Identifier :

- A name in java program is called identifier. It may be *class name, method name*, and variable name.

Example:

Rules to define java identifiers:

Rule 1: The only allowed characters in java identifiers are:

- a to z
- A to Z
- 0 to 9
- _ (underscore)
- $

Rule 2: If we are using any other character we will get compile time error.

Example:

- total_number------->valid
- Total#----------------->invalid.

Rule 3: identifiers are not allowed to starts with digit.

Example:

- ABC123--------->valid
- 123ABC--------->Invalid

Rule 4: java identifiers are case sensitive , java language itself treated as case sensitive language.

Example:

class Test{

int number=10;

```
int Number=20;

int NUMBER=20; we can differentiate with case.

int NuMbEr=30;

}
```

Rule 5: There is no length limit for java identifiers but it is not recommended to take more than 15 length.

Rule 6: We can't use reserved words as identifiers.

Example:

```
int if=10; --------------invalid
```

Rule 7: All predefined java class names and interface names we use as identifiers but not suggested.

Example 1:

```
class Test

{

public static void main(String[] args){

int String=10;

System.out.println(String);

}}
```

Output:

```
10
```

Example 2:

```
class Test
```

```
{
public static void main(String[] args){
int Runnable=10;
System.out.println(Runnable);
}}
```

Output:

```
10
```

- Even though it is legal to use class names and interface names as identifiers but it is not a good programming practice.

Reserved words:

In java some identifiers are reserved to associate some functionality or meaning such type of *reserved identifiers are called* ***reserved words***.

Reserved words for data types: (8)

1) byte

2) short

3) int

4) long

5) float

6) double

7) char

8) boolean.

Reserved words for flow control:(11)

1) if

2) else

3) switch

4) case

5) default

6) for

7) do

8) while

9) break

10) continue

11) return

Keywords for modifiers:(11)

1) public

2) private

3) protected

4) static

5) final

6) abstract

7) synchronized

8) native

9) strictfp(1.2 version)

10) transient

11) volatile

Keywords for exception handling:(6)

1) try

2) catch

3) finally

4) throw

5) throws

6) assert(1.4 version)

Class related keywords:(6)

1) class

2) package

3) import

4) extends

5) implements

6) interface

Object related keywords:(4)

1) new

2) instanceof

3) super

4) this

Void return type keyword:

If a method won't return anything compulsory that method should be declared with the void return type in java .

Unused keywords:

goto: Create several problems in old languages and hence it is banned in java.

Const: Use final instead of this.

By mistake if we are using these keywords in our program we will get compile time error.

Reserved literals:

1) true values for boolean data type.

2) false

3) null----------------- default value for object reference.

Conclusions :

1. All reserved words in java contain only lowercase alphabet symbols.

2. New keywords in java are:

3. strictfp-----------1.2v

4. assert-------------1.4v

5. enum--------------1.5v

6. In java we have only new keyword but not delete because destruction of useless objects is the responsibility of Garbage Collection.

7. instanceof but not instanceOf

8. strictfp but not strictFp

9. const but not Constant

10. syncronized but not syncronize

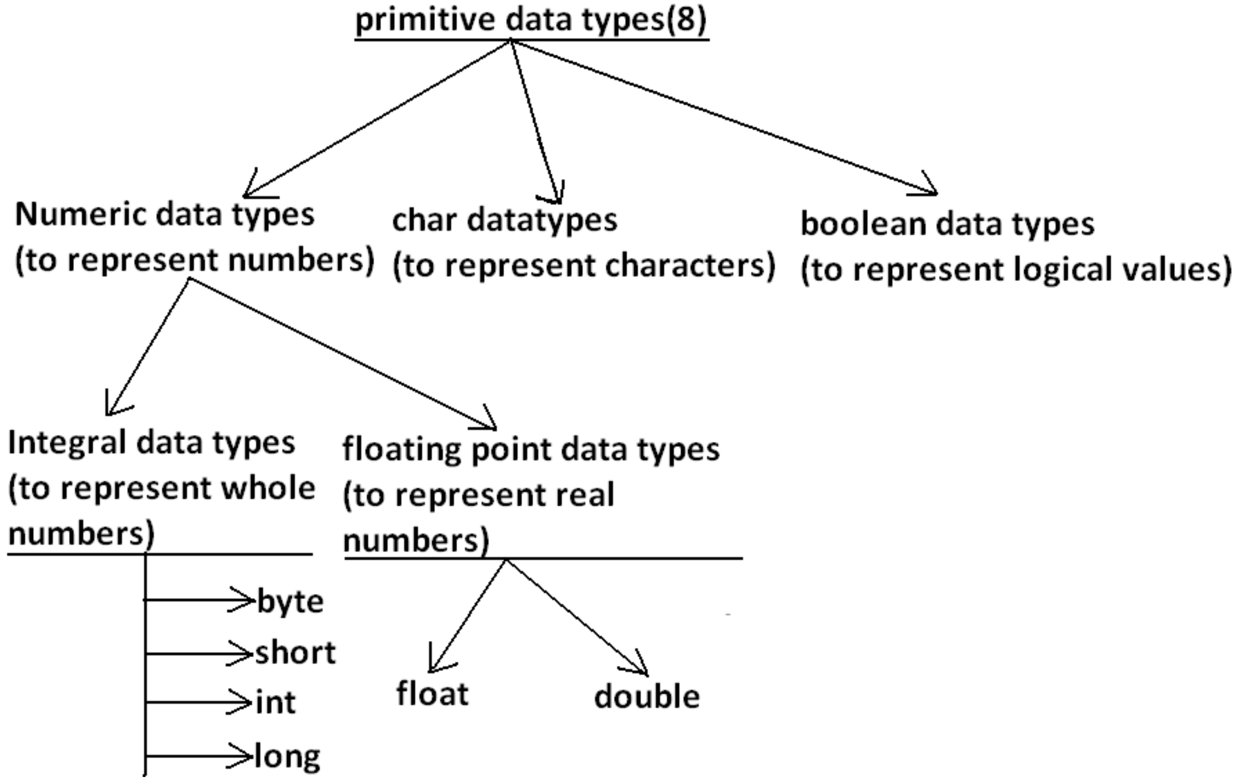
11. **extends** but not extend

12. **implements** but not implement

13. **import** but not imports

Data Types in Java

Every variable has a type, every expression has a type and all types are strictly define more over every assignment should be checked by the compiler by the type compatibility hence java language is considered as strongly typed programming language.



Summary of java primitive data type:

data type	Size	Range	Corresponding Wrapper class	Default value
byte	1 byte	-2^{7} to $2^{7}-1$(-128 to 127)	Byte	0
short	2 bytes	-2^{15} to $2^{15}-1$ (-32768 to 32767)	Short	0
int	4 bytes	-2^{31} to $2^{31}-1$ (-2147483648 to 2147483647)	Integer	0
long	8 bytes	-2^{63} to $2^{63}-1$	Long	0
float	4 bytes	-3.4e38 to 3.4e38	Float	0.0
double	8 bytes	-1.7e308 to 1.7e308	Double	0.0
boolean	Not applicable	Not applicable(but allowed values true|false)	Boolean	false
char	2 bytes	0 to 65535	Character	0(represents blank space)