Mobile Application Languages and Framework— XML, Java, JME, Python and DotNet

Lesson 05

Python

Python

- Python has features of languages, such as Java, C, and C++, as well as features of a scripting language, such as Perl

- Python is an open source, well tested, and a widely used programming language with strong Python community support and very good documentation

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Python

- Useful like Java and Perl for mobiles and tablets. It is used in the Zope content management system framework (Zope CMF or portal toolkit (PTK) is a series of free tools for providing many of the key services required in a content management system), Google App Engine, Internet services

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Python Features

(1) Portable across platforms. Portable ANSI C, and therefore, compiles and runs on most platforms, namely, Windows, Macintosh, Linux, UNIX, OS/2, and many others

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Python Features

(2) Used in interactive mode as well as script mode

- *An interpreted language,* a scripting language. Scripts are written, saved in a file with extension .py, and used. Written scripts execute without compiling and linking. An interpreter interprets the script from the source code or byte code.

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Python Features

(3) Built-in functions

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Python Features

(4) <u>Object-oriented programming language</u> Python Class model supports building functionally identical objects as instances of a class data members (class variables and instance variables)

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Object Oriented Class Model

- Methods in the class, built-in class attributes, polymorphism, multiple inheritance overriding methods, function overloading and operator overloading, constructor, destructor, encapsulation, and template

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Python Features

(5) Dynamic typing Python needs no complicated type and size declarations and automatically tracks the kinds of objects used in the program when it runs.

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Python Features

(6) Built-in object types Data structures and object types

Files, strings, Unicode string, documentation string, lists, nested lists, lists as stacks, lists as queues, tupples, sequences, sets, dictionaries, and strings, as an intrinsic part of the language

Python Features

(7) Modules, packages, object-oriented programming, and classes for organizing software components.

(8) Multithreading, iterators, generators, exceptions, user-defined exceptions, event handling, clean-up actions, and pre-defined clean-up actions (exception handling uses try-finally blocks).

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Python Features

(9) Object persistence, regular expression matching (for strings), socket, and networking, and uses library utilities and modules, for example, unit test module, doc test module, debugging tool pdb within Python shell

Python Features

(10) Strong Python Community

Supports third-party utilities from Python developer's community (https://www.python.org/community/) contribution for pre-coded tools.

Python

- Now has become most widely used language due to strong libraries, data numerical methods, plots, statistical functions

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Sample Code 15.4

- SMS-based polling used in a number of television programmes to find the most popular dancer, personality, song, and feedback from users of mobiles and tablets.

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Sample Code 15.4

- Assume that a SMS-based polling for best mobile computing book is arranged. There are four competing books to be selected by students and faculty for mobile computing.

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Sample Code 15.4

- A corresponds to Mobile Computing by Raj Kamal from Oxford University Press and B, C, and D are from other authors and publishers.

- A student or faculty sends a message to a best mobile computing book polling app hosted at one mobile.

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Summary

- Python is an open source, well tested, and a widely used programming language with strong Python community support and very good documentation

Python Learning Resources

- Listed at https://www.linkedin.com/learning/topics/python

End of Lesson 05

Python