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BANGLADESH UNIVERSITY OF BUSINESS AND TECHNOLOGY

Assignment 2

Course Code: CSE 331

Course Title: Advanced Programming

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Assignment-2

Soln:

Deadlock

Deadlock in java is a part of multithreading. Deadlock can occur in a situation when a thread is waiting for an object lock, that is acquired by another thread and second thread is waiting for an object lock that is acquired by first thread. ~~Science~~ Since, both threads are waiting for each other to release the lock, the condition is called deadlock. For example, if we have two threads named thread 1 and thread 2, deadlock might occur in the following situation: If thread 1 is waiting for thread 2 to complete a task, and thread 2 is waiting for thread 1 to complete a task, then neither thread can continue. Since both threads are in the waiting state, neither thread can be signaled to continue executing. To help prevent deadlocks, ensure locks are always taken in the same order and released in the opposite order they were taken.

Indefinite Postponement

This typically occurs because threads of higher priority are scheduled before threads of lower priority.

Example

The story of the dining philosophers is often used to illustrate ~~dea~~ various problems (two of them are deadlock, indefinite postponement (starvation)). This problems can occure when many synchronized threads are competing for limited resources. The story goes like this: Five Philosophers are sitting at a round table. In front of each philosopher is a bowl of rice. Between each pair of philosopher is one chopstick. Before taking a bite of rice, an individual philosopher must have two chopsticks: one taken from the left and one taken from the right. The philosophers must find a way to share chopsticks so that they all get to eat.

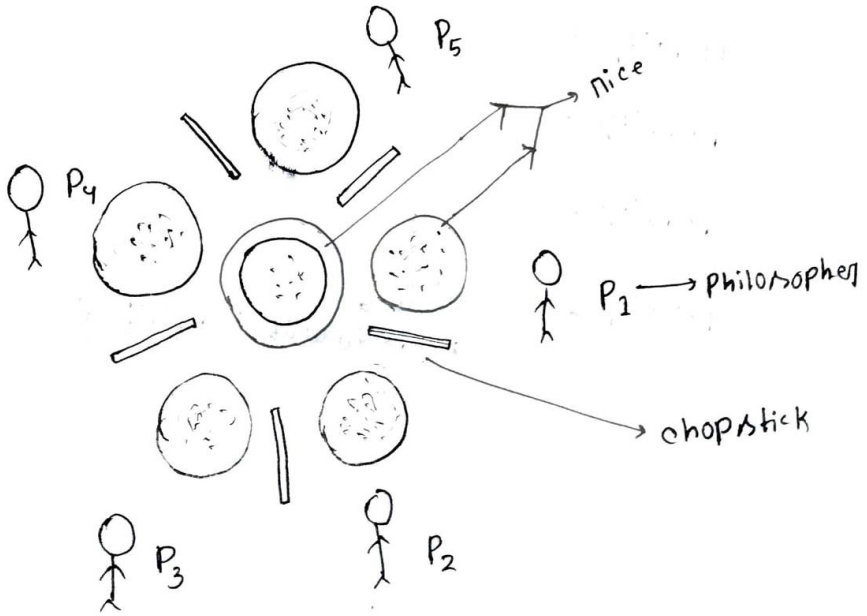

Figure: Dining philoshoper problem