# Program:

## JAVA File

import java.util.Scanner; public class JNI {

public native void JniAdd(int no1,int no2); public native void JniSub(int no1,int no2); public native void JniMult(int no1,int no2);

public native void JniDiv(double no1,double no2); public native void JniPow(int no1,int no2);

public native void JniSqrt(int no1);

public native void JniMod(int no1,int no2); static { System.load("C:\\Users\\Bhushan

Kadam\\Desktop\\Practical\\LP1\\DLL\\libJNI.dll");}

public static void main(String[] args)throws Exception { int no1,no2;

Scanner in =new Scanner(System.in); JNI MJ=new JNI();

System.out.println("JNI using C"); System.out.print("Enter first number: "); no1=in.nextInt();

double no1f=no1;

System.out.print("Enter second number: "); no2=in.nextInt();

MJ.JniAdd(no1,no2); MJ.JniSub(no1,no2); MJ.JniMult(no1,no2); MJ.JniDiv((double)no1,(double)no2); MJ.JniPow(no1,no2); MJ.JniSqrt(no2); MJ.JniMod(no1,no2);

}

}

## C File\_JNI.h

/\* DO NOT EDIT THIS FILE - it is machine generated \*/ #include <jni.h>

/\* Header for class JNI\_JNI \*/

#ifndef \_Included\_JNI\_JNI #define \_Included\_JNI\_JNI #ifdef cplusplus

extern "C" { #endif

/\*

* Class: JNI\_JNI
* Method: JniAdd
* Signature: (II)V

\*/

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniAdd (JNIEnv \*, jobject, jint, jint);

/\*

* Class: JNI\_JNI
* Method: JniSub
* Signature: (II)V

\*/

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniSub (JNIEnv \*, jobject, jint, jint);

/\*

* Class: JNI\_JNI
* Method: JniMult
* Signature: (II)V

\*/

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniMult (JNIEnv \*, jobject, jint, jint);

/\*

* Class: JNI\_JNI
* Method: JniDiv
* Signature: (II)V

\*/

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniDiv (JNIEnv \*, jobject, jdouble, jdouble);

/\*

* Class: JNI\_JNI
* Method: JniPow
* Signature: (II)V

\*/

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniPow (JNIEnv \*, jobject, jint, jint);

/\*

* Class: JNI\_JNI
* Method: JniSqrt
* Signature: (I)V

\*/

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniSqrt (JNIEnv \*, jobject, jint);

/\*

* Class: JNI\_JNI
* Method: JniMod
* Signature: (II)V

\*/

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniMod (JNIEnv \*, jobject, jint, jint);

#ifdef cplusplus

}

#endif #endif

## C file\_JNI.c

#include <JNI.h> #include<math.h>

#define PI 3.14159265

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniAdd (JNIEnv \*e, jobject obj, jint no1, jint no2)

{

int add=no1+no2;

printf("Addition of nos.= %d",add);

}

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniSub (JNIEnv \*e, jobject obj, jint no1, jint no2)

{

int sub=no1-no2;

printf("\nSubtraction of nos. is= %d",sub);

}

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniMult (JNIEnv \*e, jobject obj, jint no1, jint no2)

{

int mult=no1\*no2;

printf("\nMultiplication of nos. is= %d",mult);

}

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniDiv (JNIEnv \*e, jobject obj, jdouble no1, jdouble no2)

{

double div=no1/no2;

printf("\nDivision of nos. is= %.3f",div);

}

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniMod (JNIEnv \*e, jobject obj, jint no1, jint no2)

{

printf("\nRemainder is= %.3f",fmod(no1,no2));

}

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniPow (JNIEnv \*e, jobject obj, jint no1, jint no2)

{

printf("\nPower is= %.3f",pow(no1,no2));

}

JNIEXPORT void JNICALL Java\_JNI\_JNI\_JniSqrt (JNIEnv \*e, jobject obj, jint no1)

{

printf("\nSquare root %d is= %.3f",no1,sqrt(no1));

}

## Output:

Microsoft Windows [Version 10.0.22621.674]

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C:\Users\Desktop\Practical\LP1\DLL>javac -h . JNI.java C:\Users\Desktop\Practical\LP1\DLL> gcc -o libJNI.dll -shared -fPIC -I"C:\Program Files\Java\jdk-18.0.1.1\include" -I"C:\Program Files\Java\jdk-18.0.1.1\include\win32"

JNI using C

Enter first number: 21

Enter second number: 15

Addition of nos.= 36

Subtraction of nos. is= 6

Multiplication of nos. is= 315

Division of nos. is= 1.400

Power is= 68122318582951682000.000

Square root 15 is= 3.873

Remainder is= 6.000