

Course COMP-8567  
Instructor Dr. B. Boufama  
Assignment 06  
Due date Monday August 3, 11.59pm

Write a C program, call it `diceGame`, to simulate a dice game between three players (processes) supervised by a referee (process). The three players are named TATA, TITI and TOTO. Unlike example 11 from chapter 6, these 4 processes should use a binary file, to store total scores. In particular, the main function, run by the referee, should have the following steps:

- Read the winning score from the user.
- Create a read/write binary file, call it *sharedFile.bin*, before any fork, and write three zero-integers using write. The file *sharedFile.bin* is like a 3-integer array, where first integer is the total of TATA, the second one is the total of TITI and the third one is the total of TOTO.
- Create the three players (processes) and each player should run the same function called **player(char \*name, int playerId, int fd)** (fd is the file descriptor)
- Make the players play in order: TATA, TITI then TOTO
- Each player, plays the dice, prints its own name, the obtained dice score, adds it to total in **sharedFile.bin**, sleeps for 2 seconds and signals the referee before pausing
- When a player has finished, the referee reads the new totals from *sharedFile.bin*, prints the player's name, its total points so far and sleeps for 2 seconds. If total exceeds winning score, the referee prints the name of winning player with its total score and kills all players and itself using **kill()**.

#### Hints:

- Each player can use `lseek()` to position its reading and writing at the right offset. For example, `lseek(fd, SEEK_SET, 0)` is for TATA and `lseek(fd, SEEK_SET, sizeof(int))` is for TITI
- Each player should first read its old score, update it and write the new score at the same file offset, to override the old score.