AIML
XML Language

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About the Tutorial

AIML stands for Artificial Intelligence Modelling Language. AIML is an XML based markup language meant to create artificial intelligent applications. AIML makes it possible to create human interfaces while keeping the implementation simple to program, easy to understand and highly maintainable.

This tutorial will teach you the basics of AIML. All the basic components of AIML with suitable examples have been discussed in this tutorial.

Audience

This tutorial is designed for software professionals who are willing to learn AIML in simple and easy steps. This tutorial will give you a great understanding on the AIML concepts and after completing this tutorial, you will be at an intermediate level of expertise from where you can take yourself to higher levels of expertise.

Prerequisites

Before proceeding with this tutorial, you should have a basic understanding of Java programming language, because we are going to develop AIML applications using **Program AB**, a Java-based reference implementation of AIML.

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1. AIML – Introduction

AIML stands for **Artificial Intelligence Markup Language**. AIML was developed by the Alicebot free software community and Dr. Richard S. Wallace during 1995-2000. AIML is used to create or customize Alicebot which is a chat-box application based on A.L.I.C.E. (Artificial Linguistic Internet Computer Entity) free software.

AIML Tags

Following are the important tags which are commonly used in AIML documents.

Sr. No.	AIML Tag / Description
1	**\<aiml>** Defines the beginning and end of a AIML document.
2	**\<category>** Defines the **unit of knowledge** in Alicebot's knowledge base.
3	**\<pattern>** Defines the pattern to match what a user may input to an Alicebot.
4	**\<template>** Defines the response of an Alicebot to user's input.

We'll discuss each of these tags in AIML Basic tags chapter.

Following are some of the other widely used AIML tags. We'll be discussing each tag in detail in the following chapters.

Sr. No.	AIML Tag / Description
1	**\<star>** Used to match wild card * character(s) in the \<pattern> Tag.
2	**\<srai>** Multipurpose tag, used to call/match the other categories.

3	**\<random\>** Used **\<random\>**to get random responses.
4	**\<li\>** Used to represent multiple responses.
5	**\<set\>** Used to set value in an AIML variable.
6	**\<get\>** Used to get value stored in an AIML variable.
7	**\<that\>** Used in AIML to respond based on the context.
8	**\<topic**\> Used in AIML to store a context so that later conversation can be done based on that context.
9	**\<think\>** Used in AIML to store a variable without notifying the user.
10	**\<condition\>** Similar to switch statements in programming language. It helps ALICE to respond to matching input.

AIML Vocabulary

AIML vocabulary uses words, space and two special characters ***** and **_** as wild cards. AIML interpreter gives preference to pattern having **_** than pattern having *****. AIML tags are XML compliant and patterns are case-insensitive.

Example

```
<aiml version="1.0.1" encoding="UTF-8"?>
   <category>
      <pattern> HELLO ALICE </pattern>
      <template>
         Hello User!
```

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```
      </template>
   </category>
</aiml>
```

Following are the important points to be considered:

- <aiml> tag signifies start of the AIML document.

-
- <category> tag defines the knowledge unit.

-
- <pattern> tag defines the pattern user is going to type.

-
- <template> tag defines the response to the user if user types Hello Alice.

Result

```
User: Hello Alice
Bot: Hello User
```

2. AIML – Environment Setup

This tutorial will guide you on how to prepare a development environment to start your work with AIML to create auto chat software. Program AB is a reference implementation of AIML 2.0 — developed and being maintained by ALICE A.I. Foundation. This tutorial will also teach you how to set up JDK, before you setup Program AB library:

Step 1 – Set up Java Development Kit (JDK)

You can download the latest version of SDK from Oracle's Java site: Java SE Downloads. You will find instructions for installing JDK in downloaded files, follow the given instructions to install and configure the setup. Finally set PATH and JAVA_HOME environment variables to refer to the directory that contains java and javac, typically java_install_dir/bin and java_install_dir respectively.

If you are running Windows and installed the JDK in C:\jdk1.7.0_75, you would have to put the following line in your C:\autoexec.bat file.

```
set PATH=C:\jdk1.7.0_75\bin;%PATH%
set JAVA_HOME=C:\jdk1.7.0_75
```

Alternatively, on Windows NT/2000/XP, you could also right-click on My Computer, select Properties, then Advanced, then Environment Variables. Then, you would update the PATH value and press the OK button.

On Unix (Solaris, Linux, etc.), if the SDK is installed in /usr/local/jdk1.7.0_75 and you use the C shell, you would put the following into your .cshrc file.

```
setenv PATH /usr/local/jdk1.7.0_75/bin:$PATH
setenv JAVA_HOME /usr/local/jdk1.7.0_75
```

Alternatively, if you use an Integrated Development Environment (IDE) like Borland JBuilder, Eclipse, IntelliJ IDEA, or Sun ONE Studio, compile and run a simple program to confirm that the IDE knows where you installed Java, otherwise do proper setup as given document of the IDE.

Step 2 – Set up Program AB

Now if everything is fine, then you can proceed to set up your Program AB. Following are the simple steps to download and install the library on your machine.

- Make a choice whether you want to install AIML on Windows, or Unix and then proceed to the next step to download .zip file.

- Download the latest version of Program AB binaries from https://code.google.com/p/program-ab/ using its program-ab-0.0.4.3.zip link.

- At the time of writing this tutorial, I downloaded **program-ab-0.0.4.3.zip** on my Windows machine and when you unzip the downloaded file it will give you directory structure inside C:\ab as follows.

Sr. No.	Directory	Description
1	c:/ab/bots	Stores AIML bots
2	c:/ab/lib	Stores Java libraries
3	c:/ab/out	Java class file directory
4	c:/ab/run.bat	batch file for running Program AB

Once you are done with this last step, you are ready to proceed with your first AIML Example which you will see in the next chapter.

End of ebook preview

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