Operating Systems Lab
Assignment 01
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P18-0030
Section B

QUESTION 1:

#INCLUDE <STDIO.H>
This header file in included for standard Input and Output - on terminal as well as files. Some functions of this header file are *printf(), fopen(), fclose(), fprintf(), fscanf()* etc.

#INCLUDE <STDLIB.H>
When we have to do memory allocation or process allocation. It has some conversion functions like *atoi(),* mathematical functions like *div(),* process control functions like *system(),* sorting functions like *qsort()* etc.

#INCLUDE <UNISTD.H>
This header file provides access to POSIX compliant operating system API. *NULL* is defined in this header file. *Fork(), execv(), getpid(), getppid()* are also a part of this header file. Some operations related to file access mode are *o_rdonly()* for reading only, *o_rdwr()* for reading and writing, *o_wronly()* for writing only.

#INCLUDE <SYS/TYPES.H>
This header file is included when we are working with processes and threads. Some important datatypes are also a part of this header file; *pid_t* for storing process ids. *key_t* which is used in shared memory. *pthread_t* which is used in creating threads.

#INCLUDE <SYS/DIR.H>
This header file is included when we want to work with directories. C language has no support for directories so this header file is included. Some functions in this header file which also may be defined as macros are *opendir(), readdir(), closedir()* etc.

#INCLUDE <FCNTL.H>
This header file is included when we want to do operations on open file descriptor. When working with locks this header file is needed. Some functions related to locks are *f_rdlck()* is for shared or read lock, *f_unlck()* is for unlocking, *f_wrlck()* is for writing locks.

#INCLUDE <SYS/STAT.H>
This header file facilitates getting information about file attributes. It defines the structure of data returned by *stat(), fstat(), lstat()* Some functions in this header file are *fstat()* which is passed a file descriptor argument and returns attributes of that file, *stat()* and *lstat()* are passed filename as argument, if the file is link then *stat()* returns attributes of target of link whereas *lstat()* returns attributes of link.