AHSANULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY (AUST)
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Department of Computer Science and Engineering
Program: Bachelor of Science in Computer Science and Engineering

Project

Assignment

Course No : CSE-3213
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Dining Philosophers Problem :

Definition : We have five(say) philosophers sitting around a circular table. Each philosopher has a plate of food and a fork on either side. To eat, a philosopher needs both forks. However, they must share the forks with their neighboring philosopher.

Our challenge :

- If all philosophers pick up one fork at the same time and wait for the other, they will be stuck forever (deadlock).
- If philosophers are not careful, some might starve while others keep eating.

Here we have to avoid deadlocks as well as ensure as much fair resource allocation as possible.

Solution : Here we have the solution code for the Dining Philosophers Problem given below

Sleeping Barber Problem :

Definition : Say we have a barber shop. In the shop we have

- One barber who cuts hair.
- A waiting area with a limited number of chairs.

- Customers who walk in randomly.

Our challenge:

- If there are no customers, the barber sleeps.
- If a customer arrives and the barber is asleep, they wake him up for a haircut.
- If the barber is busy but chairs are available, the customer waits.
- If the shop is full, new customers leave without a haircut.

Here we have to ensure as much fair resource allocation as possible.

Solution : Here we have the solution code for the Sleeping Barber Problem given below