CS572 MWA Final Exam Guide

**You should be able to finish the exam and answer all questions in 1.30 hours.
However, 2.30 hours will be granted.**

This exam is graded out of 75 points, it is contributing 25% of your final grade.

The exam will be divided as the following:

- Short Answer Questions (13 questions)= *25 points*

- One Angular Programming Question = *45 points*

- Redux Question = 5 points

Short answer questions are provided with a limited space. When one line is provided, that means that your answer should be a few words and not exceed that one line. When two lines are provided, that means that your answer could be one line or two, but should not exceed two lines. If your answer exceeds the given space, even if your answer was 100% correct the question will be ignored and you won't receive any credit. When you feel like you need to explain something with two lines while only one is given, then you must rephrase your answer and choose the most important answer that fits within one line. However, short answers that don't imply a correct answer will not be considered.
Notice that the blank space under each question is not for the answer, it's there for consistency of the exam layout.

Not all short answer questions are about Angular concepts. Some of them are going to ask you to explain certain pieces of code.

You will be provided with most of the code structure and methods signatures for the programming questions, there will be no need to remember the code. You will only need to implement the methods correctly and write your logic within.

Answers are preferred to be written with a Pen and not Pencil, if you need to write your answers using a pencil, you should bring your own sharpener and eraser, no stationary borrowing is allowed.

All mobile phones should be turned off and submitted to the front/back area at the beginning of the exam. No smart watches are allowed during the exam.

Please get ready and use the washroom before the exam starts, as no one will be allowed to leave the exam room before completely turning in their papers.

No extra papers are allowed other than your exam papers. Exam papers should stay stapled together all the time. If you need extra space, you may use the back of the papers or any blank space you find. Let's help each other save the environment.

There is no tolerance policy for exams. Once you are caught cheating or trying to cheat, you will be asked to leave the exam room immediately without a warning.

Write your answers with **clear handwriting** and **clear English language**. If I don't understand your handwriting, you will receive the big-O notation.

Get yourself familiar with the following topics:

- How SPA work?

- ngModule, Bootstrap your app

- Components, Tree of Components, Inputs, Outputs, ng-content, Emitting custom events, using $event, using template variables, Component lifecycle hooks.

- Shadow DOM and view encapsulation

- Change Detection, how it is triggered? Zones, Angular CD Algorithms, Angular monomorphic class output, using Immutables/Observables.

- Know the difference between attribute and structural directives

- Know how to create a custom directive.

- Using HostBinder and HostListerner decorators.

- Using ViewChild and ContentChild decorators.

- Dependency Injection framework, how Angular instantiate our services (custom classes)

- Cross Component communication.

- Changing URL techniques and why we use each of them.

- Main components to implement Routing. Reading params, query params and fragments, Guards.

- Differences between JiT and AoT compilation

- FormGroup and FormControl and how we create them in Template-Driven, Data-Driven approaches. How ngForm and ngModel work, how formGroup and formControl directives work.

- How Custom and Asynchronous validators work?

- Listening to form changes?

- Pipes, Pure pipes, Async pipes.

- How we use HTTP service and best way to use a service.

- JSON Web Token Authentication.

Good luck.