

Scenario – 1

Objective:

Our aim is to make you understand the concept of Multi-Threading

Problem Definition:

- Developing an University Registration System where students register for admission
- For registration process student should contact the university registrar.
- The university had appointed a Registrar and a Validator. They are simultaneously accepting the student details for registration.
- Registrar will accept the student details and intimate to Validator. Registrar will wait for Validator's intimation.
- Validator get the student details and validates and throws AgeException if student age is <35 and >23. If age is valid, students details are write in to a file. After that validator intimate to Registrar for next student details.
- Create a file named StudentDetails.txt to store the details of student
- You have to create a Student class with name, age and implement necessary methods like push, pop, toString.
- Create Registrar, Validator thread classes for simultaneously accessing the student details.

Scenario – 2

Objective:

Our aim is to make you understand the concept of Multi-Threading

Problem Definition:

- Developing a Department Out Pass System where students will get out pass by ASWO and verified by HOD.
- Department ASWO will verify the student outpass details of roll_No and max_Leave_Days and reason for leave.
- If max_Leave_Days are above 5 days, ASWO will reject student outpass.

- After processing the student outpass by ASWO, he will wait for HOD instruction. if outpass will get by HOD, he will write student outpass details like student roll_no, max_Leave_Days and reason for leave into file. He will notify to ASWO for next outpass.
- After entering details into file, then only ASWO will process another student details to HOD.
- You have to prepare a studentOutpass class with necessary variables and implement methods like push, pop, toString.
- Create ASWO, HOD thread classes for simultaneously accessing the student leave applications.
- Create a Student_Leave class where student apply for leave.

Scenario – 3

Objective:

Our aim is to make you understand the concept of Multi-Threading

Problem Definition:

- Developing a Hotel InBook Log System where customer meets the Receptionist and submit details to Receptionist, after that details collected by Book keeper and write into a text file.
- Receptionist will collect Customer data and Intimate to Book keeper. Book keeper will get the details and write into file. After write into file, book keeper will intimate to Receptionist. Receptionist will collect 5 customer details and Book keeper will write each customer details in file.
- Customer has name, age and mail_id. You have to implement push, pop and toString methods in customer class.
- Create Receptionist, Book keeper thread classes and implement accordingly. These objects are simultaneously accessing the customer object.
- Create a Demo class for running the program.

4. Create two thread classes. One thread class will generate Even number and another thread class will write that number into file. Both thread should be communicate through predefined methods like notify(), and wait(). Producer thread has to insert number into a buffer and notify the consumer thread. Consumer thread will get the value from buffer, it will send value to file and notify to producer for next number. Implement the necessary classes and methods to achieve the multi-threading.
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