Task documentation XTD:	XML2DDL in Python3 for IPP 2011/2012
Name and surname:	Fridolín Pokorný
Login:	xpokor32

1 Introduction

This document is a technical brief of `XML2DDL` conversion tool written in Python3. User gives a document in XML format which is translated into DDL representation.

2 Implementation

Arguments passed from command line are parsed in `check_opt()` function. Duplicity and disjoint parameters are checked. If input or output parameter was specified, given files are opened in `main()` function, otherwise `stdin` and `stdout` is used.

Function `xtd()` called from `main()` parses XML domain using standard `xml.etree.ElementTree` module. Tables from root element are not generated, thus `xtd_database()` function is called on every subelement of the root element.

Object oriented implementation was choosen to represent database. There are implemented two main classes:

- `Database` represents whole database
- `Table` class which represents table record in database

Parsing the document is done in `xtd_database()` function. This function gets attributes and subelements of given element and passes these information to database. Depending on arguments given to the application, database generates tables and columns.

Relations are stored in plain mode – e.g. no columns are generated till `flush()` method is called. This enables to count number of relations between tables and, depending on `--etc` parameter, create table structure before generated XML or DDL document is printed.

To determinate data type of a column to store data described in input XML document, `get_data_type()` function was implemented. Depending on data it gives data type to generate column.

There are two methods used in `Database` class to print output:

- `print_ddl()` method prints DDL document.
- `print_xmlrel()` method prints relations in XML format.

Depending on arguments passed to the application, one of these methods is called. Note that `flush()` method has to be called before print because of generation relations between tables.

Function `print_help()` simple prints help and, if an error was detected, error message is printed on `stderr`. Errors are held using exceptions.

3 Source code metrics

Number of source files:	1
Number of functions implemented:	7
Number of classes implemented:	2
Line count (comments included):	795