Lab Requirement 3 - Process Management

Requirement

Write a C program that does the following!

Parent Process

1. **Read**s a value *n* from the user.
2. **Fork**s *n* children.
3. **Wait**s to receive exit codes from the *n* children and **print**s them.
4. **Terminate**s

Important Note that points 2 and 3 are non-overlapping! That is, the parent should fork *n* children THEN wait for *n* exit codes. It should NOT just fork one child and wait for its exit code and repeat that *n* times.

Each Child Process

1. **Print**s the following message for the user,
   `I am the child number` *X* `and my pid is` *P* `and my parent pid is` *PP*
   where *X* is its order of creation among the *n* children, *P* is its pid and *PP* is its parent pid.
2. **Create**s 1 grandchild.
3. **Wait**s to receive exit code from its own grandchild and **print**s them.
4. **Send**s *X* (its order of creation) as its exit code to its parent.

Each Grandchild Process

1. **Print**s the following message for the user,
   `I am the grandchild with pid` *P* `and my parent pid is` *PP*
   where *P* is its pid and *PP* is its parent pid
2. **Send**s *X* (its parent's order of creation) as its exit code to its own direct parent.