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INSTITUTE : UIE
DEPARTMENT : CSE

Bachelor of Engineering (Computer Science & Engineering

PROJECT BASED LEARNING IN JAVA

(20CST-319/20ITT-319)

TOPIC OF PRESENTATION:

Keywords, Tokens, Data types.

Lecture Objectives

In this lecture, we will discuss:

- Keywords, Tokens, Data types.

Java Identifiers:

- All Java components require names. Names used for classes, variables and methods are called identifiers.

- In Java there are several points to remember about identifiers. Th[...] are as follows:

- All identifiers should begin with a letter (A to Z or a to z), currency character ($) or an underscore (_).

- After the first character identifiers can have any combination of characters.

- A key word cannot be used as an identifier.

- Most importantly identifiers are case sensitive.

- Examples of legal identifiers: age, $salary, _value, __1_value
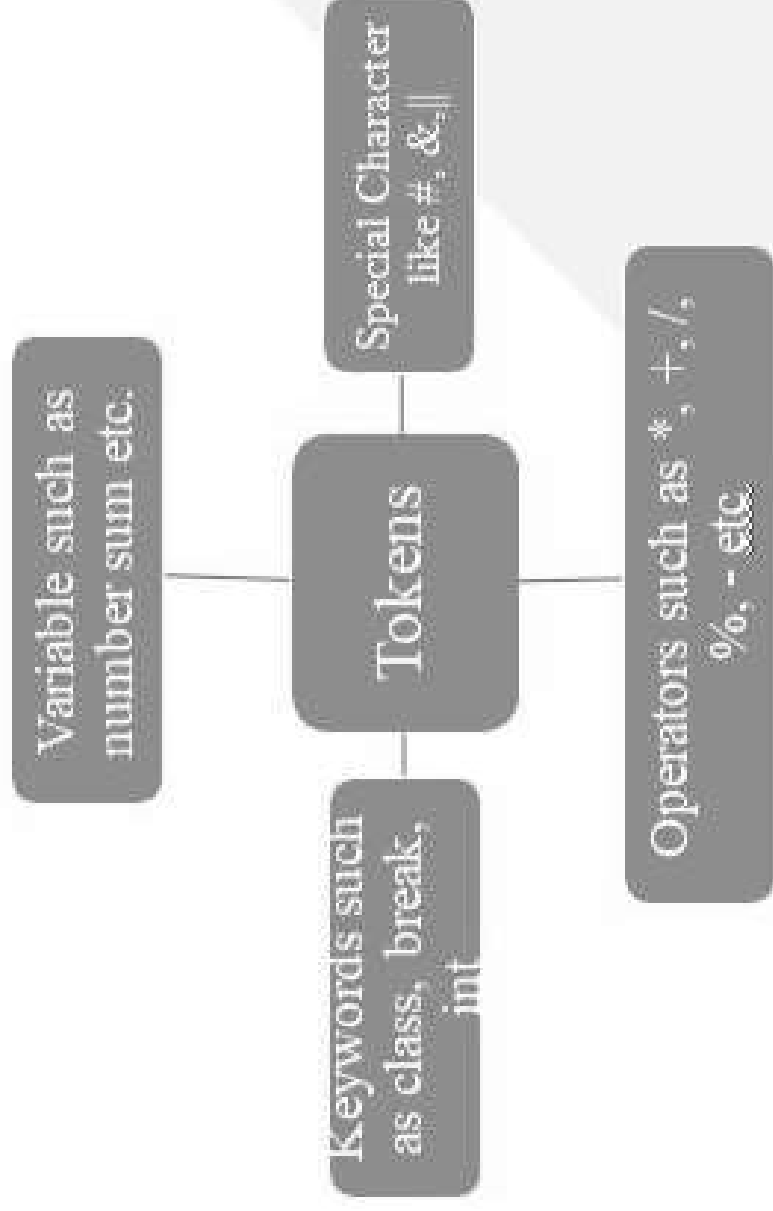
- Examples of illegal identifiers: 123abc, -salary

Keywords

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

Tokens

- Compiler can identify some elements in program that are Tokens

- A token is the smallest element of a program that is a specified mean[ing to?] the compiler.

- In java, tokens include keywords, variables, constants, special charac[ters,] operations etc.

Tokens


```
                    Tokens

Variable such as       Special Character
number sum etc.        like #, &, ||

Keywords such          Operators such as *, +, /,
as class, break,       %, - etc
int
```

Data types

Data Type	Size (in bits)	MinimumRange	MaximumRange	DefaultValue (for fields)
byte	8	-128	+127	0
short	16	-32768	+32767	0
int	32	-2147483648	+2147483647	0
long	64	-9223372036854775808	+9223372036854775807	0L
float	32	1.40E-45	3.4028234663852886e+38	0.0f
double	64	4.9406564584124654e-324d	1.7976931348623157e+308d	0.0d
char	16		0 to 65,535	\u0000
boolean	1	NA	NA	false

Difference:

- The main difference between **primitive** and **non-primitive** data types are:

- Primitive types are predefined (already defined) in Java. Non-primitive types a created by the programmer and are not defined by Java (except for String).

- Non-primitive types can be used to call methods to perform certain operation while primitive types cannot.

- A primitive type has always a value, while non-primitive types can be null.

- A primitive type starts with a lowercase letter, while non-primitive types start with an uppercase letter.

- The size of a primitive type depends on the data type, while non-primitive typ have all the same size.

Examples of non-primitive types are Strings, Arrays, Classes, Interface, etc.

QUIZ:

1. Java is a ……….. language.

A. weakly typed

B. strongly typed

C. moderate typed

D. None of these

2. In Java byte, short, int and long all of these are

A. signed

B. unsigned

C. Both of the above

D. None of these

Summary:

In this session, you were able to :
- Learn about Keywords, Tokens, Data types.

References:

Books:

1. Balaguruswamy, *Java.*
2. A Primer, E.Balaguruswamy, *Programming with Java*, Tata McGraw Hill Companies
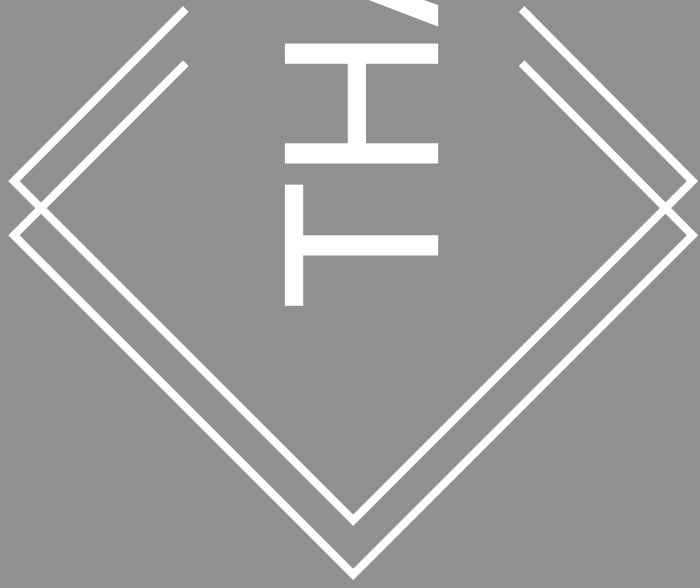3. John P. Flynt Thomson, *Java Programming.*

Video Lectures :

https://www.youtube.com/watch?v=f8lCiYqui28

https://www.youtube.com/watch?v=e5ftceLyKbM

https://www.youtube.com/watch?v=TL7tdNp0raE

Reference Links:

https://www.w3schools.com/java/java_ref_keywords.asp

https://www.geeksforgeeks.org/list-of-all-java-keywords/

https://docs.oracle.com/javase/tutorial/java/nutsandbolts/_keywords.html

https://www.w3schools.com/java/java_data_types.asp

https://www.geeksforgeeks.org/data-types-in-java/

https://www.youtube.com/watch?v=bqPlWlnjWbA

https://www.youtube.com/watch?v=iFzA43xR04s

THANK YOU