**JAVA PROGRAMMING LEARNING SECOND SUMMARY**

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**Variables**

Variables are storage holders for datas in Java Pl, variables can be declared explicitely in java; examples are: Area, name, age, addresss

**Variable Types**: The variables types in java includes the primitive types which are Integer (byte, long,short, int), Char (Unicode) could be numbers or single characters, Boolean (includes true or false),

**Variable declaration** : this simple means naming and declaring the variable, it simply as int Num; char code; bool b; byte info;

**Variable Initialization :** this simply means initializing values to the declared variables already such Num = 2; code =”a”; info= “240”; b = true;

**Dynamic Initialization**

Class Example {

public static void main(String args []){

Int a = 45, b= 34;

Int c = a + b; // c is initialized dynamically

}

}

**Scope and Variable Lifetime**

This refers to the lifetime of variable i.e where a variable can be used , and how it changes; and access to the variable

Class Example{

Public static void main(String args []){

Int a = 5, x= 10;

//changing the variable value

a = a +1 // variable value changed;

if (x == 10){

int b = 6;

a = a + b //can access the a variable from the block but the reverse cant be

}

System.out.println(“The new value of a is “ + a);

}

}

}

**Type conversion and Casting**

Its basically 3 types: widening, narrowing, truncation;

Widening is when data types of almost the same are being converted to each other , such as (byte, short,) can be all converted to integers because integers can take them up in its space or long

Narrowing: this is when converting a large data type into a smaller data type such as from integers into a byte

Truncation : this is basically the case of converting a double into an integer , the decimal parts are cut off leaving the whole number

**Array**

Single Array

int arrayExample[] = {1,2,3,4,5,6,7};

OR

Int arrayExample = new int[6];

arrayExmple[0] = 1;

arrayExmaple[1] = 2;

arrayExample[2] = 3;

arrayExample

System.out.println(arrayExample[1] // prints out 2

Multidemsional array

Int multiArray[][] = {{1,2,3,4}, {5,6,7,8}, {9,10,11,12}};

System.out.println(multiExample[0][2] // prints out 3;

System.out.println(multiExample[1][2] // prints out 7;

System.out.println(multiExample[2][2] // prints out 11;

**Type Inference**

The type inference allows variables to be declared not only explicitely by not specifying the data type of the variable through using the var keyword

var age = 12 // is automatically type int

var myArray = new int [5];

myArray[0] = 1;

myArray[1] = 4;

int var = 7; //can also be used a variable name