PROCESS CREATION STATES

OPERATING SYSTEMS LABS

LAB TASK # 06

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Submitted to

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Question Number : 01

Code:

```c
#include <stdio.h>
#include <sys/types.h>
#include <unistd.h>

int main()
{
        fork();
        fork();
        fork();
        fork();
        fork();
        fork();
        fork();
        fork();

        printf("Hello");

return 0;
}
```

Output:

```
(base) transient@arewas-thinkpad-x230:~$ touch task.c
(base) transient@arewas-thinkpad-x230:~$ gcc task.c
(base) transient@arewas-thinkpad-x230:~$ ./a.out
HelloHelloHelloHelloHello(base) transient@arewas-thinkpad-x230:~$ HelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHell
oHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHelloHello
(base) transient@arewas-thinkpad-x230:~$ ▮
```

i) How many processes will be created?

Ans) Number of Processes = 2^n , where n is number of fork system calls, here n = 8 so:

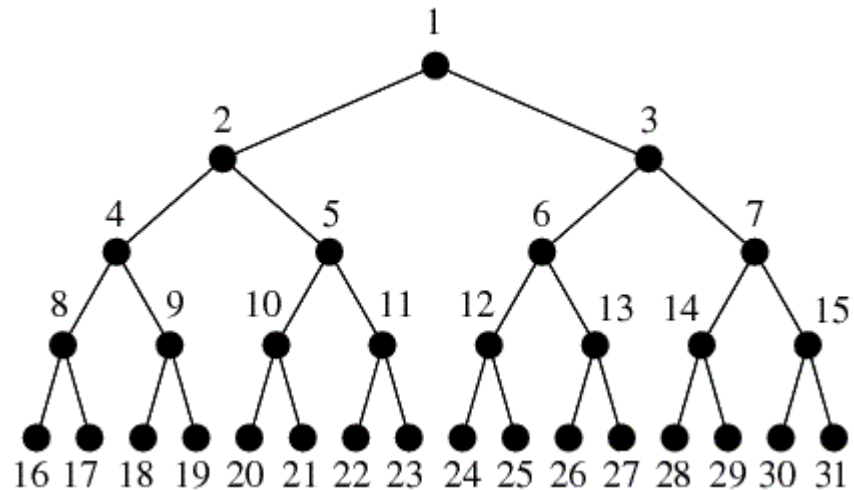Number of Processes = 2^8= **256.**

ii) How many times "Hello" word will be printed on the screen after code execution?

Ans) Hello will be printed **256 times.**

128 times for parent processes and 128 times for child processes.

iii) Create tree hierarchy for this pseudocode?

Ans) The tree hierarchy for first four processes is given below:

Question Number 2:

Code:

```c
#include <stdio.h>
#include <sys/types.h>
#include <unistd.h>
int main(){
    pid_t pid;
    pid = fork();
    if ( pid == 0){
        fork();
        fork();
        printf("Hello");
    }
    else{
        fork();
        printf("Hello");
    }
```

return 0;

}

Output:


```
transient@arewas-thinkpad-x230: ~
File  Edit  View  Search  Terminal  Help
(base) transient@arewas-thinkpad-x230:~$ ./a.out
HelloHelloHelloHelloHelloHello(base) transient@arewas-thinkpad-x230:~$
```

i) How many processes will be created?

Ans)Six processes will be created.

ii) How many times "Hello" word will be printed on the screen after code execution?

Ans) Hello will be printed six times.

iii) Create tree hierarchy for this pseudocode?