Intellexer™
Question–Answering System

Simplifying a search procedure
Asking questions in natural language
Receiving extremely precise answers
Saving time and excelling in the area of expertise

Incorporated modules:
Preformator, Linguistic Processor, Question–Answering module
Selecting an appropriate solution

Ever-growing accumulation of diverse online information often makes it hard to find a necessary piece of information. A lot of useful information is now available in the form of e-books, manuals, presentations, reports, FAQs, etc. The potential and value of such information is truly recognized if search results return answers that meet our information need to a high accuracy. It is evident that browsing a found document, which might be abundant in multiple facts, is time-consuming enough for hitting a precise answer. The problem is not in the volume of information, rather in a lack of a powerful information retrieval system that supports intelligent question–answering techniques.

Intellexer Question–Answering System enables you to significantly increase the search efficiency. The essence of this solution is in handling users’ queries and giving pertinent answers in natural language rather than full documents or best-matching passages.

Who can benefit from Intellexer Question–Answering System?

Intellexer Question–Answering System is of paramount advantage for:

- Casual questioneers who ask simple factual questions
- Employees who seek quick answers in available resources in the organization’s database
- Consumers who look for specific product features or prices
- Researchers who collect information about the subject area they are interested in
- Students, teachers, and instructors
How does it work?

Intellexer Question–Answering System accepts user’s natural language question in English, detects matches between the query and information contained in the resources, and delivers the most relevant answer.

To complete the above-mentioned tasks, the Intellexer Question–Answering module includes the following high-performance sub-modules:

**Question classifier** that determines the type of the question for the system to better identify the exact answer.

**Document retrieval module** that detects the documents/paragraphs that are likely to contain answers.

**Filter** that preselects sentences as answer candidates.

**Answer extraction module** that looks for further clues in the text to determine whether the chosen sentence is the right answer.

The right answer is determined by taking into consideration:

- Matched terms and pairs in the question and the answer
- Weights of matched terms and pairs in the question
High precision of answers is ensured by sophisticated syntactic, semantic and contextual algorithms to process a wide range of questions.

Below is a simple example of how Intellexer Question-Answering System works on the semantic level.

**Illustration 1**: semantic tree of the question: Who invented the telescope?


![Semantic Tree of the Question](image1)

**Illustration 2**: Semantic tree of an answer: The first refracting telescope was invented by Hans Lippershey in 1608.


![Semantic Tree of the Answer](image2)
Promising prospects

Taking into consideration the spectrum of the customers’ wishes as to what they would eagerly expect from Intelleixer Question–Answering System in the future, we are now working on the following system enhancements:

- Event and relation extraction
- Coreference resolution
- Word sense disambiguation
- Logical inference
- Advanced reasoning

Intelleixer Question–Answering System can be easily tailored to specific subject areas by building a searchable database from a set of documents provided by the user.