INDENTATION

Computing

Written by : EL BAROUDI Marouane

For Python, Guido van Rossum based the grouping of statements on indentation. The reasons for this are explainedin the first section of the "Design and History Python FAQ". Colons, :, are used to declare an indented code block,such as the following example:class ExampleClass:#Every function belonging to a class must be indented equallydef__init__(self): name ="example"def someFunction(self, a):#Notice everything belonging to a function must be indentedif a >5:returnTrueelse:returnFalse#If a function is not indented to the same level it will not be considers as part of the parent classdef separateFunction(b):for i in b:#Loops are also indented and nested conditions start a new indentationif i ==1:returnTruereturnFalseseparateFunction([2,3,5,6,1])Spaces or Tabs?The recommended indentation is 4 spaces but tabs or spaces can be used so long as they are consistent. Do notmix tabs and spaces in Python as this will cause an error in Python 3 and can causes errors in Python 2.Section 3.2: How Indentation is ParsedWhitespace is handled by the lexical analyzer before being parsed.The lexical analyzer uses a stack to store indentation levels. At the beginning, the stack contains just the value 0,which is the leftmost position. Whenever a nested block begins, the new indentation level is pushed on the stack,and an "INDENT" token is inserted into the token stream which is passed to the parser. There can never be morethan one "INDENT" token in a row (IndentationError).When a line is encountered with a smaller indentation level, values are popped from the stack until a value is on topwhich is equal to the new indentation level (if none is found, a syntax error occurs). For each value popped, a"DEDENT" token is generated. Obviously, there can be multiple "DEDENT" tokens in a row.The lexical analyzer skips empty lines (those containing only whitespace and possibly comments), and will nevergenerate either "INDENT" or "DEDENT" tokens for them.At the end of the source code, "DEDENT" tokens are generated for each indentation level left on the stack, until justthe 0 is left.