

NATIONAL UNIVERSITY OF COMPUTER AND EMERGING SCIENCES

SL-2002 – Software Design & Architecture Lab

LAB Instructors: Rubab Manzar rubab.jaffar@nu.edu.pk

Noureen Fatima noureen.fatima@nu.edu.pk

Task 01

There are Multiple Mobile Application available online on play store. Every Application developed for particular reason. Now a day's one application getting more popularity as a Car service, named as "Careem Car". Which is mostly use for picking up and drop off from the particular location. Careem is a vehicle for Hire Company which is a subsidiary of American company. It is based in Dubai, with operations in over 100 cities in 15 countries in the Middle East, Africa, and South Asia. Before availing this service, you have to download and install from a paly story. It is the basically Mobile application so this application can directly be linked with your phones' GPS services. You just have to open the application and create an account with your phone number, email id. Then you will get confirmation email or sms from application. Application have two option: one is use as a passenger or you want to be Careem Captain. If you selected Careem Captain, that means you have to fill the form, also select your training slot and you can train online or at our offices.

After completing your training, you will receive a confirmation SMS. Log in to portal and start earning. Once you complete the ride, your earnings will be updated on your Captain Portal. For some rides you can collect the cash from the customer, but for credit card and wallet based rides, Careem will pay for the ride. If you are using Careem as passenger, you are able to pick up a ride. Then Select from a wide range of options and get a ride in minutes or schedule one for later. From the moment your Captain is assigned till you get to your destination, track your ride in real time or share your details with your loved ones. Payment method for ride, you can use different options like if you want to pay as Cash, card, or Careem credits, there is also one option regarding feedback rating. After the happy ride there is option of 5-star rating. If

you are satisfied with Captain behavior and ride, then you can rate a captain on Careem app. This feedback will help full for the captain.

- i. **Identify the actors for the following system.**
- ii. **What are the candidate use cases you can find?**
- iii. **Design the Complete USE CASE diagram for given System.**

Task 02

The University of Ottawa, the world's largest bilingual university, has an enrollment of over 40,000 students across 450 study programs and 10 faculties. They offer scholarship to national and international students. For the national students, scholarship will be partially funded and for the international student they offered fully funded scholarship. When students open the official website of University of Ottawa, Applicant have to login into website to create an account. Before log in, applicant must have to register him or herself with national id, name and country name, email id. After successful registration applicant can log in with email id and national id num as password.

After log in, applicant can select the international scholarship and upload passport, fill the application form and upload qualifications or can select national scholarship and upload National Id card picture and upload the necessary documents and qualification details. Now at the backend Admin log in to website and verify all the uploaded documents. After verification of applicant's details, applicant receive an email about status update from submitted to under review. When admin finalized the review process and shortlist the applicant, again status will be update from under review to shortlisted. If applicant's document not satisfy the requirement of admin officer, he able to the reject the applicant and applicant will notify by the rejection email. After short listing, Admin sent invitation of interview, interview can be in two slots, for national students, interview will physical and venue details will be share to national applicant, and for internal student interview will conducted through virtually. The Admin officer also sends a notification to qualified applicants via email and SMS on their success and the award of the scholarship. The officer generates reports e.g. list of shortlisted candidate for interview.

Task 03

Azure Machine Learning designer tool is used to train and deploy a machine learning model that Predicts the next level data. This designer tool is a drag-and-drop tool that lets you create machine learning models without a single line of code. Azure Machine Learning designer tool is an online platform that will use for data training purpose and Forecast the results. For using this system, you are provided with a flexible platform for

uploading a raw data set. Dataset file must be CSV or Excel file format. Before starting you have to log in then you will be able to see these listed features:

- Import data.
- Prepare data.
- Train a machine learning model.
- Evaluate a machine learning model.

After Importing the data file, system will show feature selection options for data preparation, data preparation relies on two steps, first one is to select the particular column using Select columns dataset module and second one remove the remaining missing data by using the Clean Missing Data module. After filtration, now you have the modules in place to process the data, you can set up the training modules. For this, you have to split the dataset for training and testing purpose.

Training dataset will be processed further with particular Artificial Algorithms, you have to choose the algorithm according to the nature of your data, there are two categories of Algorithm either it is regression for numeric data or classification for labeled data. After applying particular algorithm now evaluate your Test data with confusion matrix in order to check the Correctness of system and accuracy.

You have to apply more than one algorithms in order to identify the best fitted algorithm that gives your high range of correctness.

Task 04

An executive at a chain of family restaurants called Brampton's Pizza and Pasta. They are looking to develop some software for in-house use at their restaurants. Their goal is to take the restaurant ordering process and make it more efficient. She is thinking that customers should be able to view the menu of the restaurant they're in, and once they're ready, place an order. She'd really like there to be a kids' page where you can see the kids' menu. Maybe there's a few games for the kids to play, but most importantly, it should be easy enough to use that kids can make an order themselves. Customers should also be able to specify any changes they'd like to make for their meal, and they should be able to list any dietary restrictions they may have before they submit their order to the kitchen. The kitchen should then be able to view these orders as they come in. Customers should be able to view and pay their bill within the system.