# Musical Mayhem

## Input

1. Number of performers
2. Number of acoustic, electric stages
3. Number of coordinators
4. Minimum, maximum performance time
5. Wait time for each performer
6. Name, instrument type, the arrival time for each performer

## Explanation

- getsastage is the primary function. The instrument decides the type of performer. Type is 0 if the performer performs only on the acoustic stage or 1 if the performer performs only on the electric stage else it is 2.
- Based on the type of performer corresponding timer threads (acoustic/electric) are created. Also, for a singer, timer thread is created which searches for a musician performing a solo (waits for formusician semaphore) and posts forsinger semaphores as a signal. forsinger semaphore is taken back if a musician is not available.
- Performers leave if they do not get corresponding stage or musician (for a singer) in time.
- Initially, stage of a performer is –1. When timer threads are created, the thread which first received the semaphore sets the value of stage to 0 for acoustic, 1 for electric and 2 for musician.
- The timer threads for a stage also invokes performance function for the performer after getting a stage.
- If a performer is performing, he/she creates a timer thread to search for a singer who is not performing. The performing musician sends a signal by posting formusician semaphore and waits for forsinger semaphore. If found, a singer performance time is increased by 2 seconds else formusician semaphore is taken back.
- After completion of performance, a thread is created to collect t-shirt from coordinators (for both singers and musicians who performed).
- **Functions**
  a. getastage – initialize performer, creates timer threads.
  b. timerfor_astage – timer for acoustic stage.
  c. timerfor_estage – timer for electric stage.
  d. timerfor_musician – timer to search for musician performing solo.
  e. Perform – start performing on a stage, create a thread to find a singer
  f. checksinger – timer for finding a singer.
  g. taketshirt – take a t-shirt from a coordinator.