Siva Krishna Neppali (SXN180043)

CS 5348.003-Operating Systems and Concepts - Design Document (Project 3)

Overview:

In the original version of simos.exe, after executing some programs, their outputs are printed in "terminal.out". Now here terminal.out file is completely removed and not generated. After the changes that were done in "term.c", the output is now sent to be printed on individual Client window. Now the Client Prints whatever earlier used to be sent to terminal.out PID and other Print statement calls in the input Program.

Critical Design Updates:

Simos.h

---> Sockfd Added in PCB Struct
---> Sockfd used in Insert Term_IO function as argument
--->Client Request Handler and Queue struct definitions were added and thus S command and One_Submission were Disabled in Admin.c

CPU.C

--->Load, Add, Multiplication codes were added as operation on MBR and AC.
--->Ifgo conditional goto was added according to the given Definition in Project Document
--->Now the Print is handled by SockFd as reference and is handled by modified Insert Term_IO Function which has Sockfd as one of its argument.
--->Sleep is Defined as Adding a Timer Event

System.C

--->Now Client Submissions are handled by Different Functions than earlier one
--->As this is a Client-Server Model, Client Request Handler functions now will take care of the Programs submitted from Different Clients.
--->start and End Terminal Functions Will now be Sending the results to the client According to the Sockfd.

Submit.c (Here Server and Client Programs are taken from the Posted Code)

--->Now the submitted programs from Different Clients are Handled By Client Request Handler and sending result to the client is now done from term.c
--->The received Input File from Client is Taken and sent to Submit_Process along with Sockfd which was earlier done by One_Submission function

Process.c

--->Context out Code was added and Required Registers were saved according to the PID, Same as in the Context In Defined Above.
--->Code for Idle Process is added following the code for Running of Regular Process.
--->Submit_Process function had now Sockfd as another argument.

Term.C

--->Now the Output of Each Print Statement is sent back to the Client with Reference of Sockfd
--->Semaq now Waits on Empty Terminal Queue without Busy looping and it is only signaled when a process is Inserted in TermIO Queue and is also used to Signal Termination of the Server.
--->Mutex is used for Mutual Exclusive Access to Terminal Queue in Insert_TermIO function (which is called by Main Thread and adds to the Terminal Queue) and Handle_TermIO which removes a Job From Terminal Queue and calls Terminal_Output function which then Sends that to Client with Client Sockfd as Reference.

Client.c

--->Client_Id argument is now completely Removed for reference purpose.
--->The Result from the Server is received by the client until the Process Completed successfully statement is sent by the Process.c Through the server to the Client.
--->The connection on Client Side is completely Terminated When a nullfile is sent to the server which is taken as a reference on Server Side to Close Sockfd.