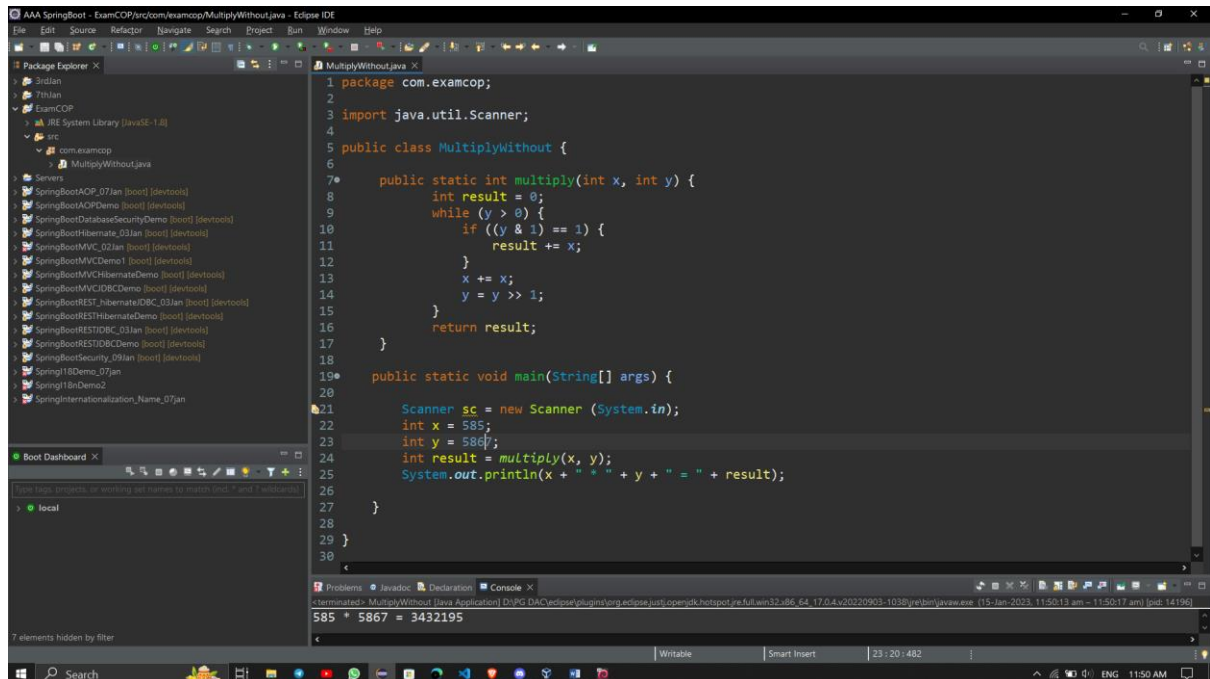


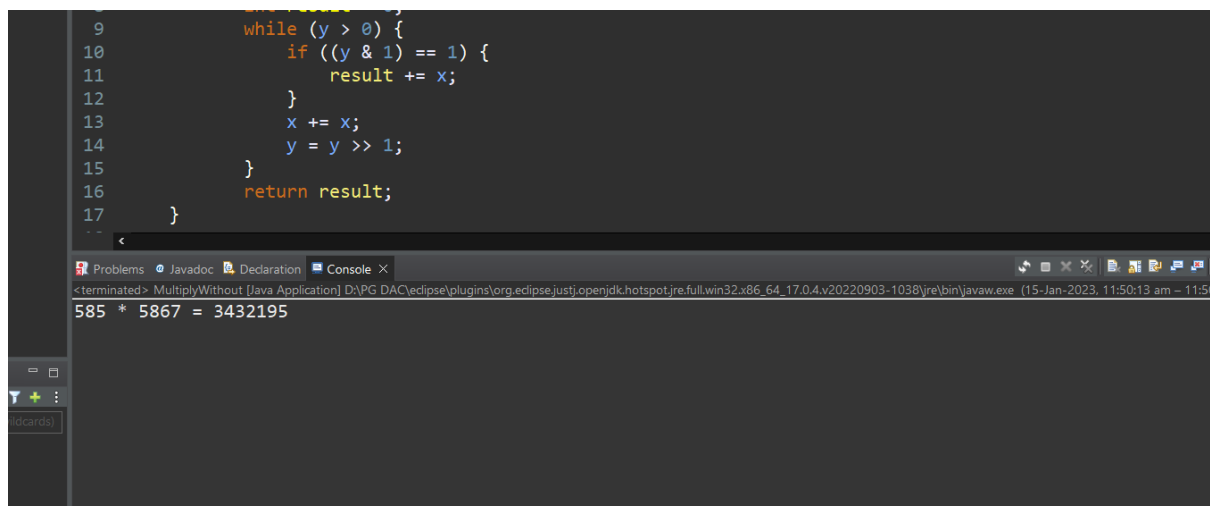
1. Write a program to multiply two given integers without using the multiply operator (\*).



```
1 package com.examcop;
2
3 import java.util.Scanner;
4
5 public class MultiplyWithout {
6
7     public static int multiply(int x, int y) {
8         int result = 0;
9         while (y > 0) {
10             if ((y & 1) == 1) {
11                 result += x;
12             }
13             x += x;
14             y = y >> 1;
15         }
16         return result;
17     }
18
19     public static void main(String[] args) {
20
21         Scanner sc = new Scanner(System.in);
22         int x = 585;
23         int y = 5867;
24         int result = multiply(x, y);
25         System.out.println(x + " * " + y + " = " + result);
26
27     }
28
29 }
30
```

585 \* 5867 = 3432195

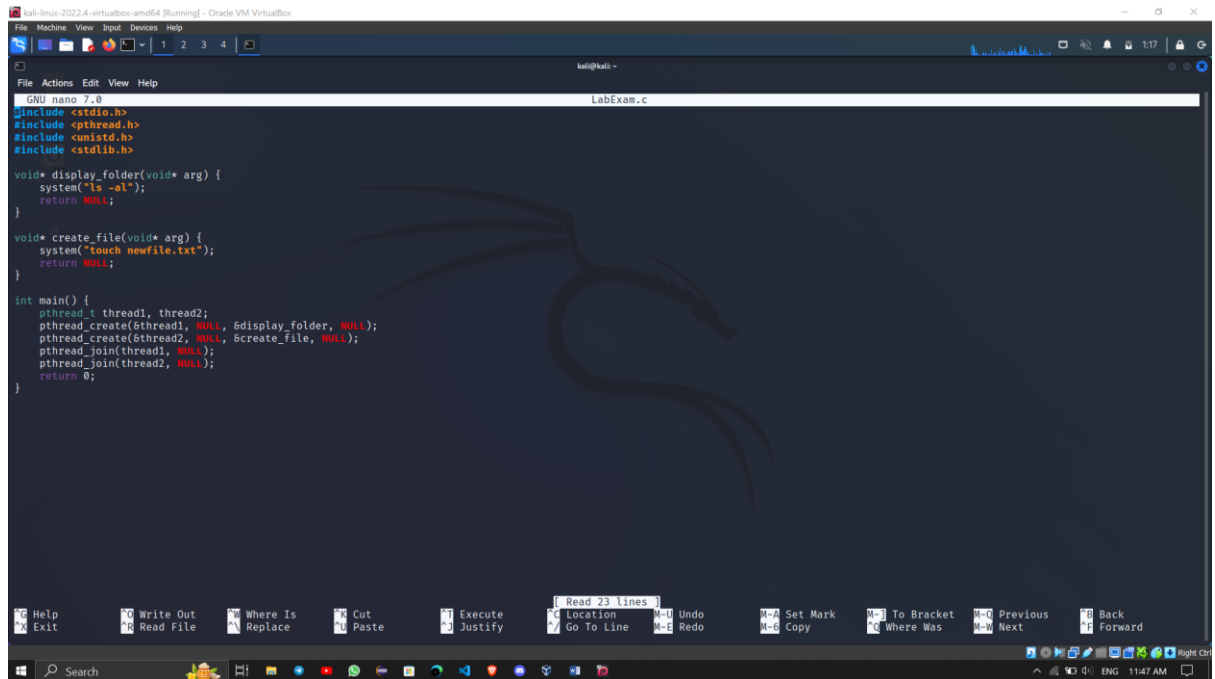
Output:



```
9         while (y > 0) {
10             if ((y & 1) == 1) {
11                 result += x;
12             }
13             x += x;
14             y = y >> 1;
15         }
16         return result;
17     }
18
19 }
20
```

585 \* 5867 = 3432195

2. Write a C program which Creates two threads where one displays contents of current folder and another thread creates a file.

A screenshot of a Kali Linux virtual machine running in Oracle VM VirtualBox. The terminal window shows the nano text editor editing a file named 'LabExam.c'. The code is a C program that uses pthreads to create two threads: 'display\_folder' and 'create\_file'. The 'display\_folder' function calls 'system("ls -al")', and the 'create\_file' function calls 'system("touch newfile.txt")'. The main function creates these threads and joins them before returning 0. The nano editor interface includes a menu bar (File, Actions, Edit, View, Help), a status bar (kali@kali: -), and a bottom toolbar with various editing and navigation shortcuts. The background of the terminal is dark blue with a faint dragon logo.

```
GNU nano 7.0 LabExam.c
#include <stdio.h>
#include <pthread.h>
#include <unistd.h>
#include <stdlib.h>

void* display_folder(void* arg) {
    system("ls -al");
    return NULL;
}

void* create_file(void* arg) {
    system("touch newfile.txt");
    return NULL;
}

int main() {
    pthread_t thread1, thread2;
    pthread_create(&thread1, NULL, &display_folder, NULL);
    pthread_create(&thread2, NULL, &create_file, NULL);
    pthread_join(thread1, NULL);
    pthread_join(thread2, NULL);
    return 0;
}
```

OutPut:

```
(kali㉿kali)-[~]  
$ nano LabExam.c
```

```
(kali㉿kali)-[~]  
$ gcc LabExam.c
```

```
(kali㉿kali)-[~]  
$ ./a.out
```

```
total 472  
drwx----- 19 kali kali 4096 Jan 15 01:16 .  
drwxr-xr-x 5 root root 4096 Dec 10 05:43 ..  
-rw-r--r-- 1 kali kali 273 Dec 16 10:10 1612_Q1.c  
-rwxr-xr-x 1 kali kali 16144 Jan 15 01:16 a.out  
drwxr-xr-x 2 kali kali 4096 Dec 16 07:52 assignment  
drwxr-xr-x 2 kali kali 4096 Dec 10 03:51 assignment10dec  
drwxr-xr-x 2 kali kali 4096 Dec 9 05:12 assign.sh  
-rw-r--r-- 1 kali kali 220 Dec 5 08:43 .bash_logout  
-rw-r--r-- 1 kali kali 5551 Dec 5 08:43 .bashrc  
-rw-r--r-- 1 kali kali 3526 Dec 5 08:43 .bashrc.original  
drwxr-xr-x 7 kali kali 4096 Dec 9 00:24 .cache  
-rw-r--r-- 1 kali kali 137 Dec 17 10:11 common.h  
drwxr-xr-x 12 kali kali 4096 Dec 9 00:24 .config  
drwxr-xr-x 2 kali kali 4096 Dec 8 10:51 Desktop  
-rw-r--r-- 1 kali kali 35 Dec 8 10:53 .dmrc  
drwxr-xr-x 2 kali kali 4096 Dec 8 10:51 Documents  
drwxr-xr-x 2 kali kali 4096 Dec 8 10:51 Downloads  
-rw-r--r-- 1 kali kali 11759 Dec 5 08:43 .face  
lrwxrwxrwx 1 kali kali 5 Dec 5 08:43 .face.icon → .face  
drwxr-xr-x 2 kali kali 4096 Dec 10 04:56 file1  
drwx----- 3 kali kali 4096 Dec 8 10:51 .gnupg  
-rwxr-xr-x 1 kali kali 16000 Dec 16 09:55 Hello  
-rw-r--r-- 1 kali kali 132 Dec 16 09:55 hello.c  
-rw----- 1 kali kali 0 Dec 8 10:51 .ICEauthority  
drwxr-xr-x 3 kali kali 4096 Dec 5 08:43 .java  
-rw-r--r-- 1 kali kali 483 Jan 15 01:16 LabExam.c  
drwx----- 3 kali kali 4096 Dec 8 10:51 .local  
-rw-r--r-- 1 kali kali 212 Dec 17 09:41 mq-1.c  
-rw-r--r-- 1 kali kali 421 Dec 17 10:02 mq-5a.c  
-rw-r--r-- 1 kali kali 323 Dec 17 10:37 mq-5b.c  
-rw-r--r-- 1 kali kali 280 Dec 17 10:42 mq-5c.c  
-rwxr-xr-x 1 kali kali 16008 Dec 17 09:41 msgcreate  
-rwxr-xr-x 1 kali kali 16056 Dec 17 10:43 msgdel  
-rwxr-xr-x 1 kali kali 16056 Dec 17 10:37 msgrcd  
-rwxr-xr-x 1 kali kali 16112 Dec 17 10:11 msgsend  
drwxr-xr-x 2 kali kali 4096 Dec 8 10:51 Music  
drwxr-xr-x 2 kali kali 4096 Dec 8 10:51 Pictures  
-rwxr-xr-x 1 kali kali 16096 Dec 17 10:54 pipe  
-rw-r--r-- 1 kali kali 239 Dec 17 10:54 pipe.c
```

```
-rw-r--r-- 1 kali kali 1024 Dec 17 10:55 .pipe.c.swp
-rw-r--r-- 1 kali kali 807 Dec 5 08:43 .profile
drwxr-xr-x 2 kali kali 4096 Dec 8 10:51 Public
-rwxr-xr-x 1 kali kali 16008 Dec 16 07:56 Q1_1612
-rw-r--r-- 1 kali kali 273 Dec 16 10:11 Que3_1612.c
-rw-r--r-- 1 kali kali 273 Dec 16 10:17 Que4_1612.c
-rw-r--r-- 1 kali kali 277 Dec 16 10:29 Que4a_1612.c
-rw-r--r-- 1 kali kali 265 Dec 16 10:42 Que4b_1612.c
-rw-r--r-- 1 kali kali 392 Dec 16 11:37 Que4c_1612.c
-rw-r--r-- 1 kali kali 74 Dec 16 10:08 Que4.c.save
-rw-r--r-- 1 kali kali 691 Dec 17 08:44 Que4d_1612.c
-rw-r--r-- 1 kali kali 763 Dec 17 09:10 Que4e_1612.c
-rwxr-xr-x 1 kali kali 16008 Dec 16 10:12 shmcreate
-rwxr-xr-x 1 kali kali 16056 Dec 16 11:38 shmdelete
-rwxr-xr-x 1 kali kali 16112 Dec 17 08:44 shmdstat
-rwxr-xr-x 1 kali kali 16112 Dec 16 10:42 shmread
-rwxr-xr-x 1 kali kali 16160 Dec 17 09:11 shmstat
-rwxr-xr-x 1 kali kali 16056 Dec 16 10:30 shmwrite
-rw-r--r-- 1 kali kali 0 Dec 9 03:56 .sudo_as_admin_successful
drwxr-xr-x 2 kali kali 4096 Dec 8 10:51 Templates
-rw-r--r-- 1 kali kali 4 Jan 15 00:56 .vboxclient-clipboard.pid
-rw-r--r-- 1 kali kali 4 Jan 15 00:56 .vboxclient-display-svgx-x11.pid
-rw-r--r-- 1 kali kali 4 Jan 15 00:56 .vboxclient-draganddrop.pid
-rw-r--r-- 1 kali kali 4 Jan 15 00:56 .vboxclient-seamless.pid
-rw-r--r-- 1 kali kali 7 Jan 15 00:56 .vboxclient-vmsvga-session-tty7.pid
drwxr-xr-x 2 kali kali 4096 Dec 8 10:51 Videos
-rw-r--r-- 1 kali kali 49 Jan 15 00:56 .Xauthority
-rw-r--r-- 1 kali kali 9282 Jan 15 00:56 .xsession-errors
-rw-r--r-- 1 kali kali 9281 Jan 14 08:13 .xsession-errors.old
-rw-r--r-- 1 kali kali 2354 Jan 14 08:15 .zsh_history
-rw-r--r-- 1 kali kali 10877 Dec 5 08:43 .zshrc
```