Language Fundamental:

1. Identifier
2. Reserve keywords
3. Data Types
4. Literal
5. Arrays
6. Types of variables
7. Var args method
8. Main method
9. Command line arguments
10. Java coding standers.

Identifier:

A name in java program is called identifier which can be used for identification purpose it can be method name or variable name class name or label name.

class Test{-1

public static void Main(2)(String(3) [] args(4))

{

Int x(5)

}

}

There are 5 identifier in above code. Note -String is also name of a class

Rules for defining java Identifiers:

* The only allowed character in java idendentifiers are a-z, A-Z,0-9 ,$,\_ If we are using any other character we will get compile time error. Eg total\_Numer (Valid), total#(Invalid)
* Identifiers can’t starts with digits total123(valid) but 123total is invalid.
* Java identifiers are case sensitive offcourse java language is treated as case sensitive programming language

Ex class test{

int number=10;

int Number=110;

int NUMBER=10;

* There is no length limit for java identifiers but it is not recommended to take too lengthy identifiers
* We can’t use reserved words as identifiers

eg. Int x=10; int if=20(Invalid)

* All predefine java class names and interface names we can use as identifiers

Example

Class Test{

Public static void main(String [] args)

{

**int** String =888;

System.*out*.println(String);

**int** Runnable =999;

System.*out*.println(Runnable);

}

}

Even though it is valid but it is not a good programming practice because it reduces readability and creates confusion

Q) Which are the following are valid java identifiers.

1. Total\_number(Valid)
2. Total#(invalid)
3. 123total(valid)
4. Ca$h(valid)
5. \_$\_$\_$(valid)
6. all@hands(Invalid)
7. java2Shared(valid)
8. Integer(Valid)
9. Int(valid)
10. Int(Invalid)

Reserved Words:

In java some words are reserved to represent some meaning or functionality such type of words are called reserved words

Reserved words(53)

Reserved Literal (3)

Keywords (50) 1-ture

2-false 3-null

Used Keywords (48) Unused Keywords(goto ,const)

Keywords for Data types (8)

byte , short , int ,long,flot ,double,boolean , char

Keywords for flow control (11)

If, else ,switch(case, defaut) , while , do for break, continue , return

Keywords for modifiers (11)

public , private , protected, static , abstract, synchronized, native,strictfp(1.2v), transient ,volatile

Keywords for exception handling (6)

try, catch, finally , throw , throws , assert .

Class related keywords (6)

class, interface, extends , implements, package, import

Object related keywords(4)

new , instanceof, super,this

void return type keywords (1)

void

in java return type is mandatory if a method won’t return anything then we have to declare that method void return type. But in C language return type is optional and default return type is int.

Unused Keywords (2)

goto –usage of goto created several problem in old language and hence sun people ban this keywords in java.

const-Use final instead on const.

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

Reserved literals:( 3)

true, false(value for boolen data type), null(default value for object reference)

Enum Keyword (1.5 version ) 1

We can use enum to define a group of name constants eg.

enum Month{ jan, feb, march-----dec}

enum Beer{kf, ko, rc,fo----}

Conclusions :

1. All 53 reserved words in java contains only lower case alphabet symbols
2. In java we have only new keyword and there is delete keyword is java because destruction of useless object is responsibility of garbage collector.
3. The following are new keywords in java

strictfp(1.2v), assert(1.4v),enum(1.5v)

strictfp but not strictFp , instanceof but not instanceOf, synchoronized but not synchronize

extends but not extend ,import but not imports, implements but not implement , const but not constant.

Which of the following list contains only java reserve words

1. new ,delete(invalid)
2. goto , Constant(invlaid)
3. break , continue, return ,exit(invalid)
4. final , finally, finalize(invlid)
5. throw , thows ,thown(invalid)
6. notify(invalid) ,notifyAll(invalid)
7. implements , extends , imports(invalid)
8. sizeof (invalid), instanceof
9. instanceOf(invalid), strictFp(Invalid)
10. byte, short ,Int(invalid)
11. None of the above

Ans: Non of the above is correct

Which are the are java reserved reserve words.

public static void main(String[] args)

reserved words-public , static, void.

Data types:

In java every variable and every expression has some type each and every data type is clearly defined every assignment should be checked by compiler for type compatibility

Because of above reason we can conclude java language is strongly typed programming language

Java is not considered as pure object oriented programming language because several oops feature are not satisfied by java like Operator overloading , Multiple inheritance etc more over we are depending on primitive data types which are non objects

Primitive Data types:

**Primitive Data types**

**Numeric Data Type** Non Numeric Data Type

1- Char

Integer data Type Floating data Type 2-boolean

1-Byte 1- Float

2-Short 2-Double

3-Int

4-long

Except boolean and char remaining data type are considered as signed data types because we can represent both positive and negative numbers.

1-byte :

Size 1 byte (8 bits)

Max Value +126

Min Value -128

Range -128 to 127

The most significant bit act as sign bit 0 means positive number 1 means negative number positive number will be represented directly in the memory where as negative number will be represented in 2s compliment form.

Example

byte b=10(valid)

byte b=-127(valid)

byte b=128 CE possible loss of precision found int required byte

byte b=10.5 CE possible loss of precision found double required byte.

byte b=ture CE incompatible type found boolean required byte.

byte b=”Rahul” CE incompatible type found java.lang.String required byte.

Note –byte is best choice if we want to handle data in term of stream either from the file or from the network (File supported form or network supported form is byte)

Sort:

This is most rarely used data type in java

Size: 2 bytes (16 bits)

Range -2^15 -2^15-1

Example

sort s=32768CE possible loss of precision found int required sort.

sort s=ture CE incompatible type found boolean required sort.

Note –sort data type is best suitable for 16 bit processors like 8085 but these processors are completely out dated hence corresponding sort data type is also out dated data type.

int:

The most commonly use data type in java is int.

Size :4 Byte(32 bits)

Range -2^31 -2^31-1 (-2147483648 -2147483647)

Example:

**int x=2147483648 CE integer number too large.**

**int x=2147483648l CE possible loss of precision found long required int.**

int x=true CE incompatible types found boolean but required int.