Assignment 1 – Due Date: February 11ᵗʰ, 2024 – 11:59 PM – Must be done Individually.

Part A – Software Process and Software Project Management – 30 Points (20 – 30 Minutes)
Note: For Part A, you need to review lectures 1, 2, and 3.

1. **(10 Points)** Name and describe four of the <u>ACM/IEEE codes of ethics</u> in your own words.
2. **(5 Points)** What are the differences between <u>verification</u> and <u>validation</u>? Describe in your own words.
3. **(5 Points)** What does <u>software specification</u> mean? Describe it briefly.
4. **(10 Points)** What are the differences between Agile and Waterfall processes? Give three examples of Agile methodology.

Part B – User Stories and Functional & Non-Functional Requirements – 40 Points (60 – 90 Minutes)

Banana Inc. is a company that develops mobile applications. The stakeholders have decided to develop a new mobile application (which works on both Android and iOS), called "Groupi". The application can be used to make group appointments for restaurants. The company has set up collaborations with many restaurants and is able to offer discounts for its users if they decide to make group appointments with those restaurants. The Groupi app provides the following features to individuals:

The individuals need to first register and enter their personal information. After a successful registration, the individuals could use their username and password for future login.

The users can make a reservation through the app. If the reservation is accepted, the individual should receive a confirmation. Otherwise, the individual will receive a rejection message that the reservation is not possible at this point. If the reservation is for more than 10 people, the restaurant offers a 10% discount. The users should be able to pay the bill to the restaurant directly in the application. The payment can be in the form of credit card payment or Apple/Google Pay. The users can also invite their friends. After 10 friends accept the invitation to sign up for the app, the user gets a coupon for one free meal.

The users must have choices between allowing the app to track their location all the time, only while using the app, or never. In addition, users should be able to share their location with a social network of their choice or to revoke it whenever they want to. To give suggestions for the restaurants, the users need to enter their personal information, such as name, age, location, food preferences, food allergies, etc., in the app. The app should allow users to decide if they want to share their restaurant visits with their friends. The Groupi app also asks users to access their location to suggest the nearest restaurants to them. To do so, they take the preferred food type or food allergies into consideration as well.

After 15 minutes of inactivity, the app should automatically log out to the user.

To be compliant with the regulations and not get financial penalties and/or suffer from reputation loss, the Groupi app needs to comply with several laws and regulations in the US and the EU.

1. **(10 Points)** Write **5 user stories** for different features of the Sportzi application.

2. **(20 Points)** Write **10 functional requirements (FR)** for Sportzi.

3. **(10 Points)** Write **5 non-functional requirements (NFR)** for Sportzi. Make sure to add at least 1 privacy and 1 security NFR.

Part C – Web Development and Mobile App Development – 30 Points (60 – 90 Minutes)

1. **(10 Points)** what are some important files to include in your git repository, and why are they important?

2. **(10 Points)** Consider that Groupi is an Android application. The Groupi app wants to access the last known location of the user to find the nearest restaurant. In this case, you are interested in the user's current location. You need to write the code which shows how Groupi calculates the nearest location by accessing user's current location and explain your choices of the types of permission requested and the best location estimates.

3. **(10 Points)** Repeat Q2 for the iOS framework and describe the differences.