



SISTEMAS OPERATIVOS I

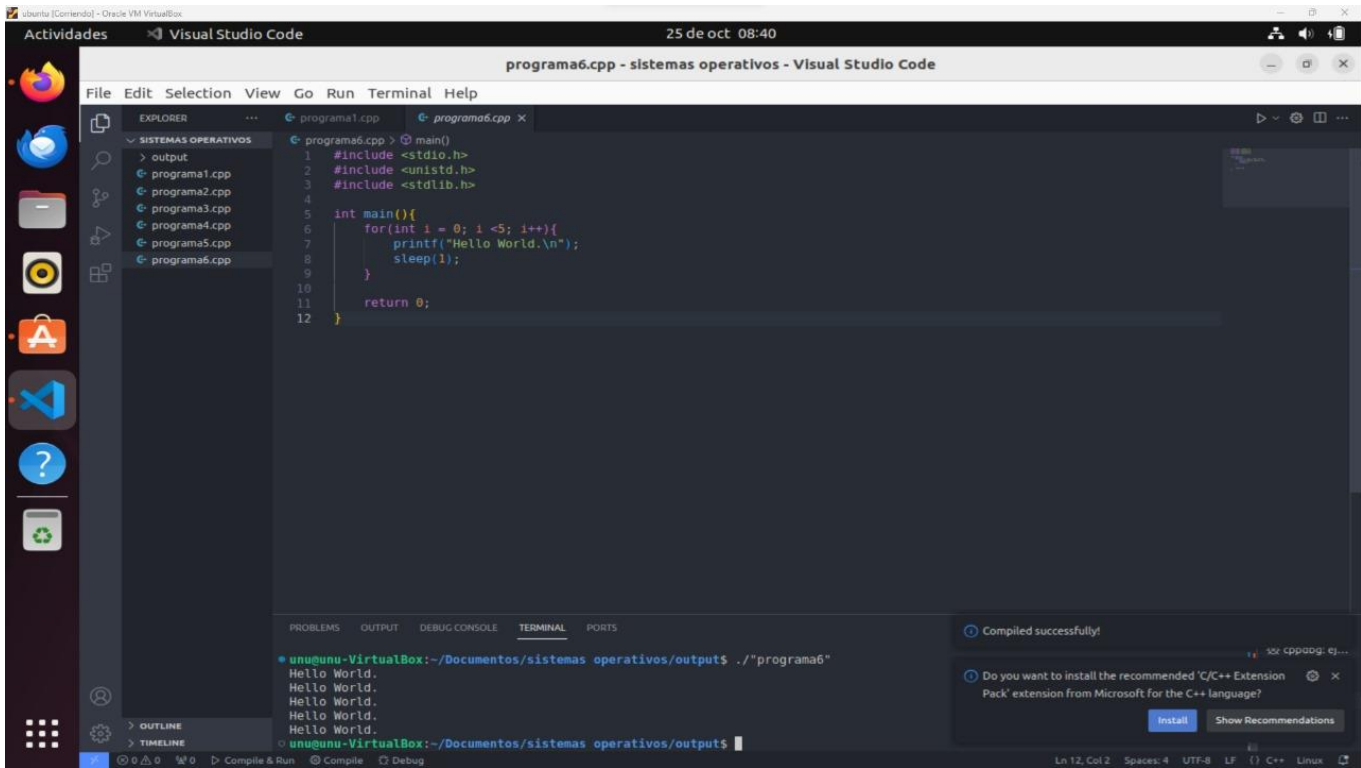
FCC, BUAP

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MANEJO DE SEÑALES

SALIDA DE CÓDIGO



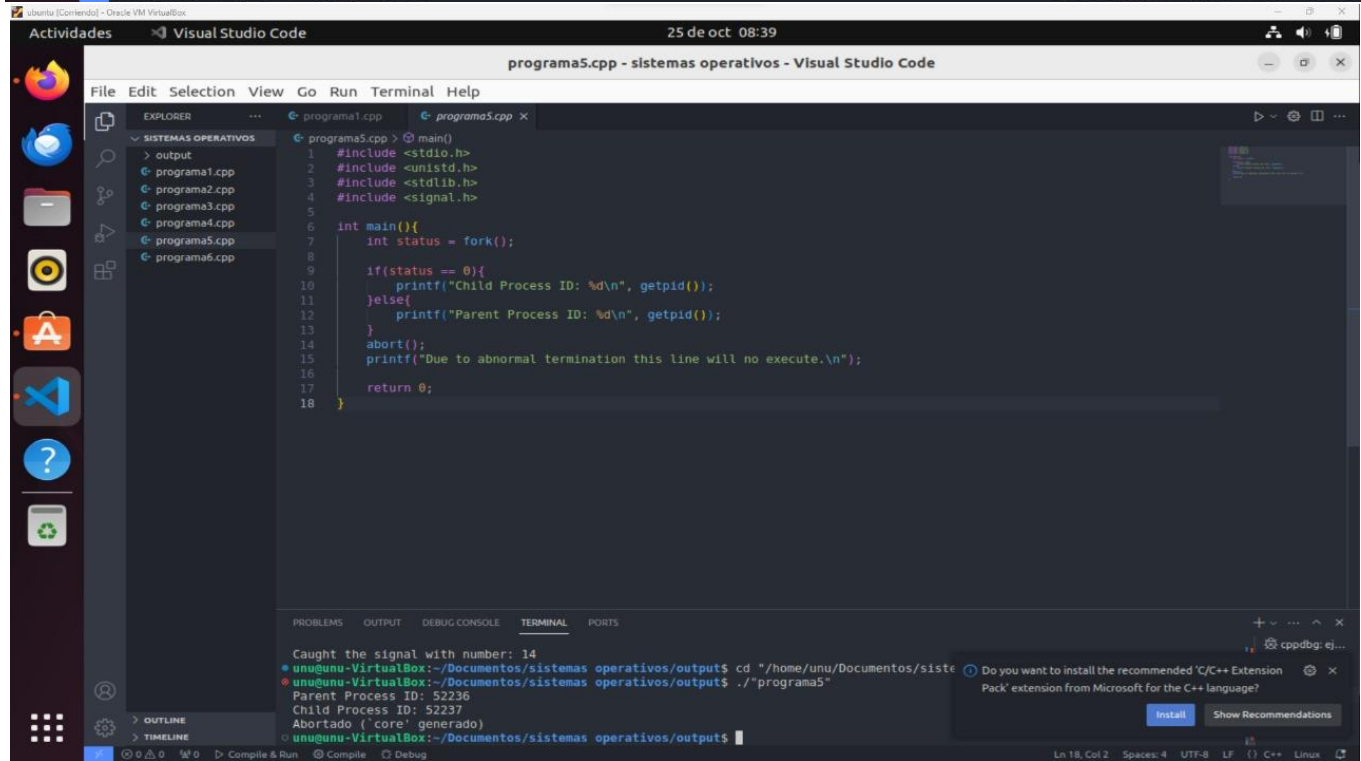
Visual Studio Code interface showing the execution of `programa6.cpp`. The code is a simple C++ program that prints "Hello World" five times using a loop and `sleep(1)`.

```
1 #include <stdio.h>
2 #include <unistd.h>
3 #include <stdlib.h>
4
5 int main(){
6     for(int i = 0; i < 5; i++){
7         printf("Hello World.\n");
8         sleep(1);
9     }
10
11     return 0;
12 }
```

The terminal output shows the program running successfully, printing "Hello World." five times.

```
un@ununu-VirtualBox:~/Documentos/sistemas operativos/output$ ./"programa6"
Hello World.
Hello World.
Hello World.
Hello World.
Hello World.
```

Compilation status: Compiled successfully!



Visual Studio Code interface showing the execution of `programa5.cpp`. The code demonstrates process forking and printing process IDs.

```
1 #include <stdio.h>
2 #include <unistd.h>
3 #include <stdlib.h>
4 #include <signal.h>
5
6 int main(){
7     int status = fork();
8
9     if(status == 0){
10         printf("Child Process ID: %d\n", getpid());
11     }else{
12         printf("Parent Process ID: %d\n", getpid());
13     }
14     abort();
15     printf("Due to abnormal termination this line will no execute.\n");
16
17     return 0;
18 }
```

The terminal output shows the program running, printing the Child Process ID (52237) and the Parent Process ID (52236). The program then aborts.

```
un@ununu-VirtualBox:~/Documentos/sistemas operativos/output$ cd "/home/unu/Documentos/sistemas operativos/output"
un@ununu-VirtualBox:~/Documentos/sistemas operativos/output$ ./"programa5"
Caught the signal with number: 14
Parent Process ID: 52236
Child Process ID: 52237
Abortado ('core' generado)
```

Compilation status: Compiled successfully!

Ubuntu [Corriendo] - Oracle VM VirtualBox

Visual Studio Code

25 de oct 08:39

programa4.cpp - sistemas operativos - Visual Studio Code

File Edit Selection View Go Run Terminal Help

EXPLORER

SISTEMAS OPERATIVOS

- output
- programa1.cpp
- programa2.cpp
- programa3.cpp
- programa4.cpp
- programa5.cpp
- programa6.cpp

```
1 #include <unistd.h>
2 #include <signal.h>
3
4 int main(void){
5     alarm(10);
6
7     signal(SIGALRM, SIGNAL_HANDLER);
8
9     if(alarm(7) > 0){
10         printf("An alarm has been set already.\n");
11     }
12
13     pause();
14
15     printf("You will not see this text.\n");
16
17     return 1;
18 }
19
20 void SIGNAL_HANDLER(int signo){
21     printf("Caught the signal with number: %d\n", signo);
22     exit(0);
23 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

The Alarm has Raised.
• unu@unu-VirtualBox:~/Documentos/sistemas operativos/output\$ cd ~/home/unu/Documentos/siste
./"programa4"
• unu@unu-VirtualBox:~/Documentos/sistemas operativos/output\$./"programa4"
An alarm has been set already.
Caught the signal with number: 14
• unu@unu-VirtualBox:~/Documentos/sistemas operativos/output\$

Compiled successfully!

Do you want to install the recommended 'C/C++ Extension Pack' extension from Microsoft for the C++ language?

Install Show Recommendations

Ln 27, Col 2 Spaces: 4 UTF-8 LF {} C++ Linux

Ubuntu [Corriendo] - Oracle VM VirtualBox

Visual Studio Code

25 de oct 08:38

programa3.cpp - sistemas operativos - Visual Studio Code

File Edit Selection View Go Run Terminal Help

EXPLORER

SISTEMAS OPERATIVOS

- output
- programa1.cpp
- programa2.cpp
- programa3.cpp
- programa4.cpp
- programa5.cpp
- programa6.cpp

```
1 #include <unistd.h>
2 #include <signal.h>
3
4 void raisedAlarm(int sig);
5
6 int main(){
7     alarm(5);
8
9     signal(SIGALRM, raisedAlarm);
10
11     while(1){
12         printf("Hello World...\n");
13         sleep(1);
14     }
15     return 0;
16 }
17
18 void raisedAlarm(int sig){
19     printf("The Alarm has Raised.\n");
20     exit(0);
21 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Hello World...!
Hello World...!
Hello World...!
Hello World...!
Hello World...!
The Alarm has Raised.
• unu@unu-VirtualBox:~/Documentos/sistemas operativos/output\$

Compiled successfully!

Do you want to install the recommended 'C/C++ Extension Pack' extension from Microsoft for the C++ language?

Install Show Recommendations

Ln 23, Col 2 Spaces: 4 UTF-8 LF {} C++ Linux

Visual Studio Code interface showing the code for `programa2.cpp` and the terminal output.

```
#include <stdio.h>
#include <stdlib.h>
#include <signal.h>

void SIGNAL_HANDLER(int);

int main(){
    signal(SIGINT, SIGNAL_HANDLER);
    printf("Raising a new signal\n");
    int status = raise(SIGINT);
    if(status != 0){
        printf("signal caught and handled gracefully\n");
    }
    return 0;
}

void SIGNAL_HANDLER(int signal){
    printf("signal caught and handled gracefully\n");
}
```

Terminal output:

```
hellor world...!
^CCaught signal 2, coming out from Program
unu@unu-VirtualBox:~/Documentos/sistemas operativos/output$ cd "/home/unu/Documentos/siste
unu@unu-VirtualBox:~/Documentos/sistemas operativos/output$ ./"programa2"
Raising a new signal
signal caught and handled gracefully
unu@unu-VirtualBox:~/Documentos/sistemas operativos/output$
```

Notification: Compiled successfully!

Notification: Do you want to install the recommended 'C/C++ Extension Pack' extension from Microsoft for the C++ language?

Visual Studio Code interface showing the code for `programa1.cpp` and the terminal output.

```
#include <stdio.h>
#include <unistd.h>
#include <stdlib.h>
#include <signal.h>

void CUSTOM_HANDLER(int);

int main(){
    signal(SIGINT, CUSTOM_HANDLER);

    while(1){
        printf("hellor world...!\n");
        sleep(1);
    }
    return 0;
}

void CUSTOM_HANDLER(int signum){
    printf("Caught signal %d, coming out from Program\n", signum);
    exit(1);
}
```

Terminal output:

```
hellor world...!
hellor world...!
hellor world...!
hellor world...!
hellor world...!
hellor world...!
```

Notification: Do you want to install the recommended 'C/C++ Extension Pack' extension from Microsoft for the C++ language?

MAPA MENTAL

