1.

Process 6:

Child of process 4

Created by fork() in the last line

Process 5:

(child of process 2)

Created by last line fork()

Process 2 reaches it after if condition

Process 4:

(child of process 2)

Created by

if(pid == 0) fork()

Process 2:

(created by pid = fork())

(child of process 1)

Process 3:

(created by fork() in the last line)

(child of process 1)

Process 1:

(original) process)

1. 6 processes are created.
2. 2 threads are created in process 2 and process 4. Process 2 enters the if condition if(pid == 0). After fork(), there are two processes: process 2 and process 4. Only those two processes go through the line pthread\_create(…).

2. I created 27 threads.

Thread with index 0 to 8 check if each subgrid is valid.

Thread with index 9 to 17 check if each column is valid.

Thread with index 18 to 26 check if each row is valid.

My parameters\* data passes startRow, startCol, numOfRows, numOfCols, threadNum to each thread. Inside two for loops, use count[] to store how many times numbers 1 to 9 appear in that small region. If all of them appear exactly once, that small region is valid. If valid, stores 1 in the global array results[] with index threadNum. Otherwise, stores 1.

Screenshots:

