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1. The system call allows the system or computer to run in the privileged mode whereas a user function does not.

2. The states are: new, ready, waiting, running, and finished.

3. Ready. waiting. terminated

4. The bit is representative of kernel mode. It protects the system by having every system call checking for validity. Each request is checked by the system call and so long as it's valid it allows it. This protects the system from invalid requests.

5. The information held is Process State, Program count, Registers, Scheduling information, memory management, accounting information, and I/O status.

6.
```
int main() {
        int parent = x ; //assuming x is a process
        int child = fork() ;
        int p2 = getpid(child);
        if(child<0){
                printf("%d Cannot create process");
                return 1;
        }
        wait(parent);
        doWork(child);

        exit(0);

        exec(parent);
        printf("%d This is the parent, my pid is ", getpid(parent));
        printf("%d child with pid ", getpid(p2));
        printf("%d is completed.");
}

void doWork(p){
        exec(p)
        printf("%d This is the child process, and my pid is ", getpid(p));
}
```