Semantic Web – the web Evolution
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Web 1.0
The web that Tim Berners-Lee gave us in the early 90s represents Web 1.0. Information on web pages is formed and represented as hypertext (using HTML). Web 1.0 allows for very little user interaction and content creation. It is a “read only web”. You can search, read and enter your credit card number to buy something online. It makes the world smaller and removes the geographical constraint.

Web 2.0
Web 2.0 separates the form and content. It is an “author oriented web” where the users are more active web citizens. Blogging and wikis are examples of Web 2.0 achievements.

Web 3.0, Semantic Web
The Internet we are using every day has over 1 billion users and 3 billion static documents, however, its utilization is rather primitive. Tim Berners-Lee, the inventor of the World Wide Web (WWW), envisions a new future for the web. This future is called Semantic Web. The new web represents the attempt to “bring the web to its full potential” by developing interrepretable technologies such as specifications and protocols governing knowledge representation and services on the web.

Ontology
Ontologies are widely discussed in Artificial Intelligence and have a long history in philosophy. Ontology is a formal description of categories (sometimes called concepts), their properties (also known as slots) representing various features and attributes, and restrictions imposed on the slots. The combination of ontology and a set of instances of categories constitutes a knowledge base.

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Travel Web Service
Semantic Web is a human centric web. For example you will be able to search and find restaurants, movies, and books. Semantic Web also provides a new level of services. Semantic Web (Web 3.0) is a human centric web. For example you will be able to find all restaurants that serve pizza in a 10 kilometer distance which are open until 12pm, even if a restaurant uses Italian food instead of pizza, it will appear in your list!

Semantic Web embraces multiple technologies to perform its tasks such as manipulation and extraction of information, and execution of complex services. The concept Resource Description Framework (RDF) is a fundamental method of representing basic pieces of information in semantic web. Ontology – “specification of conceptualization” – is built upon RDF and is used to represent information and its semantic in a machine-processable manner. A special XML based language called Ontology Web Language (OWL) is used to represent knowledge and services as Ontology.

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The expected outcome would be intelligent user agents, which can perform complex services in the travel domain based on user preferences. The results will be applicable in other domains.

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