

EDAC. Mumbrig PG-BAC Aug 24, ASSIGNMENT NO 3,

Note: -

(1) - Explain the Components of JD19 The Java: Development 1cit CJDK)

is a Comprehensive Suit of two 1st

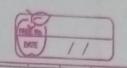
and resources necessary. Sor developy

compiler del 2 Compiling, debugging & running Java Oppurations.

> (1). Java Compiler , function: converts Java source (Dava files). into by tecade (- class flass). Bytecode is an intermediate representation of othe Code that can be executed by JVM. , Pur pose: Ensures - that he code is g syntactically. Correct and translaty it into a form that Jum Can, interpret & Run.

Runtre Enmonnent (JRE) 2) Java . Function: Provides the necessary libraries & comparets to run Java appins.

Compowent Java virtual Macha (gvm). Executes byte code generated by the complete It post des. independance cellury that has a Jum,



- · Class libraries; A collection of pre-writter classes and interfaces that provide standard functionally like data structures networking, file I/O, and more.
- purpose! While the JRE is part of the JDK,
 it it can also be installed. Separaty
 to run Java applications without the head to
 compile them.
- 3: Java Debugger (jdb).

 function: A command-live tool Used to

 find & fix bugs in Java pagrams

 Features:
 - features. Allows developers to set breakpoints e te p through Code, & inspect - variables & objects at runtime.
- function. A command-line tool used to find & fix bugs in Java programs.
 - 4. Java Archiver (jar).

 . Function: packages Java (lass file) resources.

 2. metadada into a single compressed

 archive file with a jax extension.

 . purpose: facilities the distribution & deployment of Java appli cations or libraries making it.

 easter to share & execute the code.



5 Java Dolumentation Generator Gavacing.
Function: Generates. HTML dolument.
from Java Source Comments.
purpose: Helps developers treated
readable & well-organized developers
decumentation. For their code, which
is essential. For understanding &
maintaining large code buses

6. Java: Command. Cjava).

Function: Used to run. Java Applicating
It launces Jum & louds necessary,

flasses & resources to execute the appropumpose: It is every point for executy
Java programs, ester from compiled,
by te codo. C. class files) or dreby
from Jar file.

Java P: A class file disassent ler weeky.

Br inspetty the by telade of compiled.

Classel.

Javah! Crenerates - C headers Dearrie

Ailes from a Java It is useful.

When inter facry Java with nature

co de

f consule, J visual m: monitorry & performe

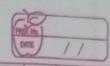
ar alysis to als for Java apprilations

ij shell: An inter actue Command-live

too 1 i now duced in Jok J. Ar gar con

jesting & running son i ppet 5 of

Java Co de without ority a full Programme



12)	Differentiale beth JOIC, JWM & JRE.		
(5)		707	1
(1)	1	JRE (1) It Stands for Java Runtine Environment	WI + Stands for
	Java Development Kit		1- Machre
(2).	It is sold were. Development kit.	It's a Software bundle	I machine that provide
	in Jura.	libraries with necessary Components to run Cade	run & encomment to
(3)	It contains tools for developing, & monitoring Java code	It Contains class 11 borarres lotter' Supporting files that Jum requires to	Softwar durlop + +0015 are not included in Jum
(4)	The JDIC enables. developers to create, Java Programs that can	of the Jum.	
(5)	be excuted & trun by the JRF & JVM Super Set	subjet of JOK S	ublet 4 JRE



- how does. Jum ever the January &

 how does. Jum ever the January

 The Jum's roote is to exercise

 Java byte code. The provides con

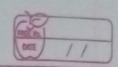
 en non heart where Java applications

 can run. The Jum Corner to by tecase

 into machine code using an

 interpreter of JIT compiler for

 execution on host mache
- (4) Explain, memory management System of JVM.
 - a reap: Stores Objects & their instance
 - Estacic: Stores local versable S ?
 - O me hod onea: contains class-lover information like class definitions? Static versables
- DPC Registers! Holds the address
 of correctly executly Jum
 instruction.
- Di rathe method stack; managa
- f Garbage Collection (GClr; Automatorany rectains memory by remove objects that holonger in whe



- What are the 511t (ompiler & its wheir.

 To m? what is the byte code & why its
 important for Jam?.

 The compiler: converts bytecode into nathe
 - machine code at suntre to improve performance It optimizes coll exelution of for it has neen interpreted mutiple times.

By te code! An intermidiate code generated by the Java Compiler. It is important because it allows Java to be platform - independent enabling the Same Code to run on any System with Jone

(b). Describe architecture of Jum The JVM architecture include; class loader; Loads class files

memoy Areal; managel different memoy regions

l heap, Stack method orca) Precuron Engine: Executes the byte code uty.

the interpreter or III Compiler.

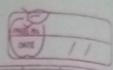
Notre method interface: (cull nature method)

written in other languages thanks

Name method Libraries: (ontains library by

natic methods

- HOW does Java achieve. platform independence
 - -) Java acheles pour form independance by Comply Java coll into bytecode will is pluttorm agnostic the trum specific totale of interprets or compiled his bytecode into native machine code, anably Java Applin te run on ay den'a



- (3) What is the significance of the class louder in Javal, what is the processed garroage collection in Javal.

 Tours louder: Responsible for depraintably louding JAVA classes into Javant Jum at reintine. It louds classes one louded in a hierar chial manner core louded in a hierar chial manner classification.

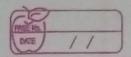
 The bootshop, exten sinn, 8 application, classification browbage collection, the JV m automatical handles memoring manage rent by identifying & disposing of objects new are no longer referenced or used, freezry up memory hor
- 19). What are 4 access modifiers in Java. & how do try differ from each other?

other objets.

-> public! The Class, method or frees is accessible formary other

protected: Accessible within Its own package aby subclass the alfaut: Accessible only. within Its

private: Accessor comy within the



- (10) What is difference. beth public, protectors

 detault access modifiers.

 Sur as 09.
- (11) (an you provide a method with a different access modifier is a subclass? So exaple.

 Can appreched, method is a. superclass can be over over isolder. units with a.

 Private method in a subclass? explan

 No we cannot over ride a method with a max restricted a method with a common restricted a ccess modifier.

 For to instance A protected method as it was it reduce the visibility, of the
- (12) Difference bett protected. & defautaces!
 -) same as 84.

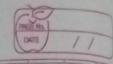
method is the Sub(las)

- private in Java? If yes where it.

 can be done & what are limitations?

 De top-level class cannot be private only hessed class is only allessible within the outer (lass it is defred. in.
- declared as protested or private ? Why not?
 - De de clase d cosas protecture or private, because it would make the Class

Teacher's Signature:...



mallessible dom onertlusses defeating the purpose of hanging a public or Package private elass.

- (15) What happens if you decree a variable or method as private on a class & try to acces it the another class with in the same puckage

 The variable or method is declared
 - JE a variable or method is declared as private, it cannot be accessed from another class peren ifity within Some packye. Access is restricted to the class in which it defined.
- (16) Explain the concept of "package

 preade" or "Le facult" access.

 How doer it affect the visibility

 Duckage private (tefanut) access.

 when no access modifier is specified

 the defant access is package

 proute members with this access

 proute accessible only with

 the same package meaning class

 aut side the package cannot access

 them