More on Threads

Sr. No.	Assignment Question
1	Express Pizza Service is an emerging name in the field of Pizza Delivery Service Provider. Its services include sending different types of pizza such as Neapolitan Pizza, Chicago Pizza, California Pizza, New York Pizza and Italian Pizza throughout the city without any delay. The customer gives a call to the Pizza Delivery Service provider and ask for the specific type of pizza required. If that particular type of pizza is available, the delivery boy takes the Pizza parcel and delivers it to the customer as soon as possible. But, if that specific pizza is not available, the customer is asked to wait for some time, or asked to go for some other options available. The management of Express Pizza Sevice is looking at automation as a means to save time and effort required in their work. In order to achieve this, the management has planned to computerize the process of maintaining the online status of the delivery as to whether the pizza has reached the customer or not. The Express Pizza Service and a team of experts have chosen your company to provide a solution for the same. Consider yourself to be a part of the team that implements the solution for designing the application. Create an application using Thread synchronization to implement the application. The application should consist of the following classes: 1. Producer.java 2. Consumer.java 3. ProducerConsumerQueue.java 4. ProducerConsumerTest.java Each file has a specific purpose and functionality. The descriptions of each file are as follows. **Producer.java** The **Producer** class is a subclass of Thread class that generates and stores the values of single array static variable **content** one by one into a **ProducerConsumerQueue** object. The **Producer** class declares an instance of **ProducerConsumerQueue** class. **Consumer.java** The **Consumer** class is a subclass of Thread class that consumes and prints the content values of single array variable **content** one by one from the **ProducerConsumerQueue** object exactly once. The **Consumer** class declares an instance of **ProducerConsumerQueue** class. **ProducerConsumerQueue.java** The **ProducerConsumerQueue** class contains the shared contents which are stored by the **Producer** object and consumed by the **Consumer** object. Note that the Producer should not access the queue when the Consumer is getting the value. Therefore, the **put** and **get** methods are used in the **ProducerConsumerQueue** class that contains the **synchronized** keyword. Also, in order to coordinate the Producer and Consumer threads **wait()** and

	notifyAll() are used in both the put and get methods of the **ProducerConsumerQueue** class. **ProducerConsumerTest.java** The **ProducerConsumerTest** class instantiates **ProducerConsumerQueue**, **Producer** and **Consumer** classes and starts Producer and Consumer threads.