

# Graph Keyword Search



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## Research Goals

A keyword-based query interface for semantic stores

Semantic store: DBPedia  
Semantic similarity: EasyESA and Swoogle

Future work: use context to disambiguate the meaning of keywords

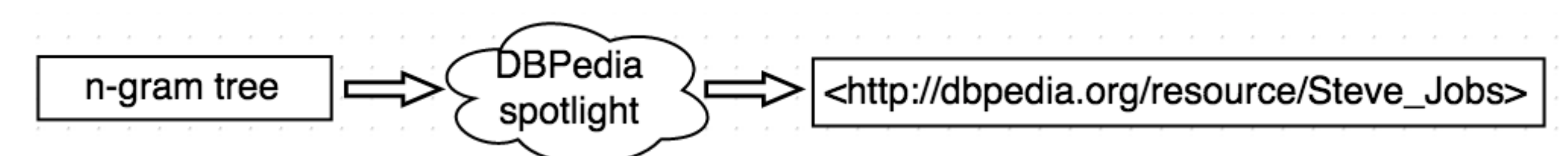
## Example

Query : Steve Jobs wife birth-name

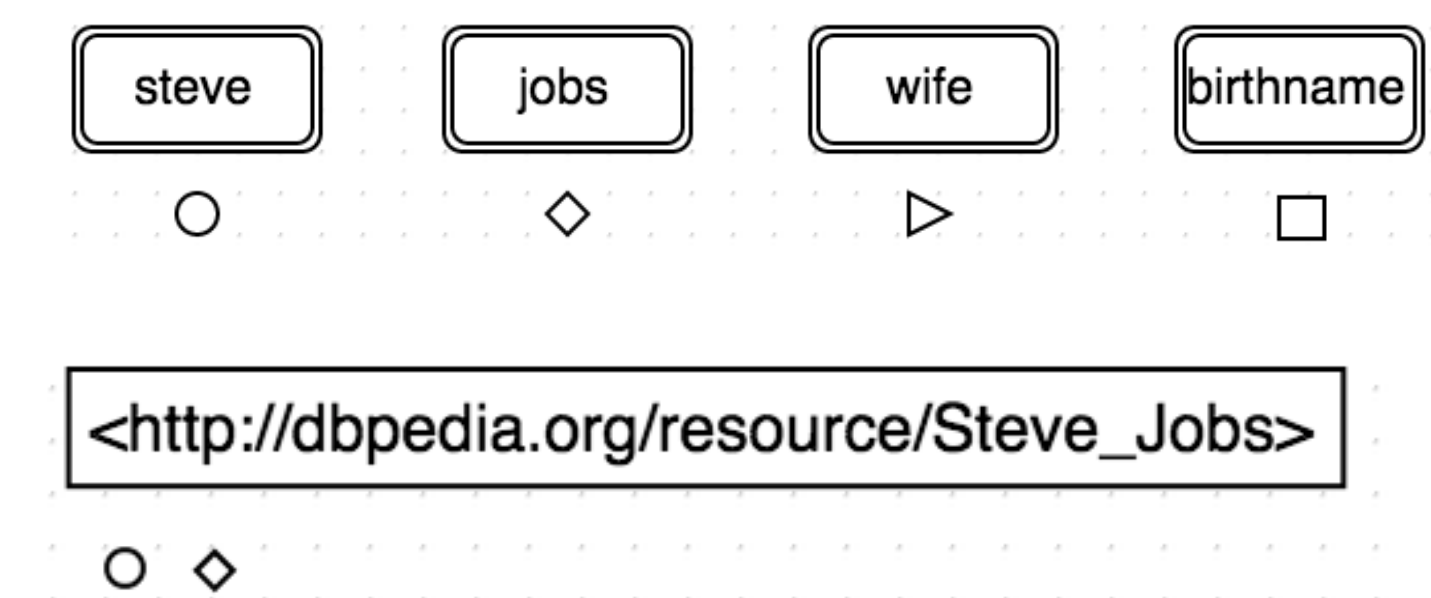
### 1. n-gram tree generation



### 2. Pivot Entity Recognition

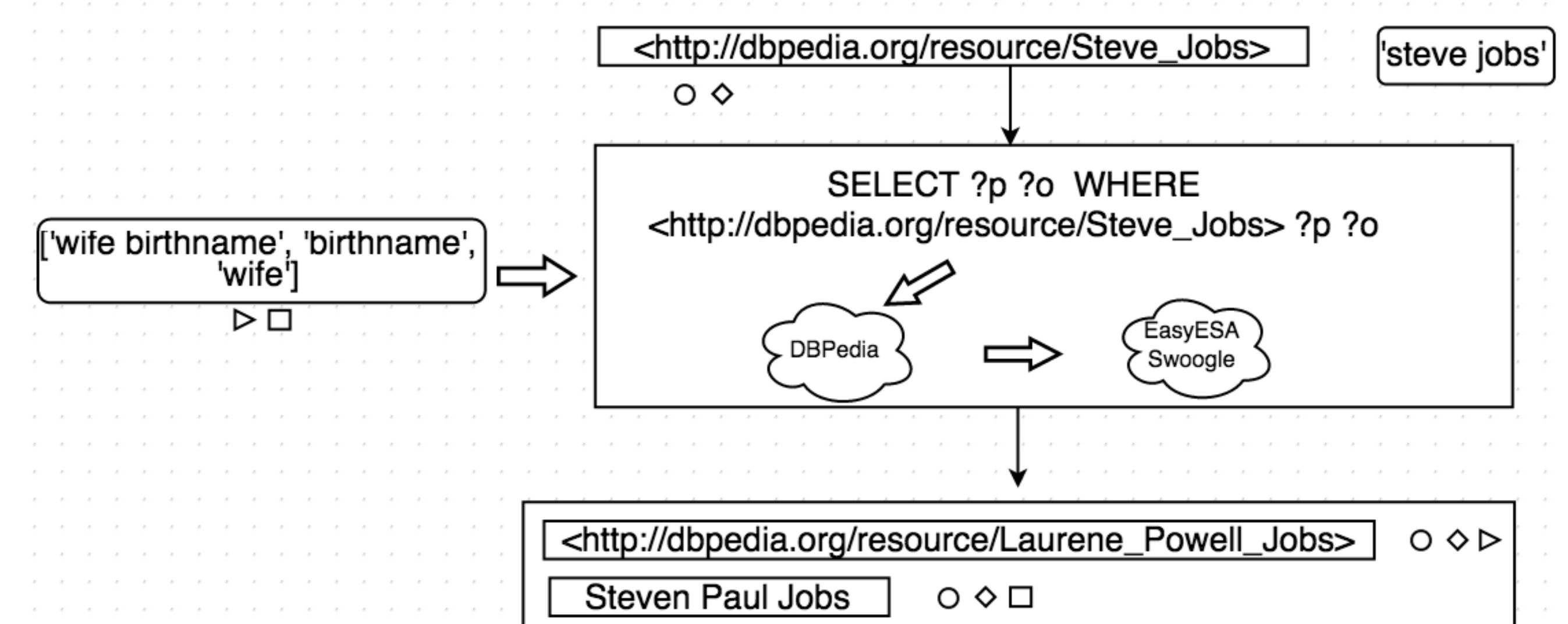


### 3. Color assignment



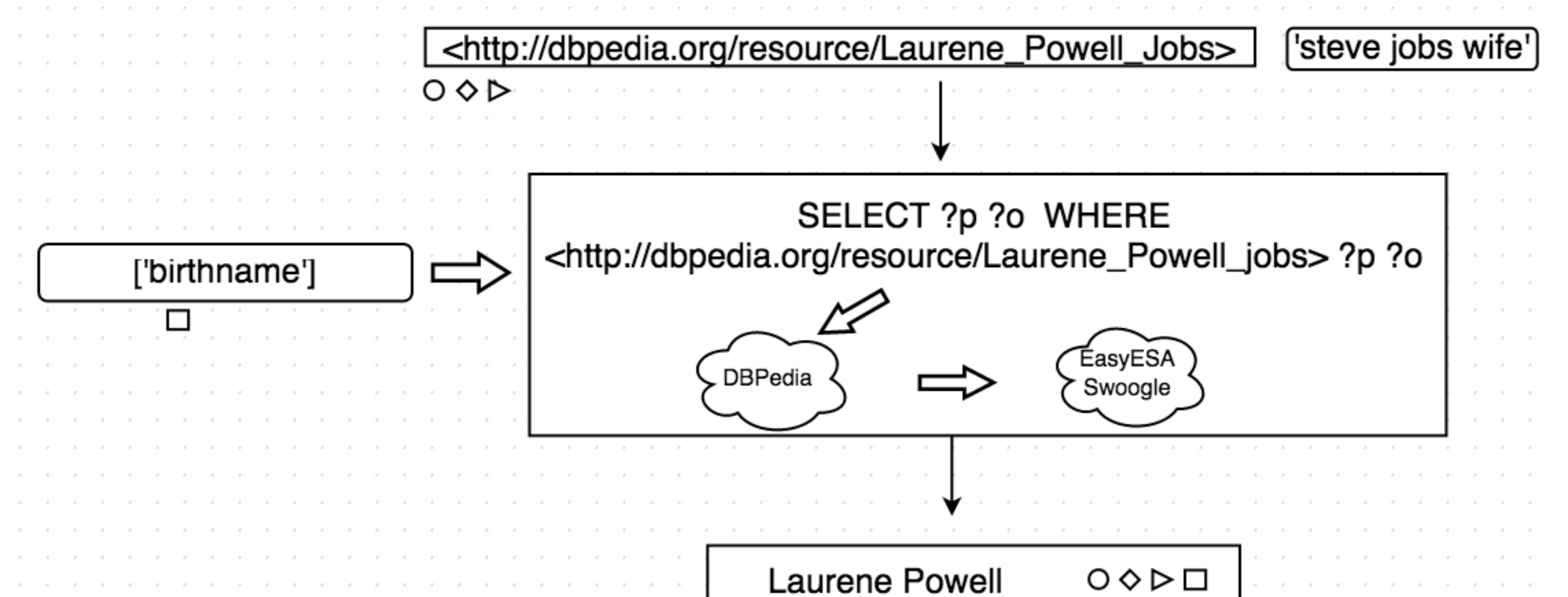
### 4. Search

Iteration 1



predicate	n-gram(keyword)	match-score
<spouse>	wife birthname	0.61
<spouse>	wife	0.81
<birth_date>	birthname	0.75
<birthname>	birthname	1
<birth_place>	birthname	0.75
<birth_year>	birthname	0.75
<birth_name>	wife birthname	0.78

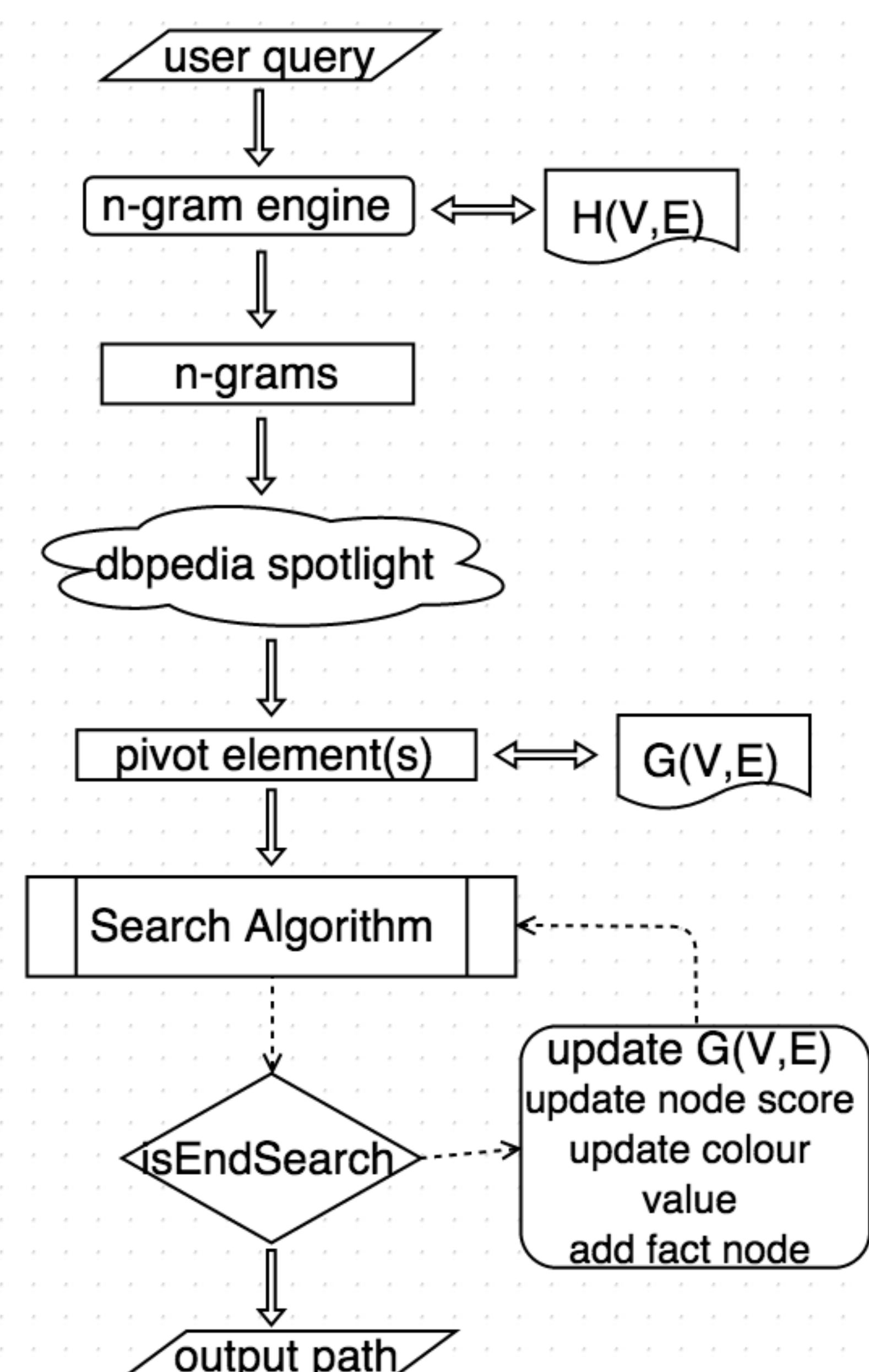
Iteration 2



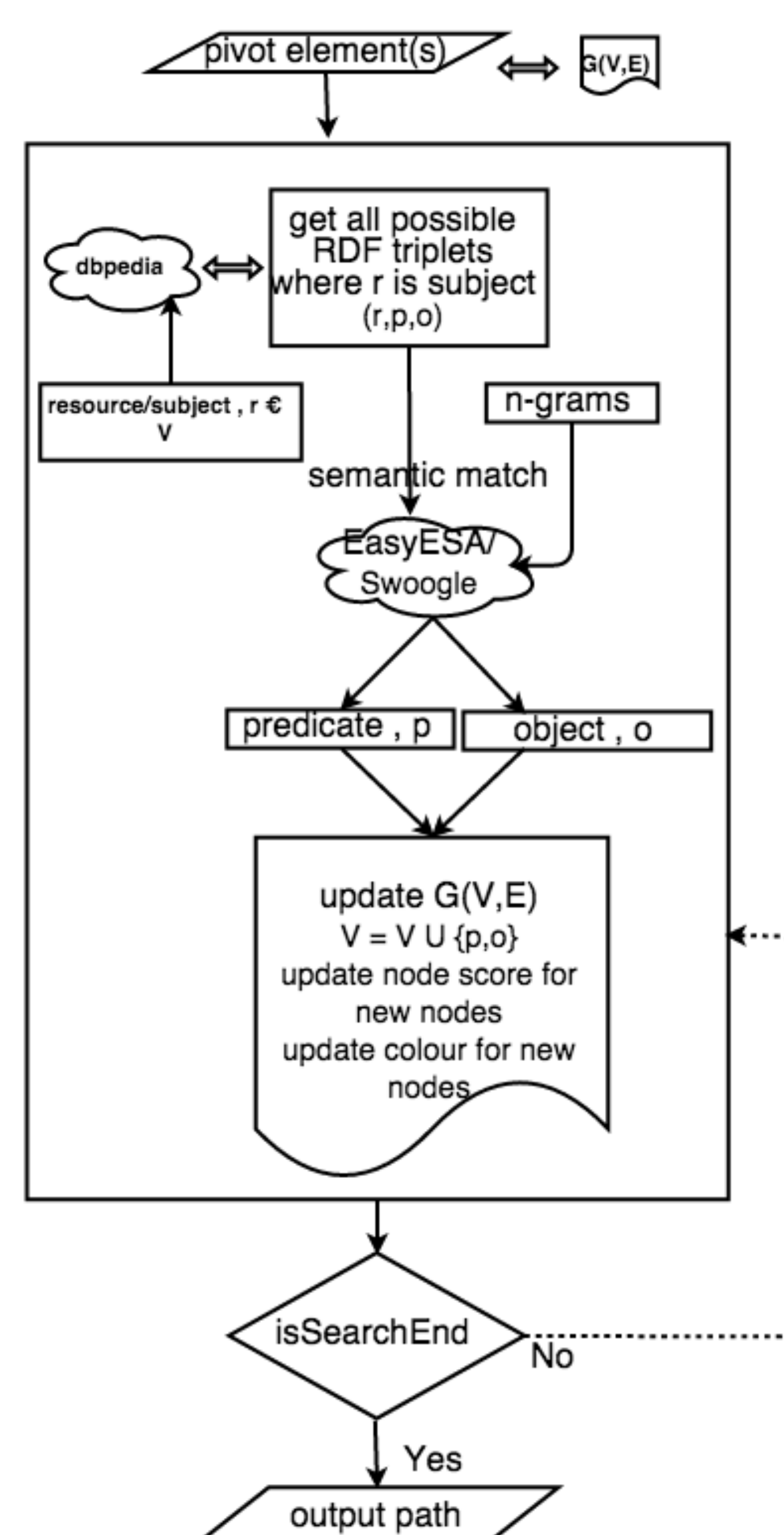
predicate	n-gram(keyword)	match-score
<birth_date>	birthname	0.75
<birthname>	birthname	1
<birth_place>	birthname	0.75
<birth_year>	birthname	0.75
<date_of_birth>	birthname	0.75

## Technical Approach

### System components



### Search algorithm



## Results

Following are the top results for a set of queries that we ran on the system

### Query 1 : Steve Jobs wife birth-name

<Laurene\_Powell\_Jobs> <birthName> Laurene Powell  
<Laurene\_Powell\_Jobs> <birthDate> 1963-11-06+02:00  
<Steve\_Jobs> <birthName> Steven Paul Jobs

### Query 2 : Lisbon ruling party

<Lisbon> <leaderParty> <Socialist\_Party\_(Portugal)>  
<Lisbon> <mayorParty> <Socialist\_Party\_(Portugal)>  
<Lisbon> <leader> Helena Roseta  
<Lisbon,\_Ohio> <leaderName> Michael B. Lewis

### Query 3 : Turkmenistan languages

<Turkmenistan> <languagesType> languages  
<Turkmenistan> <languagesType> Inter-ethnic  
<Turkmenistan> <officialLanguages> <Turkmen\_language>  
<Turkmenistan> <language> <Russian\_language>