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**Wydział Elektrotechniki, Automatyki, Informatyki i  
Elektroniki**

**Podstawy Inżynierii Wiedzy  
Semantic Web**

Sprawozdanie:  
Semantic Web Applications: Semantic Wikis

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## 1 Semantic MediaWiki - Categories

*Based on the SMW tutorial, add the page to the Student category.  
Paste the wiki page source (markup) in the report.*

```
== Fuko Fabio start page ==
```

```
My name is Norbert Pabian. I am 23 years old.  
Currently I study at AGH UST, faculty of computer science.  
I belong to group 9:30am.
```

```
[[Category:Student]]
```

*Create a new page as:*

*<http://loki.ia.agh.edu.pl/smw/index.php/AGH-UST/Subjects/subject-name>*

*and assign it to the category University subject.*

*Paste the wiki page source (markup) in the report.*

```
[[Category:University subject]]
```

```
== Podstawy Inżynierii Wiedzy (Foundations of Knowledge Engineering)  
==
```

```
Zajęcia są prowadzone w dwóch częściach:
```

- \* język sztucznej inteligencji Prolog
- \* Semantic web

## 2 Semantic MediaWiki - Properties

*Based on the Properties and Types section annotate the content of your Student page so that it contains the following semantic information about you:*

*Name (first + last name)*

*Age*

*Group (choose one)*

*include the updated wikibase source code (markup) in the report.*

```
== Fuko Fabio start page ==
```

```
My name is [[name::Norbert Pabian]]. I am [[age:: 23]] years old.  
Currently I study at AGH UST, faculty of computer science.  
I belong to group [[group:0930|9:30am]].
```

```
[[Category:Student]]
```

*Edit the created page that belong to the University subject category so that it contains the following properties:*

*lead by*

*room*

*duration*

include the updated wikipage source code (markup) in the report.

```
[[Category:University subject]]

== Podstawy Inżynierii Wiedzy (Foundations of Knowledge Engineering) ==

Zajęcia są prowadzone w dwóch częściach:
* język sztucznej inteligencji Prolog
* Semantic web

Prowadzone przez: [[lead by::GJN]]
sala: [[room::C3 201]]
Czas trwania: [[duration::90]] min
```

### 3 Semantic MediaWiki - Inline queries

*Read the manual section on Inline queries*

*Using the inline queries add to your page the list of the students that are members of your group  
Format the output of the query as unordered list.*

```
== Fuko Fabio start page ==

My name is [[name::Norbert Pabian]]. I am [[age:: 23]] years old.
Currently I study at AGH UST, faculty of computer science.
I belong to group [[group:0930|9:30am]].

The other members of my group are:

{{#ask: [[Category:Student]] [[Group::09:30]]}}
```

*Build another query listing the students from your group:*

*Display it as a table*

*Sort by age, then by the name*

*Define a default value which will be displayed if the required field (e.g. age) is empty.*

*Put the query in the report.*

```
== Fuko Fabio start page ==

My name is [[name::Norbert Pabian]]. I am [[age:: 23]] years old.
Currently I study at AGH UST, faculty of computer science.
I belong to group [[Group:09:30|9:30am]].

The other members of my group are:

{{#ask: [[Category:Student]] [[Group::09:30]]
| ?Name
| ?Age
| ?group
| sort=Age
| order=descending
}}
```

[[Category:Student]]

## 4 Loki - Use Cases

### 4.1 Movie recommendation system

Create a page of a movie in the **movie:** namespace. Assign it to the **movie** category.

Describe the movie **in english** using semantic annotations, according to an example **filmy:poszukiwacze\_zaginionej\_arki** in polish and an example **bookstore:book:the\_call\_of\_cthulhu** in english (use the movie relations and the genre attribute (and possibly more if you want)).

Describe shortly one of the actors in the **person:** namespace and assign it to the **actor** category.

Copy the wiki pages sources and paste them into the report

2) <http://loki.ia.agh.edu.pl/lokidev/movies:casablanca>

```
[[category:movie| ]]
**Title**: [[title:=Casablanca]]
**Genre**: [[genre::genres:romantic]], [[genre::genres:drama]]
**Production year**: [[production_year:=1942]]
**Production country**: [[produced_in_country::countries:USA]]
**Screenplay**: [[screenplay::persons:howard_koch|Howard Koch]]
**Director**: [[directed_by::persons:michael_curtiz|Michael Curtiz]]
**Cast**:
[[main_role::persons:humphrey_bogart|Humphrey Bogart]] -
[[main_character::characters:ingrid_bergman|Ingrid Bergman]]
[[main_role::persons:ilsa_lund|Ilsa Lund]] -
[[main_character::characters:ilsa_lund|Ilsa Lund]]
[[supporting_role::persons:clauderains|Claude Rains]] -
[[supporting_character::characters:captain_louis_renault|Captain Louis Renault]]
[[supporting_role::persons:conrad_veidt|Conrad Veidt]] -
[[supporting_character::characters:major_heinrich_strasser|Major Heinrich Strasser]]
**Action time**: [[action_time:=1941]]
**Language**: [[language:=English]]
```

3) [http://loki.ia.agh.edu.pl/lokidev/persons:humphrey\\_bogart](http://loki.ia.agh.edu.pl/lokidev/persons:humphrey_bogart)

```
[[category:actor| ]]
Humphrey DeForest Bogart (born [[birth_date:=25.12.1899]]) was an American actor. He is widely regarded as a cultural icon. The American Film Institute ranked Bogart as the greatest male star in the history of American cinema. Bogart gained his first real romantic lead in 1942's [[movies:casablanca|Casablanca]], playing [[persons:ingrid_bergman|Ingrid Bergman]], the hard-pressed expatriate nightclub owner, hiding from the past and negotiating a fine line among Nazis, the French underground, the Vichy prefect and unresolved feelings for his ex-girlfriend.
```

4) [http://loki.ia.agh.edu.pl/lokidev/persons:michael\\_curtiz](http://loki.ia.agh.edu.pl/lokidev/persons:michael_curtiz)

```
[[category:director| ]]
Michael Curtiz ([[birth_date:=24.12.1886]]) was an Academy award winning Hungarian-American film director. He had early credits as Mihály Kertész and Michael Kertész. He directed more than fifty films in Europe and more than one hundred in the United States, many of them cinema classics, including [[movies:casablanca|Casablanca]].
```

### 4.2 Geographic Wiki

1) <http://loki.ia.agh.edu.pl/lokidev/city:warsaw>

```
Warsaw is the capital and largest [[category:city]] of [[capital
of::country:Poland]]. Its population in 2010 was estimated at [[inhabited
by:=population:=1716855]]. The area of the city covers [[area:=517]] square
kilometres.
```

2) <http://loki.ia.agh.edu.pl/lokidev/country:poland>

```
Poland, officially the Republic of Poland is a [[category:country]] in Central
Europe. Capital city of Poland is [[capital::city:warsaw|Warsaw]].
```

## 5 Loki - Semantic Web Standards

Create a page for yourself in the *user* namespace, assign it to the *user* category.

Read the *Plugin API v.2.0*, section on *SPARQL*.

On your page, build an example *SPARQL* query which asks for specific kind of movies or cities (ou decide what criteria to use in the query!).

Observe the results. Put the query into the report.

The following query displays all the cities where competitions Tournament took place in climbing up to 2005 year.

```
<pl format="sparql">
PREFIX wiki: <>
SELECT ?City ?contest_year ?Country
WHERE {
?climbing category "climbing".
?climbing wiki:city ?City.
?climbing wiki:contest_year ?contest_year .
?climbing wiki:contest_in_country ?Country.
FILTER (?contest_year < "2005" && ?Country = "countries:Germany")
}
ORDER BY DESC(?contest_year )
</pl>
```

## 6 Loki - Reasoning

On your *user* page create a section *My Recommendations*

Create a *Prolog* goal so that the movies interesting for you are found. Optionally, you can define the interesting movies/cities with a *Prolog* rule and use it directly in the goal.

If you encounter problems, use the debug functionality of *Loki*.

Put the goal in the report.

```
Films directed by [[persons:michael_curtiz |Michael Curtiz]] or
[[persons:roman_polanski|Roman polanski]]: \\
<pl goal="wiki_category(X,'movie'), wiki_attribute(X,'title',Title),
wiki_relation(X,'directed_by','persons:michael_curtiz'), write(Title), nl, fail;
wiki_category(X,'movie'), wiki_attribute(X,'title',Title),
wiki_relation(X,'directed_by','persons:roman_polanski'), write(Title), nl, fail."
scope="movies" >
</pl>
```