NORTHEASTERN UNIVERSIY  
MIE Department  
IE 3425 DB

# **Research Assignment**

# **Answer to exit question:**

provide feedback about the research concept to help us improve: level of  
difficulty (easy, hard, about right), Questions expected or any surprises, time it took you to  
answer all questions (did you have enough time), did you learn more from the research,  
resources you used to answer questions (class slides, class code, Internet, etc. which resource  
you used the most?), add any other feedback you might have. Thanks for your feedback and  
for taking the course. what else???

# **Research Tasks**

1. Using the course retail\_app database and SQL in VSCode
   1. Identify Employees with the Highest Salary in Each Department
   2. List all employees who have been with the company for more than 10 years, along with their employee ID, full name, hire date, and current age
   3. Identify the product with the highest inventory turnover rate, calculated as the total number of units sold divided by the inventory level defined in product table
   4. Find the information of the employee(s) who have the highest degree and have a salary >10000
2. Using the course retail\_app DB, create the following multi-level nav website shown below: home page (level 1) has 2 links: customers, products > click one link to go to level 2 (say customers) > click customers ink to go to page with 1 link (level 3): Add Customer. When you click Add Customer, it goes to page with form to add customer to retail\_app DB. Similarly, when you click Get Product link, it goes to page with form to get product with product\_id as input. Website specs are:
   1. You must use at least 2 images in Get Product webpage
   2. 2. All pages use one CSS file for formatting
   3. 3. Each page has a link, named Home > when user clicks it, they go back to Home page. This way,the user does not have hit browser back button to navigate website
   4. 4. Use Flask and Python to create the website
   5. 5. You must create the website manually. Using any web development tools result in ZERO grade
   6. A diagram of a product

      Description automatically generated
3. Do Problems F and G in Lab 19 in Week 11 on canvas. For G, use Python to delete the table. Prove/verify that the table has been deleted.
4. The Soccer World Cup has two groups. Each group has 4 teams: Team 1, Team 2, Team 3, Team 4. The total goals each team scored during the World Cup is:  
   Group 1: 20, 35, 25, 30

Group 2: 15, 28, 22, 18

1. Do Problems 5 and 11 in Lab 21, Week13 on canvas. Submit screenshots of employee table before and after commit and the SQL code used.
2. Do Problems 2 and 3 in Lab 22, Week13 on canvas. Submit screenshots of employee table before and after commit and the SQL code used. Also submit screenshot of the employee\_log table.
3. BONUS Q: (5% of your final points you score): Deploy the website you created in Task B on the web, so anyone can access it, like amazon.com. submit a separate detailed document in Word to canvas that describes the steps/instructions with clear screenshots. Use this name for the doc: website deploy NOTE: Do NOT attempt this question unless you are completely finished b/c there is NO partial credit.