## WS4A: a Biomedical Question and Answering System based on public web services and ontologies

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## Abstract

In this work we describe our participation in the fourth edition of the BioASQ challenge (2016). We developed a system called WS4A (Web Services for All) that produced our submitted results for the Question and Answering (QA) task 4b, which consisted on the retrieval of relevant concepts, documents, snippets, RDF triples, exact answers and "ideal answers" for each given question. The novelty in our approach consists on the maximum exploration of existing web services for performing each task, such as the annotation of text, and the retrieval of metadata for each annotation. The retrieved metadata included concept identifiers, ontologies, ancestors, and most importantly, PubMed identifiers. The paper describes the WS4A pipeline and also presents its performance in terms of precision, recall and f-measure.