Intensive 8-Week Java Web Development

Montgomery College

Information Technology Institute

Fall 2019

America’s Promise Grant

Monday-Friday

9:00am – 5:00pm

Instructor: Jennifer Lee, [jennifer.lee1@montgomerycollege.edu](mailto:jennifer.lee1@montgomerycollege.edu)

Grading: Pass/Fail

# I. Rationale:

According to the U.S. Department of Labor employment of software developers is projected to grow 24 percent from 2016 to 2026, with 302,500 jobs added within that timeframe. This is well above the average for all other occupations. The Java Web Developer Boot Camp is an 8 hour a day (9 am - 5 pm, M-F) 8-week, immersive software engineering program funded by the Department of Labor in order to meet the coming tech demand.

# II. Course Aims and Outcomes:

The Java Web Development Bootcamp takes you from your first java program to developing a web application. This course will give you a fast start on your career so you can take it to the next level. The course will teach you by forcing you to write over 130 java applications, including 5 major web applications. Programming challenges will keep you on your toes.

You will learn to create web page and develop skills creating applications using the MVC pattern and Spring Boot framework. Using the templating engine Thymeleaf you will learn to connect to SQL databases using object relational mapping. Most importantly, all assignments are submitted through git, so you will learn to develop using best practices in class, to make it easy to contribute value when you are on the job.

Upon the completion of the bootcamp, you will receive a voucher for one free exam of the AWS Certified Developer – Associate certification. However, we will not cover materials on this certification during the bootcamp. This is offered as an incentive for your completion.

* Git
* Program Design
* Core Java
* Object Oriented Design
* HTML/CSS
* Intro to Spring Boot
* SQL and Database Management
* Security

# III. Absence Policy:

Every student is responsible for attending all sessions of each course in which he/she is enrolled. The attendance requirements are determined by the Grant, not the instructors. The instructors are required to take attendance each day and report our information to the Grant project manager. You are allowed three absences. Any more than that will prevent you from receiving a certificate of completion for the course. If you are late three times that will count as one absence. If you’re going to be late or absent on certain days, let the instructor know beforehand.

Absence - A student is absent any time he or she is missing. You are allowed one absence without penalty for any classes longer than 2 weeks.

Tardy - A student is tardy when he or she arrives 15 or more minutes after the designated start time. Being tardy 3 times will count as one absence.

# IV. Code of Conduct:

Cell phones must be kept on silent or vibrate inside the classroom. Absolutely no phone calls inside the classroom. Voice can carry in the hallway so please use the student lounge for calls.

The blinds must stay closed. When open they create a glare that makes the screen or board difficult to read for many students.

This class is designed to get you to learn by coding. It is a collaborative learning space, and it is ok to ask the instructor or your classmates with questions, but please keep the noise level down out of respect for the other students. We will enforce this rule as needed throughout the course.

You are free to ask for help on all days except for the last day, when you are working on the individual challenge. You may however ask questions related to Git and Github. The deadline is 5pm on Friday unless otherwise specified.

Be kind to others. Do not insult or put down other classmates. Behave professionally. The people you meet in this class could help to expand your professional network.

Take the allotted breaks. Sometimes giving your eyes a break from the screen can boost your error-finding ninja skills.

Please do not have any drinks at your desk that are not tightly covered. If the instructors think the drink presents a hazard to the keyboard or computer then you must move it.

No personal laptop during class time.

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| Date | Concepts | Applications |
| Week One | Using Git and GitHub  Basic Java  Identifiers  Comments  Variables  Coding arithmetic statements  Special Characters (for Display)  Randomness  Boolean Expressions  Compound Boolean Expressions  What If (Intro to Conditionals) | Find the Average Test Score  Calculate the Amount of Rainfall  Sort Letters in Ascending Order  Special Character Assignment  Monopoly Dice  Printing Grades  Triangle Calculator |
| Week Two | Using and Understanding Strings  Creating Methods  String and Number Formatting  Switch Statements  While Loops  For Loops  Java Collections vs. Maps  Arrays  ArrayLists  HashMaps | Mowing Time Programming  Switch Statement Activity  Guessing game  Simple Eliza Application  Fizz Buzz  Variation on Pig  Simple Eliza Application II  Choose Your Adventure  Movie List II  Full Eliza Application  Gift Advisor |
| Week Three | Object-Oriented Java  Encapsulation  Polymorphism  Inheritance  Basic OOP Applications  Composition  Abstract Classes | Create a Car App  Create a Book Class App  Create an ATM App  Create a Book Database  Student Transcript App |
| Week Four | Intro to HTML  Comments, Tags, and Hyperlinks  Span and Div  Forms and Images  CSS and the box model  Twitter Bootstrap | A Crabby Website  Favorite Movie Website  Your Own Blogsite |
| Week Five | Intro to Spring Boot  Intro to Thymeleaf  Handling Form Values  Creating Java Beans  Form Validation | Hello World  Songs Application  Movies Application |
| Week Six | Saving Data to a Database  Looping through a list with Thymeleaf  Complete data lifecycle  Many to Many Relationships  One to Many Relationships  One to One Relationships | Job Application  TODO List Application  Classes and Courses App  Actors and Movies App  Movies and Directors App |
| Week Seven | Basic Security  Custom Login Pages  Roles and Page Permissions  Database Based Authentication  Persisting User Information  Implementing User Registration  Using Page Fragments with Thymeleaf  Uploading Images with Cloudinary | Bullhorn Application  Your Own Application |
| Final Week | Teamwork  Git Team Workflow Refesher | Final Projects |

# V. Course Content:

(*Subject and Content Subject to change as deemed necessary*)

# VI. Grading Procedures

You will receive a certificate of completion for the grant if you meet the attendance requirements and submit all the Friday projects. Your Friday projects will be graded as Pass or Fail. You may not receive a certificate of completion if you fail two Friday projects in a row.

# VII. Academic Integrity

All work submitted are expected to be your own.

# VIII. Additional Resources

Java Documentation and Tutorials

<https://docs.oracle.com/javase/tutorial/>

<https://docs.oracle.com/en/java/>

<https://www.cs.usfca.edu/~parrt/course/601/lectures/java.overview.html>

[https://learnxinyminutes.com/docs/java (Links to an external site.)](https://learnxinyminutes.com/docs/java)

Spring Resources

<https://www.baeldung.com/>

<https://www.thymeleaf.org/documentation.html>

<http://spring.io/>

Coding Games

<http://lightbot.com/hour-of-code.html>

https://codecombat.com/

Self-Learning

https://www.sololearn.com/Course/Java

https://www.lynda.com/search?q=java

More practice writing code:

https://coderbyte.com/challenges

https://www.hackerrank.com/domains/java