

SILABUS

Programming Essentials in Python



SILABUS PROGRAMMING ESSENTIALS IN PYTHON

DIGITAL TALENT SCHOLARSHIP 2019

INFORMASI UMUM	
Tema Pelatihan	Programming Essentials in Python
Mitra Penyelenggara	Cisco
Target Peserta	1500 Peserta
Pelaksanaan	1 (satu) sampai 3 (tiga) bulan di antara Bulan Agustus sampai November 2019
Tools	Webex, NetAcad.com
Jenis Sertifikasi	<ul style="list-style-type: none"> • Certificate of Completion (<i>passing grade 70%</i>) • Congratulation Letter from CEO Cisco (<i>passing grade 75%</i>) <p>CCNA certification (<i>passing grade 75%</i>)</p>
Persyaratan Peserta	<p>Persyaratan Umum</p> <ul style="list-style-type: none"> • Warga Negara Indonesia • Lolos seleksi administrasi dan tes substansi <p>Persyaratan Khusus</p> <p>Packet Tracer <i>know how</i></p>
Persyaratan Sarana yang Harus Dimiliki Peserta	<ol style="list-style-type: none"> 1. OS: Windows 7, 8, atau 10, MAC OSX 2. Processor: prosesor 64-bit with virtualization support 3. Memory: 8 GB RAM (standard) atau 4 GB (alternatif) 4. Display Adapter: PCI, PCIe (direkomendasikan), atau AGP video card (DirectX 9 graphic device with WDDM driver) 5. Disk minimal: 45 GB hard drive. 6. Oracle VirtualBox versi terbaru. http://www.oracle.com/technetwork/server-storage/virtualbox/downloads/index.html

INFORMASI UMUM

	7. Windows Experience Index (WEI): 6.5 8. Cisco Packet Tracer: versi 7.0 atau yang lebih baru
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DESKRIPSI PELATIHAN

Programming Essentials in Python

Pelatihan Programming Essentials in Python dimulai dengan keterampilan dasar pengkodean dengan panduan langkah demi langkah untuk memecahkan masalah mudah hingga masalah yang kompleks. Programming Essentials in Python akan membahas mengenai dasar pemrograman Python, konsep dan teknik pemrograman dengan pendekatan *object oriented*.

TUJUAN PELATIHAN

Setelah mengikuti pelatihan ini, peserta diharapkan mampu untuk:

Programming Essentials in Python

Tujuan kursus adalah untuk membiasakan para peserta dengan konsep-konsep dasar pemrograman secara umum seperti *conditional execution, loops, syntax, python, semantic* dan *runtime environment*.

RENCANA PEMBELAJARAN

Sesi	Topik	Aktivitas Online
Sesi 1	Basic I <ul style="list-style-type: none">Melakukan <i>print function</i><i>Literals (integers, floats, strings, boolean values)</i>	<i>Online</i> , menggunakan Cisco Webex

RENCANA PEMBELAJARAN

	<ul style="list-style-type: none"> • <i>Operators, expressions, arithmetic operators, operators and their priorities, operators and their bindings</i> • <i>Variables, naming and assigning variables, shortcut operators</i> • <i>Comments</i> • <i>Output vs. Input, mengolah data dengan menggunakan fungsi input</i> <p><i>Merubah strings menjadi angka, simple interactive programs, string operators, converting numbers into strings</i></p>	
Sesi 2	<p>Basic II</p> <ul style="list-style-type: none"> • <i>Proses meminta pertanyaan dan menerima jawaban, relational operators</i> • <i>Conditions and conditional execution, the if statements, the if-else statements, the elif clause</i> • <i>Loops (while, for, break, continue)</i> • <i>Computer logic dan operators, logical values vs. single bits</i> • <i>Bitwise operators, dealing with single bits</i> • <i>Membuat dan menggunakan daftar, merubah elemen-elemen pada daftar, metode da (methods vs. functions)</i> • <i>Sorting lists (the bubble sort</i> 	

RENCANA PEMBELAJARAN

	<p><i>algorithm)</i></p> <ul style="list-style-type: none"> • <i>Storing lists, slices, the in and not in operators</i> <p><i>Lists in advanced applications (lists within lists, list comprehension, matrices, 3rd dimension)</i></p>	
Sesi 3	<p>Basic III</p> <ul style="list-style-type: none"> • <i>Menjalankan fungsi <i>design and write</i></i> • <i>Parametrized functions, defining and using function parameters, shadowing, positional arguments, keyword arguments, mixed arguments, sorting parameter default values</i> • <i>Returning a result from a function (the return statement, returning a value, the None value, returning the non-None value, argument vs. parameter compatibility, a list as a function's result)</i> • <i>Functions and scopes, global variables, interaction of parameters with their arguments</i> • <i>Recursion</i> <p><i>Tuples and dictionaries (sequence types and mutability, creating and using tuples, creating and using dictionaries)</i></p>	Webex dan ujian <i>online</i>
Sesi 4	<p>Intermediate I</p> <ul style="list-style-type: none"> • <i>Using and importing modules</i> 	Webex dan ujian <i>online</i>

RENCANA PEMBELAJARAN





	<ul style="list-style-type: none"> • <i>Working with standard modules</i> • <i>Functions from the math module, functions from the random module, functions from the platform module</i> • <i>Modules and packages</i> • <i>Errors, failures, exceptions</i> • <i>Characters and strings vs. computers, the nature of strings in Python, string methods, strings in action (comparing strings, sorting strings, strings vs. numbers)</i> <p><i>Simple programs</i></p>	
Sesi 5	<p>Intermediate II</p> <ul style="list-style-type: none"> • <i>Konsep dasar pemrograman berorientasi objek</i> • <i>A stack</i> • <i>Properties (instance variables, class variables, checking an attribute's existence)</i> • <i>Methods (the inner life of classes and objects, reflection and introspection, classes and methods in detail)</i> • <i>Inheritance (finding properties and methods, building a hierarchy of classes, inheritance vs. composition, single inheritance vs. multiple inheritance)</i> • <i>Exceptions – advanced topics, creating and using exceptions</i> 	Webex dan ujian online

RENCANA PEMBELAJARAN

- *Generators and closures (the yield statement, building generators, list comprehensions – advanced topics, the lambda function)*
- *Processing files (accessing files from Python code, file names, file streams, file handles, opening the streams, selecting text and binary modes, pre-opened streams, closing streams, diagnosing stream problems)*

Working with real files (dealing with text files, working with binary files, stream – reading and writing bytes, copying files)



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