

**MA144: Problem Solving and
Computer Programming**

Lecture-6

Tokens of C++

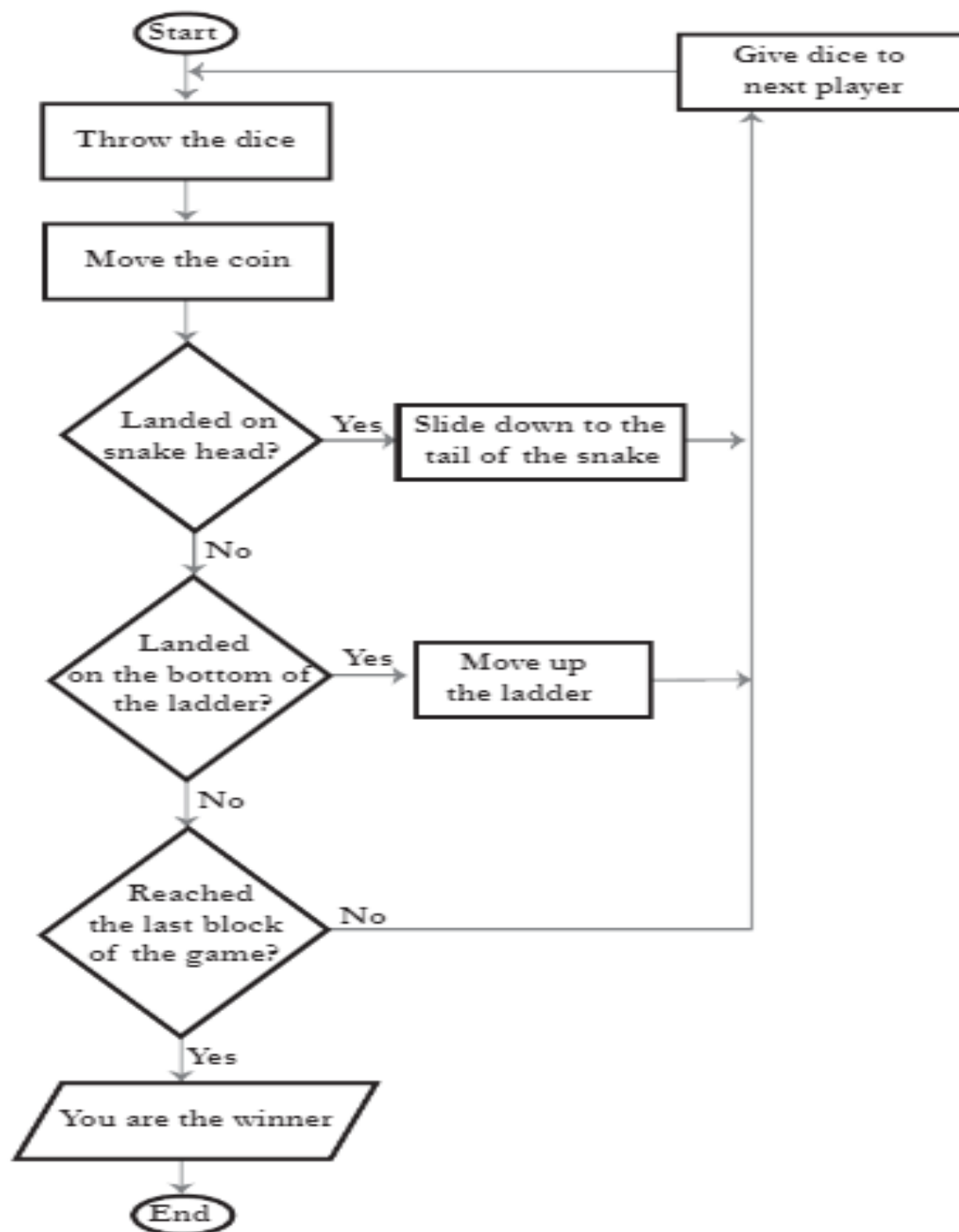
Flowchart Examples (contd...)

5. Find the maximum of more than three numbers
7. Find gcd of two numbers
9. Check whether the given number is prime or not

Flowchart Examples (contd...)

12. Draw a flowchart for Snakes and Ladder game





32		56	8	80	P	104	h
33	!	57	9	81	Q	105	i
34	"	58	:	82	R	106	j
35	#	59	;	83	S	107	k
36	\$	60	<	84	T	108	l
37	%	61	=	85	U	109	m
38	&	62	>	86	V	110	n
39	'	63	?	87	W	111	o
40	(	64	@	88	X	112	p
41	)	65	A	89	Y	113	q
42	*	66	B	90	Z	114	r
43	+	67	C	91	[	115	s
44	,	68	D	92	\	116	t
45	-	69	E	93	]	117	u
46	.	70	F	94	^	118	v
47	/	71	G	95	_	119	w
48	0	72	H	96	'	120	x
49	1	73	I	97	a	121	y
50	2	74	J	98	b	122	z
51	3	75	K	99	c	123	{
52	4	76	L	100	d	124	|
53	5	77	M	101	e	125	}
54	6	78	N	102	f	126	~
55	7	79	O	103	g		

Character Set

Tokens

Tokens - the smallest individual units in a program

- Keywords
- Identifiers
- Constants
- Strings
- Operators
- Special symbols

A C++ program is written using these tokens, white spaces, and the syntax of the language.

The syntax for a programming language is the set of grammar rules for that language.

Keywords

- Reserved identifiers (names) and **cannot be used** as names for the program variables or other user-defined program elements
- Because **they have predefined meaning** in C++

<i>alignas</i>	<i>default</i>	<i>if</i>	<i>reinterpret_cast</i>	<i>try</i>
<i>alignof</i>	<i>delete</i>	<i>inline</i>	<i>return</i>	<i>typedef</i>
<i>asm</i>	<i>do</i>	<i>int</i>	<i>short</i>	<i>typeid</i>
<i>auto</i>	<i>double</i>	<i>log</i>	<i>signed</i>	<i>typename</i>
<i>bool</i>	<i>dynamic_cast</i>	<i>long</i>	<i>sizeof</i>	<i>union</i>
<i>break</i>	<i>else</i>	<i>mutable</i>	<i>static</i>	<i>unsigned</i>
<i>case</i>	<i>enum</i>	<i>namespace</i>	<i>static_assert</i>	<i>using</i>
<i>catch</i>	<i>explicit</i>	<i>new</i>	<i>static_cast</i>	<i>virtual</i>
<i>char</i>	<i>export</i>	<i>noexcept</i>	<i>struct</i>	<i>void</i>
<i>class</i>	<i>extern</i>	<i>nullptr</i>	<i>switch</i>	<i>volatile</i>
<i>const</i>	<i>false</i>	<i>operator</i>	<i>template</i>	<i>wchar_t</i>
<i>const_cast</i>	<i>float</i>	<i>private</i>	<i>this</i>	<i>while</i>
<i>constexpr</i>	<i>for</i>	<i>protected</i>	<i>thread_local</i>	
<i>continue</i>	<i>friend</i>	<i>public</i>	<i>throw</i>	
<i>decltype</i>	<i>goto</i>	<i>register</i>	<i>true</i>	

Keywords (contd...)

- words like `cin` and `cout` are not on the list of keywords
- you are allowed to redefine these words,
- hence they are `not` keywords
- Avoid `re-define` these words