Republic of the Philippines
Department of Education
REGION III
SCHOOLS DIVISION OFFICE OF NUEVA ECIJA

LEARNING ACTIVITY SHEET
SPECIAL PROGRAM IN ICT 9
BASIC PROGRAMMING

Second Quarter, Week 4

JAVA IDENTIFIERS AND KEYWORDS

Background Information for Learners

Java identifiers represent names of variables, methods, classes, etc. Examples of it are: Hello, static, System, out. They are also case-sensitive. This means that: **Morning** is not the same as **morning**. It must starts with either an alphabet (a-z) letter, an underscore (_), or a dollar sign ($). Letters may be small or capita. the following characters may use 0 to 9 like “morning123” or “Hello143”.

Java keywords like class, public, void, are cannot be use as Identifiers. We will discuss more about it later.

JAVA IDENTIFIERS

In programming languages, Java identifiers are used for identifying a class name, method name, variable name, or label. For example:

```
public class Exam
{
   public static void main(String[] args)
   {
      int x = 100;
   }
}
```

In the example given, we have five (5) identifiers namely:

1. **Exam**: class name.
2. **main**: method name.
3. **String**: predefined class name.
4. **args**: variable name.
5. **x**: variable name.

Guidelines for Defining Java Identifiers

There are few guidelines for determining a valid java identifier. These are guides that must be followed, otherwise an error will occur (compile-time error). These are also valid for other languages like C, C++.

- The only permitted   for Java identifiers are all alphabet letters ([**A-Z**], [**a-z**], numbers [**0-9**]), ‘**$**‘(dollar sign) and ‘**_** ‘ (underscore). For example, “good%” is not a java identifier because it contains ‘%’ special character.
- Identifiers should **not** begin with numbers 0 to 9. For example, “456iloveyou” is a not a true identifier.
- Identifiers are also **case-sensitive**.
- There is no exact length of the identifier but it is ideal to use a 4 – 15 letters only.
- **Reserved Words** can’t be used as Java identifier. For instance, “double **class** = 100;” is not a valid statement as **class** is a reserved word. It has 53 Java reserved keywords.

Examples of valid identifiers :

- MyLove
- MYLOVE
- mylove
- z
- a
- z2
- a4
- _mylove
- $mylove
- total _of_array
- hello143

Examples of invalid identifiers :

- My Love   // has white space
- 456hello   // start with a number
- a+b // plus sign is not an alphanumeric letter
- love-2 // hyphen is not an alphanumeric letter
- Mr_&_Mrs // ampersand is not an alphanumeric letter

Java Keywords

In Java programming, there are special or reserved keywords used intended for the compiler only because it has special meaning. For example:

double grade;

Here, **double** is a keyword. It indicates that the variable **grade** is of integer type (32-bit signed two's complement integer).

You cannot use keywords like **double** , **char** , **boolean**, etc as java identifiers because they are part of the Java programming language reserved keywords . The complete list of all keywords in Java programming and its description are as follows:

Keyword	Description
abstract	It is used for classes and methods: A non-access modifier
assert	For removing error; debugging
boolean	It only save true and false values; A data type
break	Remove or separate f a loop or a switch block
byte	It save whole numbers from -128 and 127 ; A data type
case	Marks a block of code in switch statements
catch	Captures exceptions produced by try statements
char	It saves a single character; A data type
class	States a class
continue	Remains until the next iteration of a loop
const	Specifies a constant. Not in use - use final instead
default	Defines the default block of code in a switch statement
do	It is Used with *while* to create a do-while loop
double	It save whole numbers from 1.7e−308 to 1.7e+308; A data type
else	It is used in conditional statements
enum	Refers to an enumerated (unchangeable) type
exports	It exports a package with a module. New in Java 9
extends	It extends a class
final	It is used for classes, attributes and methods, which makes them non-changeable ; A non-access modifier
finally	It will be executed no matter if there is an exception or not
float	It save whole numbers from 3.4e−038 to 3.4e+038; A data type
for	Make a for loop
goto	It has no use or function
if	Creates a conditional statement
implements	Apply an interface
import	Used to express a package, class or interface
instanceof	Determine whether an object is an example of a specific class or an interface
int	It save whole numbers from -2147483648 to 2147483647; A data type
interface	Used to refer a special type of class that only has abstract methods
long	it save whole numbers from -9223372036854775808 to 9223372036854775808; a data type
module	Refers a module. New in Java 9
native	Defines that a method is not executed in the same Java source file
new	Produces new objects
package	Refers a package
private	It is used for attributes, methods and constructors, making them only available within the declared class; An access modifier

protected	It is used for attributes, methods and constructors, making them available in the same package and subclasses; An access modifier
public	It is used for classes, attributes, methods and constructors, making them available by any other class; an access modifier
requires	Specifies required libraries inside a module. New in Java 9
return	It is used to reciprocate a value from a method
short	Save whole numbers from -32768 to 32767
static	It used for methods and attributes. It can be used without making an object of a class
strictfp	Limit the precision and rounding of floating point calculations
super	Pertains to superclass (parent) objects
switch	Chooses one of many code blocks to be executed
synchronized	it defines that methods can only be accessed by one thread at a time; A non-access modifier
this	Pertains to the current object in a method or constructor
throw	Produces or creates a custom error
throws	It shows what exceptions may be thrown by a method
transient	It defines that a feature or an attribute is not part of an object's persistent state; A non-access modifier
try	It provides a try...catch statement
var	It states a variable. New in Java 10
void	Defines that a method must not have a return value
volatile	Shows that an attribute is not cached thread-locally, and is often read from the "main memory"
while	It is used to create a while loop

Note: The words like ***true***, ***false***, and ***null*** are not keywords because they are literals that cannot be used as identifiers.

Learning Competency with Code

1. Define what Java identifiers are and identify its guidelines.
2. List the different Java keywords

Exercises/Activities

Check our Google Classroom for the activities

References for Learners
https://www.geeksforgeeks.org/java-identifiers/
https://www.w3schools.com/java/java_ref_keywords.asp
https://www.programiz.com/java-programming/keywords-identifiers
JEDI Course Notes-Intro1-MasterDocument.pdf

Prepared by: **LAARNI G. MONEDA**
Name of Writer

Noted by: **LABERNE A. LADIGNON, JR**
Division ICT Coordinator/ EPS I

Exercises/Activities

Activity 1: IDENTIFICATION.

Tell whether the following are **VALID** or **INVALID** Java identifiers. Type your answer in the Private Comment section of our Google Classroom

1. Null
2. mysalary
3. X100
4. 456Anna
5. Hi and hello
6. Happy
7. __iloveyou
8. 143baby
9. Num 28
10. $srnhs

Activity 2: MODIFIED TRUE OR FALSE.

Read each statement and tell whether the following is **true** or **false**. Type your answer in the Private Comment section of our Google Classroom. If **False** write the correct answer. No.1 is done for you.

__false- identifiers______ 1. Reserved keywords can't be used as an **literals**.

______________________ 2. Abstract, case and return are examples of **identifiers**.

______________________ 3. Identifiers should **not** start with numbers (**[0-9]**)

______________________ 4. " my LOVE " is not valid identifier because it has a white space.

______________________ 5. There is no limit on the length of the identifier but it is recommended to use a length of **1-100** letters only.

______________________ 6. **Identifiers** represent names of variables, methods, classes, etc_

______________________ 7. **My name** is not a valid identifier.

______________________ 8. Mr & Mrs. is an example of **valid** identifier.

______________________ 9. Identifiers are **case-sensitive**.

______________________ 10. There are **50** reserved words in Java.

Activity 3: IDENTIFICATION

Identify the Java keywords being described on each number . Choose the answer inside the box and type your answer in the Private Comment section of our Google Classroom

throws void enum Boolean while
new class continue var void return

______________________ 1. States what exceptions may be thrown by a method_

______________________ 2. It can only save true and false values_

______________________ 3. Indicates an enumerated (unchangeable) type_

______________________ 4. Makes new objects

______________________ 5. States a class_

______________________ 6. Remains until the next iteration of a loop_

________________________ 7. States a variable. New in Java 10

________________________ 8. Makes a while loop_

________________________ 9. Defines that a method should not have a return value

________________________ 10. Ended the execution of a method, and can be used to return a value from a method.

Reflection

What are the importance of rules or guidelines in using Java identifiers? How is Java keywords differ from Java identifiers?

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