

# The Octal Notation

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- The **number** that represents the permission in base-8 can be either a 3 or a 4-digit number with digits from 0 to 7. The leading zero (0) can be omitted.
- 0755 = 755 and 0644 = 644.
- **When a 3 digit number is used, the first digit represents the permissions of the file's owner, the second one the file's group, and the last one the permissions of the others class.**
- **r, w, and x** have their own **fixed** number value:
  - **r** (read) = **4**
  - **w** (write) = **2**
  - **x** (execute) = **1**
  - **-** (no permissions) = **0**
  - The permissions number of a specific user class is represented by the sum of the values of the permissions for that group.

# 0777 for directories

$0777 - 0002 = 0775$

$0666 - 0002 = 0664$

$0666 - \text{umask} = 0644 \Rightarrow \text{umaks} =$   
 $0022$