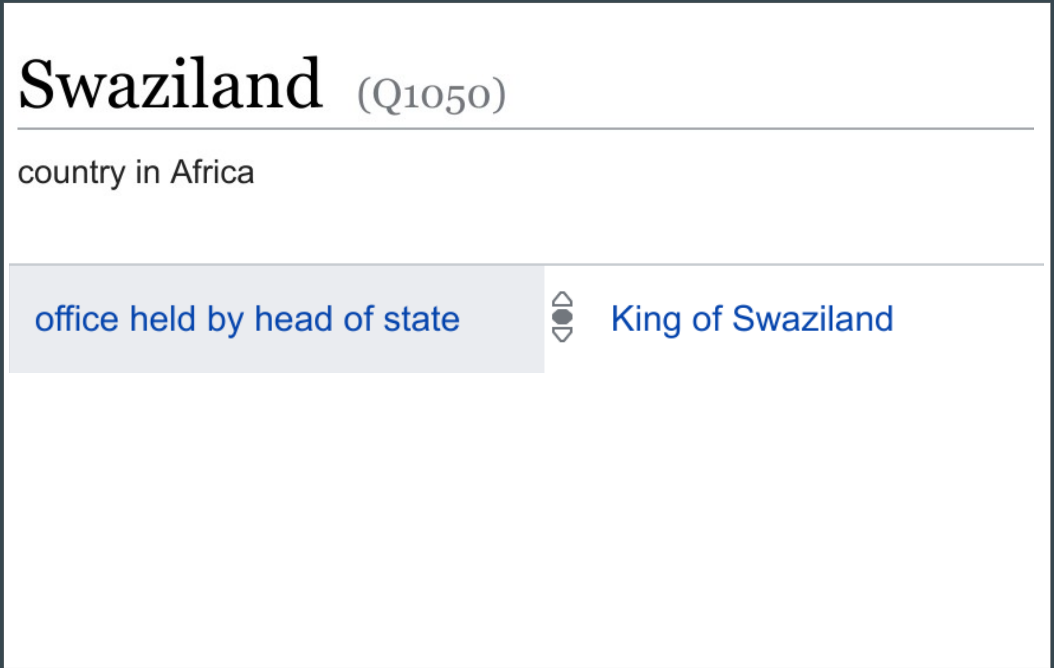
The Wikidata Quality Challenge

- Small errors can have a big impact
  … but are very hard to notice
- Only few direct readers on site
- Significant external usage
  … but without direct editing options

When “Incomplete” becomes “Wrong”

- Omissions can turn into errors and misinterpretations
- Many SPARQL queries depend on absence of information:
  - Checks for NOT EXIST [around 3% of user queries]
  - Aggregates (counting etc.) [>10% of user queries]

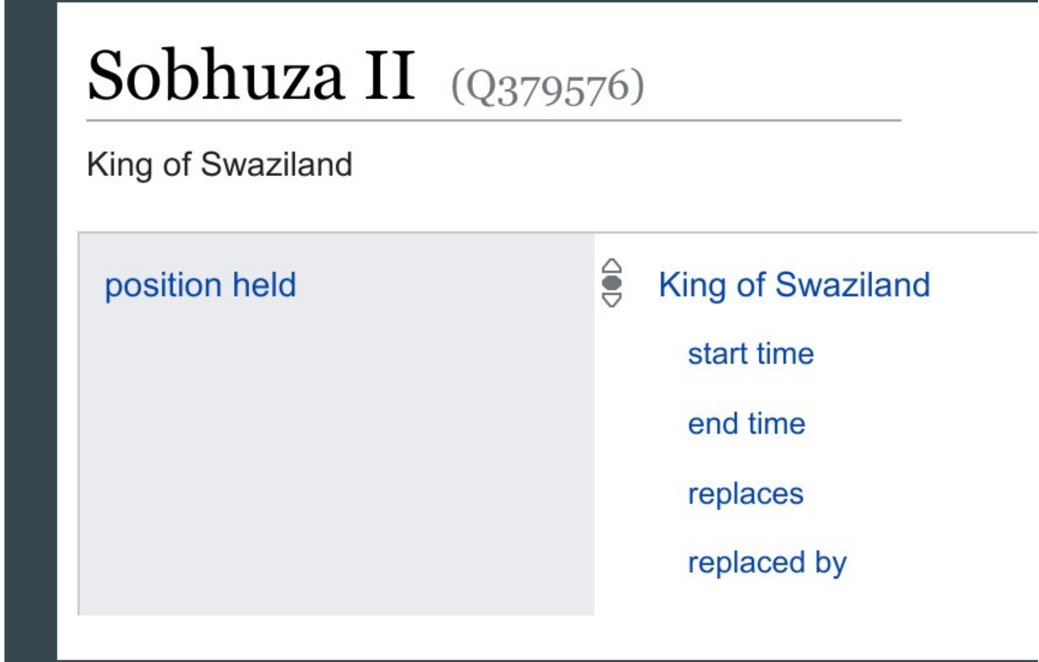
A Tale from Swaziland



Swaziland (Q1050)

country in Africa

office held by head of state — King of Swaziland



Sobhuza II (Q379576)

King of Swaziland

position held — King of Swaziland

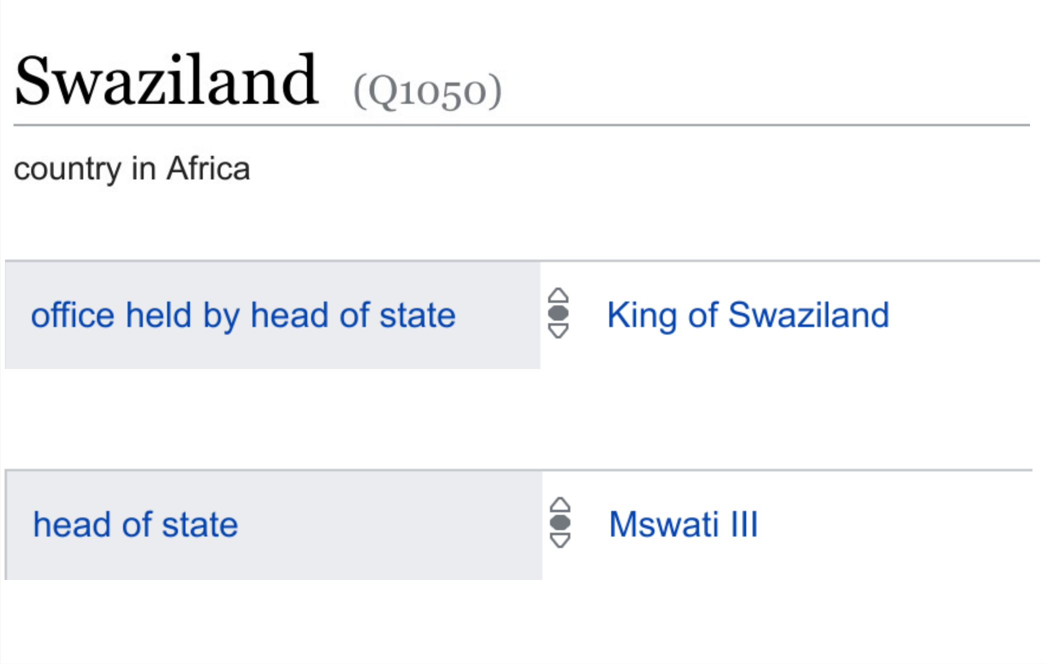
start time

end time

replaces

replaced by

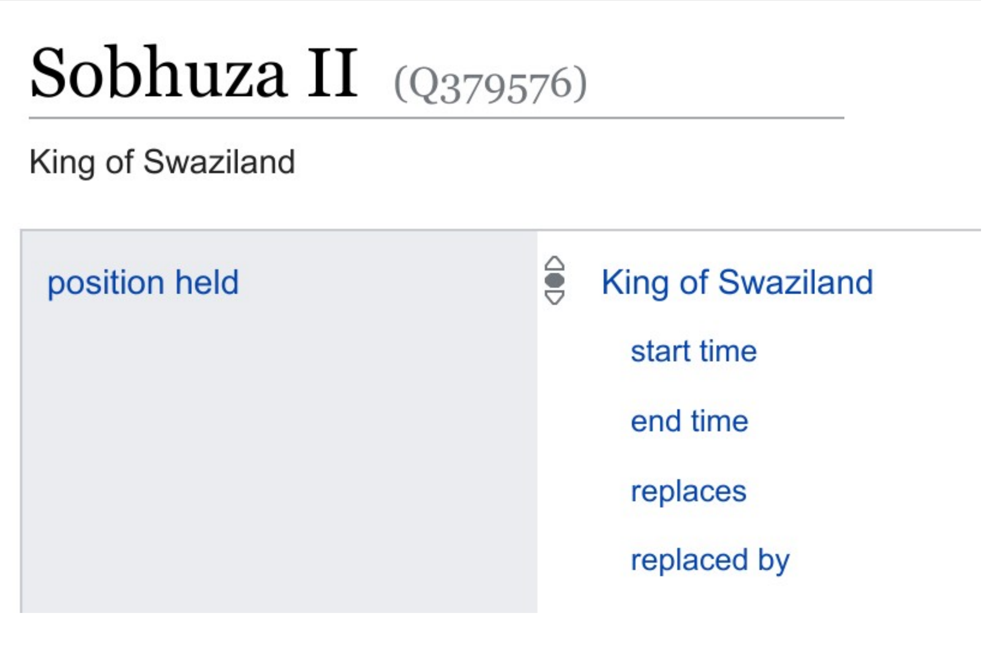
A Tale from Swaziland



Swaziland (Q1050)

country in Africa

office held by head of state	King of Swaziland
head of state	Mswati III

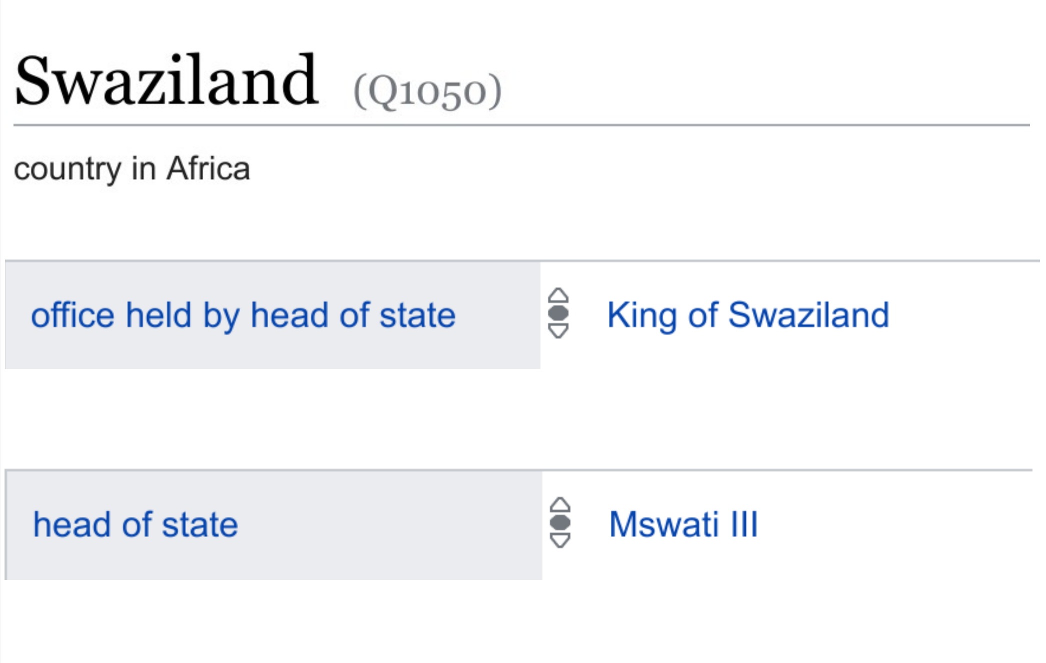


Sobhuza II (Q379576)

King of Swaziland

position held	King of Swaziland start time end time replaces replaced by

A Tale from Swaziland

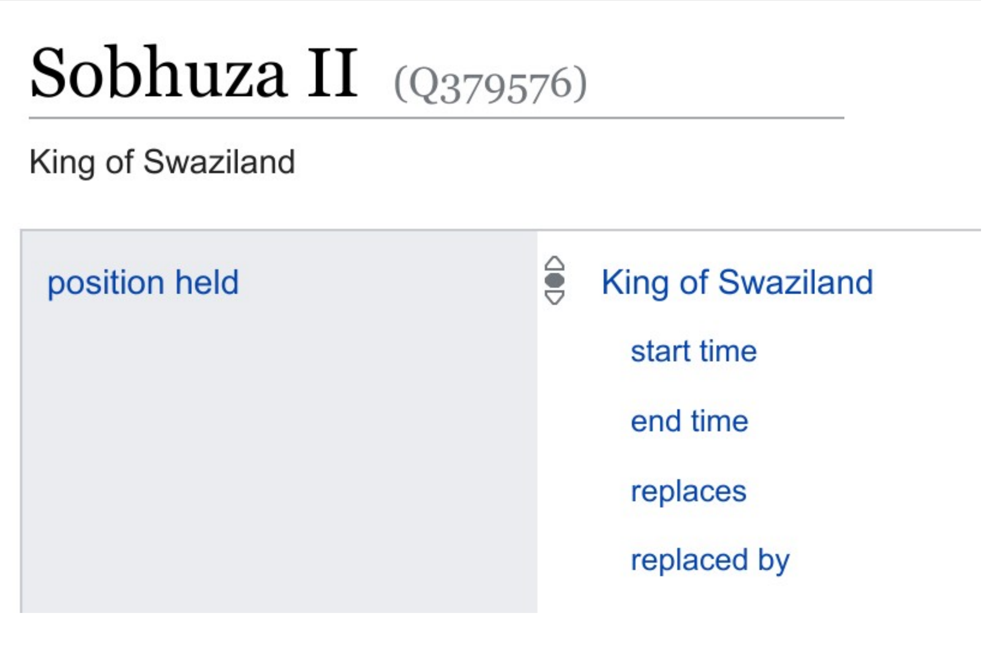


Swaziland (Q1050)

country in Africa

office held by head of state — King of Swaziland

head of state — Mswati III



Sobhuza II (Q379576)

King of Swaziland

position held — King of Swaziland

start time

end time

replaces

replaced by

"Wikidata often doesn't know
what Wikidata knows."

Bots to the Rescue!

A big advantage of Wikidata:

- Automatic error search and correction
- Ongoing validation against external sources
- Crowdsourcing keeps human in the loop

However ...

- High barriers for building such solutions
- Sparse coverage of topics

Command, don't program

Goal: Let community define what should be done

- Specify “rules” – don’t program
- “What over How”
- Example:

> “If A’s office of head of state is B,
> and C held the position B,
> then A’s head of state was C.”

- Provide ways to write and use this

Keep humans involved

Goal: Ensure that results get human review

- Generate proposals for new data
- Allow users to accept or reject
- Record exceptions or suggest ways of fixing problematic data

https://tools.wmflabs.org/sqid/

SQID Rules by Example

Spouse (P26) is symmetric:

```
    (?x.P26 = ?y)      -> (?y.P26 = ?x)
```

SQID Rules by Example

Spouse (P26) is symmetric:

```
    (?x.P26 = ?y)@?S -> (?y.P26 = ?x)@?S
```

SQID Rules by Example

Spouse (P26) is symmetric:

```
    (?x.P26 = ?y)@?S -> (?y.P26 = ?x)@?S
```

Part of (P361) is inverse of has part (P527):

```
    (?x.P527 = ?y)@?S -> (?y.P361 = ?x)@?S
    (?x.P361 = ?y)@?S -> (?y.P527 = ?x)@?S
```

SQID Rules by Example

Child (P40) is inverse of mother (P25):

```
    (?c.P25 = ?m)@?S -> (?m.P40 = ?c)@?S
    (?m.P40 = ?c)@?S -> (?c.P25 = ?m)@?S
```

SQID Rules by Example

Child (P40) is inverse of mother (P25):

```
    (?c.P25 = ?m)@?S -> (?m.P40 = ?c)@?S
    (?m.P40 = ?c)@?S -> (?c.P25 = ?m)@?S
```

Well … no, the second rule is wrong. Fix:

```
  (?m.P40 = ?c)@?S ,
  (?m.P21 = Q6581072)@?T -> (?c.P25 = ?m)@[]
```

SQID Rules by Example

Anyone holding (P39) a country's head of state position (P1906) is its head of state (P35):

```
    (?headOfState.P39 = ?headOffice)@?X,
    (?country.P1906 = ?headOffice)@?Y
              -> (?country.P35 = ?headOfState)@[]
```

SQID Rules by Example

Anyone holding (P39) a country's head of state position (P1906) is its head of state (P35),
at the same start and end time:

```
    (?person.P39 = ?headOffice)@?X,
    ?X : (P580 = ?start, P582 = ?end),
    (?country.P1906 = ?headOffice)@?Y
 -> (?country.P35 = ?person)@[P580=?start, P582=?end]
```

The Future

Planned software improvements

- Online rule editing
- Better rule management
- Optional value-copying feature for rules
- Performance/load time
- Disapprove inferences (exception handling)
- Advanced constraints

The Future

– Your input here –