

OPERATING SYSTEM ASSIGNMENT #3

The code is split in two files:

- Bank.c
- Def.h

The file bank.c is having all the executable code and the def.h is the file defining the functions and the variables that are used in the main C file. There are the following main functions in the bank.c file:

- inline void sleep_wake_it(int s_no,int w_no): This function puts the thread represented by “s_no” into the blocked state. The thread represented by “w_no” is removed from the blocked state and put in the ready state.
- Main(): This function creates all the threads, the customers, tellers, printer, guard and the scheduler threads. Then it gives the control to the timer thread and keeps waiting for it to exit.
- void initialize(): This function initializes all the global data structures used.
- void *f_customer(void *ptr): This function is the code for the customer. There are 200 such threads executing this function.
- void *f_guard(void *ptr): This has the code for the guard thread.
- void *f_timer(void *ptr): This function schedules the execution of the various threads.
- void *f_teller(void *ptr): This thread contains the code for the teller. There are 5 such threads executing this code.
- int convert_req_to_time(int req); This function maps the service type to the service time.
- void *f_rec_prntr(void *ptr): This is the code for the printer thread.
- void adjust_queue(int q_no): This is the function that actually does the work of balancing the queues. This function is called by the schedulerthread.
- void schedule_q(): This function is the scheduler thread.
- void print_q(): This function is doing the job of writing the current queue information into the log file.
- void guard_insert_q(int srvc_type,int c_id): This function is used to enter the customer thread id's in the queues inside the bank.