

Identifiers in Java

An identifier is any name in a Java program that can be used for identification purposes. It can be a method name, class name, variable name, or label name.

How many identifiers are present in the following program?

```
class First
{
public static void main(String args[])
{
System.out.println("Hello");
}
}
```

Answer: 7

First-user defined class name

main-method name

String-predefined class name

args-variable name

System-Predefined class name

println()-method name

Out-object reference name

How many identifiers are present in the following program?

```
class Student
{
    public static void main(String args[])
    {
        int x=10;
    }
}
```

Answer: 5

```
class Student
{
public static void main(String args[])
{
int x=10;
}
}
```

Student-user-defined class name

main- method name

String-predefined class name

args and x are the variable names

Rules for Defining Java Identifiers:

Following are the allowed characters for identifiers in Java:

A to Z

a to z

0 to 9

\$

_ (underscore)

By mistake, if you are using any other character, you will get a compile time error.

Identify the valid identifiers.

even_number

even#

even2

2even

Answer:

even_number valid

even# invalid

even2 valid

2even invalid- identifiers cannot start with digits.

Note: Java identifiers are case-sensitive. Java language itself is treated as a case-sensitive programming language.

class Demo

```
{  
public static void main(String args[])  
{  
int number =10; //Valid/Invalid  
int Number =10; // Valid/Invalid  
int NUMBER =20; //Valid/Invalid  
}  
}
```



```
System.out.println(xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx);  
}}
```

```
class Demo
{
public static void main(String args[])
{
    int _x=5;
    int x_=6;
    int $=3;
    int 123x=30; //illegal character
    int #=5;//illegal character
    int num=20;
    int Num=30;
    int NUM=40;
    //int num=50;//already defined
int x=10;
int xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx=20;
System.out.println(xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx);
}
}
```

Note :

There is no length limit for Java identifiers, even you can take any length, but it is not recommended to take too lengthy identifiers.

Can we use the reserved word for Java identifiers?

```
class ReserveW
{
public static void main(String args[])
{
int for =10;
int if =20;
int class =50;
int cat =70;
}}
```

Note: We cannot use reserve words as identifiers.

CE: not a statement

Can you tell what is the output we are going to get???

```
class Demo1
{
public static void main(String args[])
{
    int String =100;
    int Runnable=200;
System.out.println(String);
System.out.println(Runnable);
}
}
```

output: 100

200

Question : Valid or not???

Answer : 100% valid

These are the predefined class or Interfaces of Java.

Note:

All predefined Java class names and interface names, we can use as Java identifiers. Even though it is valid, it is not good programming practice. It reduces readability and creates confusion.

Which are the following valid/invalid Java Identifiers;TODO

total_num

total#

123total

total123

ca\$h

Integer

int

Int

\$\$\$

all@

Upes2020csf

total_num valid
total# inv
123total inv
total123 valid
ca\$h valid
Integer valid
int inv
Int valid
\$\$_\$ valid
all@ inv
Upes2020iot valid

Word:

In any language-normal language or programming language, some words are reserved words.

Eg. In English

apple✓

students✓

run✓

sleep ✓

god ✓

dog ✓

odg ✗

Similarly, In java, some words are reserved words to present some meaning or functionality, such types of words are called reserve words.

Reserve Words in Java:

These words can't be used for anything else because they're predefined. They can't be used as a variable name, object name, or any other identifier. There are 53 reserved terms or keywords in Java.

How many reserved words are there in Java?

40

45

50

53

55

63

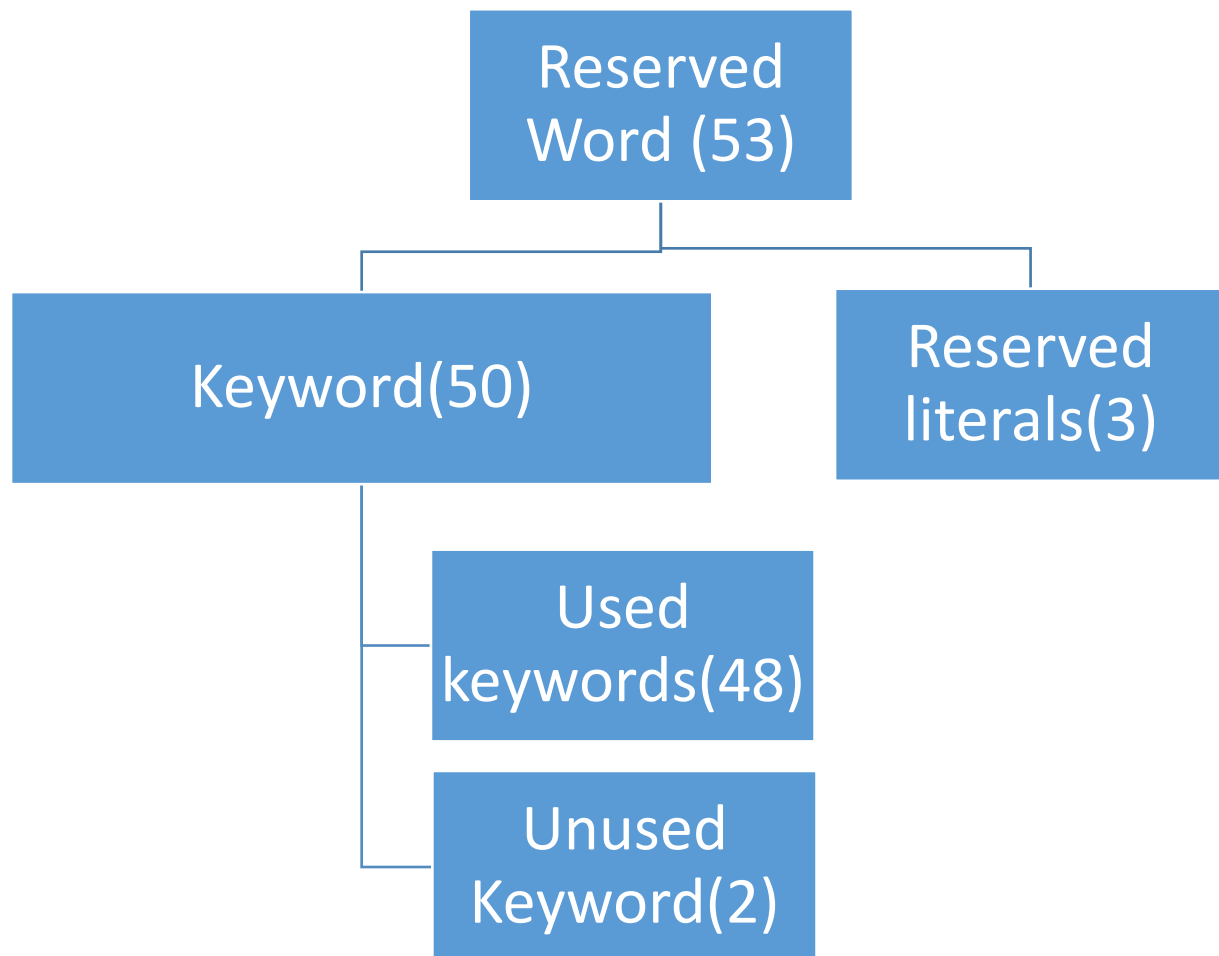
Answer: 53

abstract	assert	boolean	break	byte	case
catch	char	class	const	continue	default
double	do	else	enum	extends	false
final	finally	float	for	goto	if
implements	import	instanceof	int	interface	long
native	new	null	package	private	protected
public	return	short	static	strictfp	super
switch	synchronized	this	throw	throws	transient
true	try	void	volatile	while	

50 (keyword)+ 3(reserve literals) **true, false and null**

50 keyword= used keyword 48(if else.....)+unused keyword 2(goto,const)

const	The 'const' keyword is no more supported in Java
goto	The 'goto' keyword is no more supported in Java
true, false and null	The words "true, false, null" are literals. Still, we cannot use them as identifiers in the program.



Keywords for data types: 8

1. byte
2. short
3. int
4. long
5. float
6. double
7. boolean
8. char

Keywords for flow control: 11

9. if
10. else
11. switch
12. case
13. default
14. while
15. do
16. break
17. continue
18. return
19. for

Keywords for modifiers: 11 (Actually they are 12, default already included in flow control category)

20. public
21. private
22. protected
23. static
24. final

- 25. abstract
- 26. synchronized
- 27. native
- 28. strictfp- **1.2 version**
- 29. transient
- 30. volatile

Keywords for exception handling 6

- 31. try
- 32. catch
- 33. finally
- 34. throw
- 35. throws
- 36. **assert** **1.4 version**

Class-related keywords: 6

- 37. class
- 38. interface
- 39. extends
- 40. implements
- 41. package
- 42. import

Object related keywords: 4

- 43. new
- 44. instanceof
- 45. super
- 46. this

Return type keyword:1

- 47. void (default return type in java- void, default return type in c language-int)

Group of named const:1

48. enum

Unused keyword:2

49. goto- uses of goto created several problems in old languages, hence java people banned this keyword in java.

50. const- use final instead of const

Note: goto and const are unused keywords and if you are trying to use we will get compile time error.

Reserved word -literals:3

51. true: value for Boolean data type

52. false: value for Boolean data type

53. null default value of object reference

Note: All 53-reserved words in Java contain only lowercase alphabet symbols.

Note: In Java, we have only a new keyword, and there is no deleting keyword because the destruction of useless objects is the responsibility of the garbage collector.

Which are the following list contains Java reserve words:

- new, delete
- goto , constant
- break,continue, return,exit
- final,finally,finalize-method
- throw, throws,thrown
- notify, notifyall
- implements, extends, imports
- sizeof, instanceof-not in java
- istanceif,strictFp
- byte,short,Int
- none of these

Answer:

new, delete

goto, constant

break, continue, return, exit

final, finally, finalize-method

throw, throws, thrown

notify, notifyall

implements, extends, imports

sizeof, instanceof-not in java

instanceof, strictFp

byte, short, Int

none of these-true

Note: Automatically they come in blue color in Java IDEs.