भारतीय प्रौद्योगिकी संस्थान तिरुपति
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CS3500 Operating Systems Lab3

1. (10 marks) Folder name is rollnumber_lab3. Important file to use for this lab: resched.c. Save a copy of main.c as lab3a.c, and save outside xinu folder for backup. Implement lab3a.c with the following. Create a 3 dummy processes each of them running on infinite loop doing nothing, with same priority number (less than 40). Print (in the shell) the process names that are associated in the context switch.

2. (30 marks) Same folder name. Move lab3a.c outside of xinu folder, create a copy of main.c as lab3b.c inside systems folder, and implement the following: For the same 3 dummy processes assign three different priority numbers (less than 40), respectively. Create a random scheduler, that randomly schedules processes every time. The major steps are as follows:

   (a) Create a random number between 1 and total prirority number.

   (b) If priority numbers of A, B, and C are 10, 20, and 30. Then total priority number is 60. If a random number is generated between 1 and 10 choose process A. If betweeen 11 and 30 then choose Process B. If between 31 and 60, then choose process C.

   (c) Run the scheduler for relatively longer time to see if processes are of scheduled randomly through simulation: Run the program and keep track of context switch messages, compute the simulated probabilities and validate with the theoretical ones.

Deliverables: (10 marks) Create readme.txt with following details: Your name and roll number, steps you had followed in implementing each of the problems of Problem1 and Problem2. Submit your custom lab3 xinu folder, along with lab3a.c , lab3bf.c (both outside of xinu folder), and readme.txt outside of xinu folder in compressed form.