

## 5.DLL Program

### Execution:

1. javac B1.java
2. javac -h . B1.java
3. gcc -shared -fPIC -I/usr/lib/jvm/java-8-openjdk-amd64/include -I/usr/lib/jvm/java-8-openjdk-amd64/include/linux B1.c -o b1.so
4. java -Djava.library.path=.B1

### B1.java:

```
import java.io.*;
import java.util.*;

class B1 {
    static {
        System.load("/home/anandkale/Desktop/Sample/dll/b1.so");
    }

    private native int add(int a, int b);
    private native int sub(int a, int b);
    private native int mult(int a, int b);
    private native int div(int a, int b);

    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        int a, b,ch;

        System.out.println("\nEnter value of a : ");
        a = sc.nextInt();

        System.out.println("\nEnter value of b : ");
        b = sc.nextInt();

        do
        {
            System.out.println("\nEnter YOUR CHOICE : ");
            ch = sc.nextInt();
            switch(ch)
            {
```

```

case 1 : new B1().add(a,b);
break;
case 2 : new B1().sub(a,b);
break;
case 3 : new B1().mult(a,b);
break;
case 4 : new B1().div(a,b);
break;
default : System.out.println("Your choice is wrong.");
}
}while(ch<5);
}
}

```

#### **B1.h:**

```

/* DO NOT EDIT THIS FILE - it is machine generated */
#include <jni.h>
/* Header for class B1 */

#ifndef _Included_B1
#define _Included_B1
#ifdef __cplusplus
extern "C" {
#endif
/*
 * Class:    B1
 * Method:   add
 * Signature: (I)I
 */
JNIEXPORT jint JNICALL Java_B1_add
    (JNIEnv *, jobject, jint, jint);

```

```
/*  
 * Class:   B1  
 * Method:  sub  
 * Signature: (I)I  
 */  
JNIEXPORT jint JNICALL Java_B1_sub  
    (JNIEnv *, jobject, jint, jint);
```

```
/*  
 * Class:   B1  
 * Method:  mult  
 * Signature: (I)I  
 */  
JNIEXPORT jint JNICALL Java_B1_mult  
    (JNIEnv *, jobject, jint, jint);
```

```
/*  
 * Class:   B1  
 * Method:  div  
 * Signature: (I)I  
 */  
JNIEXPORT jint JNICALL Java_B1_div  
    (JNIEnv *, jobject, jint, jint);
```

```
#ifdef __cplusplus  
}  
#endif  
#endif
```

**B1.c:**

```
#include <jni.h>

#include <stdio.h>

#include "B1.h"

JNIEXPORT int JNICALL Java_B1_add(JNIEnv *env, jobject obj, jint a, jint b)
{
    printf("\n%d + %d = %d\n",a,b,(a+b));
    return;
}

JNIEXPORT int JNICALL Java_B1_sub(JNIEnv *env, jobject obj, jint a, jint b)
{
    printf("\n%d - %d = %d\n",a,b,(a-b));
    return;
}

JNIEXPORT int JNICALL Java_B1_mult(JNIEnv *env, jobject obj, jint a, jint b)
{
    printf("\n%d * %d = %d\n",a,b,(a*b));
    return;
}

JNIEXPORT int JNICALL Java_B1_div(JNIEnv *env, jobject obj, jint a, jint b)
{
    printf("\n%d / %d = %d\n",a,b,(a/b));
    return;
}
```

## Output:

```
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anandkalepop-os:~/Desktop/sample/dll$ javac B1.java
anandkalepop-os:~/Desktop/sample/dll$ javac -h . B1.java
anandkalepop-os:~/Desktop/sample/dll$ gcc -shared -fPIC -I/usr/lib/jvm/java-8-openjdk-amd64/include -I/usr/lib/jvm/java-8-openjdk-amd64/include/linux B1.c -o b1.so
B1.c: In function 'Java_B1_add':
B1.c:7:1: warning: 'return' with no value, in function returning non-void
   7 | return;
     | ^~~~~~
B1.c:4:23: note: declared here
   4 | JNIEXPORT int JNICALL Java_B1_add(JNIEnv *env, jobject obj, jint a, jint b)
     |                               ^~~~~~
B1.c: In function 'Java_B1_sub':
B1.c:12:1: warning: 'return' with no value, in function returning non-void
   12 | return;
     | ^~~~~~
B1.c:9:23: note: declared here
   9 | JNIEXPORT int JNICALL Java_B1_sub(JNIEnv *env, jobject obj, jint a, jint b)
     |                               ^~~~~~
B1.c: In function 'Java_B1_mult':
B1.c:17:1: warning: 'return' with no value, in function returning non-void
   17 | return;
     | ^~~~~~
B1.c:14:23: note: declared here
   14 | JNIEXPORT int JNICALL Java_B1_mult(JNIEnv *env, jobject obj, jint a, jint b)
     |                               ^~~~~~
B1.c: In function 'Java_B1_div':
B1.c:22:1: warning: 'return' with no value, in function returning non-void
   22 | return;
     | ^~~~~~
B1.c:19:23: note: declared here
   19 | JNIEXPORT int JNICALL Java_B1_div(JNIEnv *env, jobject obj, jint a, jint b)
     |                               ^~~~~~
anandkalepop-os:~/Desktop/sample/dll$ java -Djava.library.path=. B1
Enter value of a :
20
Enter value of b :
10
ENTER YOUR CHOICE :
1
20 * 10 = 30
ENTER YOUR CHOICE :
2
20 / 10 = 2
ENTER YOUR CHOICE :
```

```
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B1.c:19:23: note: declared here
   19 | JNIEXPORT int JNICALL Java_B1_div(JNIEnv *env, jobject obj, jint a, jint b)
     |                               ^~~~~~
B1.c: In function 'Java_B1_mult':
B1.c:17:1: warning: 'return' with no value, in function returning non-void
   17 | return;
     | ^~~~~~
B1.c:14:23: note: declared here
   14 | JNIEXPORT int JNICALL Java_B1_mult(JNIEnv *env, jobject obj, jint a, jint b)
     |                               ^~~~~~
B1.c: In function 'Java_B1_div':
B1.c:22:1: warning: 'return' with no value, in function returning non-void
   22 | return;
     | ^~~~~~
B1.c:19:23: note: declared here
   19 | JNIEXPORT int JNICALL Java_B1_div(JNIEnv *env, jobject obj, jint a, jint b)
     |                               ^~~~~~
anandkalepop-os:~/Desktop/sample/dll$ java -Djava.library.path=. B1
Enter value of a :
20
Enter value of b :
10
ENTER YOUR CHOICE :
1
20 * 10 = 30
ENTER YOUR CHOICE :
2
20 / 10 = 2
ENTER YOUR CHOICE :
3
20 * 10 = 200
ENTER YOUR CHOICE :
4
20 / 10 = 2
ENTER YOUR CHOICE :
5
Your choice is wrong.
anandkalepop-os:~/Desktop/sample/dll$
```