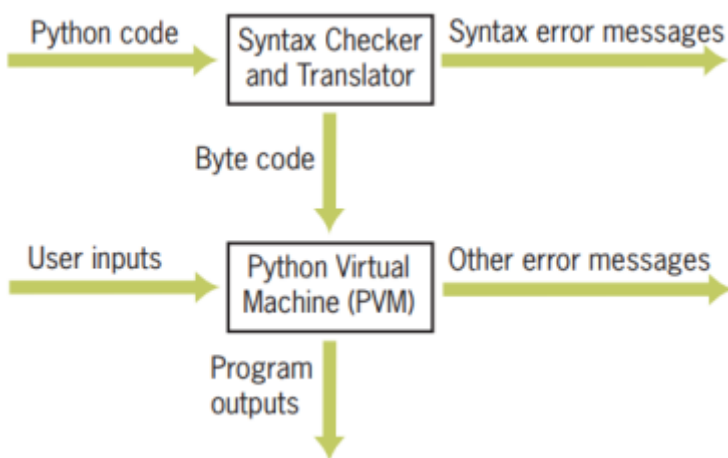


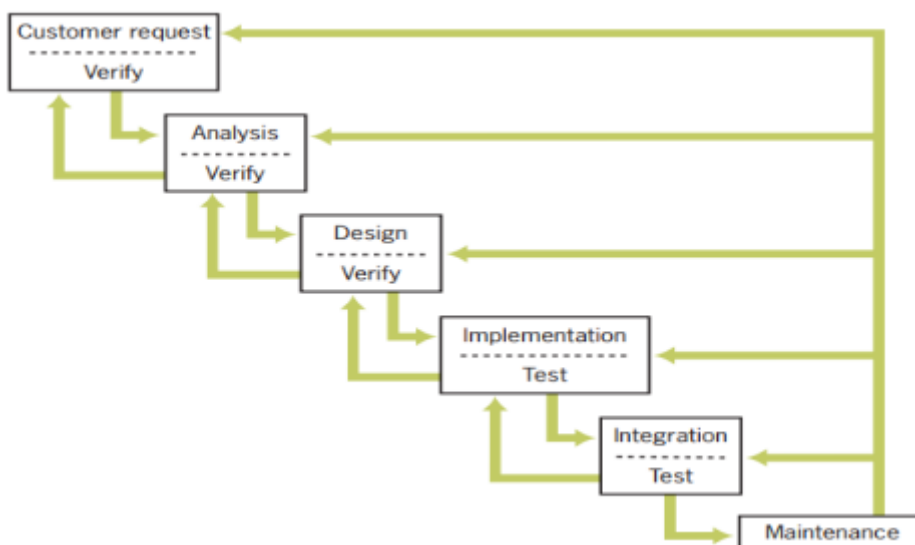
01 Python Introduction

Python Overview

- High-level, general-purpose language
- Free and runs on any OS
- Interpreted language (not compiled)
- Uses indentation for scope definition (e.g., loops, functions)



The Software Development Process - Waterfall Model



Features and Applications of Python

1. **Easy to Learn** : Simple syntax and fewer keywords
2. **Portable** : Runs on various hardware platforms
3. **Extendable** : Can add low-level modules
4. **Scalable** : Suitable for large programs
5. **Supports Multiple Programming Paradigms** : Functional and structured programming
6. **Scripting and Byte Code Compilation** : Can be used for scripting and compiled to byte code
7. **Automatic Garbage Collection** : Manages memory automatically
8. **Integration** : Can be integrated with other languages like C, C++, Java

Basic Coding

```
# This is a comment
name = "Alice" # string , assignment
print(name)

age = 25          # int
height = 5.9      # float
complex_number = 3 + 4j # complex

result = age + height # expression
print(result) # Output: 30.9
print(type(result)) # Output: <class 'float'> : type-conversion

# selection structure(if-else)
if age > 18:
    print("Adult")
else:
    print("Minor")

# for loop
for i in range(5):
    print(i)

# while loop
count = 0
while count < 5:
    print(count)
```

```
count += 1
```

```
# input
```

```
name = input("Enter your name: ")
```

```
print("Hello, " + name + "!")
```

Character Sets

- ASCII stands for American Standard Code for Information Interchange
- ASCII set encoded each keyboard character and several control characters using the integers from 0 through 127
- Python's `ord()` & `chr()` functions convert characters to their numeric ASCII codes and back again, respectively

	0	1	2	3	4	5	6	7	8	9
0	NUL	SOH	STX	ETX	EOT	ENQ	ACK	BEL	BS	HT
1	LF	VT	FF	CR	SO	SI	DLE	DC1	DC2	DC3
2	DC4	NAK	SYN	ETB	CAN	EM	SUB	ESC	FS	GS
3	RS	US	SP	!	"	#	\$	%	&	'
4	()	*	+	,	-	.	/	0	1
5	2	3	4	5	6	7	8	9	:	;
6	<	=	>	?	@	A	B	C	D	E
7	F	G	H	I	J	K	L	M	N	O
8	P	Q	R	S	T	U	V	W	X	Y
9	Z	[\]	^	_	`	a	b	c
10	d	e	f	g	h	i	j	k	l	m
11	n	o	p	q	r	s	t	u	v	w
12	x	y	z	{		}	~	DEL		