Things We Completed

- Finished the WAR Build Script
- Made changes to files which allowed for:
  - Instantiatiation of containers for MySQL and Tomcat via Docker Compose
  - Porting of the .war file that is created by the "build-War.sh" into the Tomcar container
  - Porting of the Database creation script to the MySQL Container
- Created an access method to the MySQL Container: "accessMySQL.sh"
  - Read the file for instructions on what to to
- Automated the build process for creation of the .war file and containers

Where to Go Next

- Ensure that all groups (Front end, Back end, Project Management) can instantiate the container on their device.
  - ^^^ As a sub-goal: make sure people are running (JDK 11?). If not, the TomCat container will not be able to run the Servlets at all.
- Work with Backend to Get the JDBC driver connecting to the container

Files In The DevOps Folder / What They Do
Key Files Highlighted in RED

- "data" folder
  - This is a result of running the MySQL container. If you were to run the containers on your device, it would make changes to some of these files.
- DatabaseSetup.sql
  - SQL script that, when run, creates the database structure
  - Copied into the MySQL container via other script
- Dockerfile
  - The Dockerfile specifies conditions for the images the Tomcat and MySQL containers are based on.
  - Copies the .war file into the TomCat container
- accessMySQL.sh
  - Allows access to the MySQL Container and allows the DatabaseCreator.sql script to get run inside the container
  - Instructions are commented throughout this file to note how it works
- build-War.sh
  - Builds the .war file
- buildMainBank.sh
  - This is the main script that should be run to create the containers

- ○ Call several of the scripts in this folder and, in total:
    - ■ Creates a .war file
    - ■ Moves that .war file into the DevOps folder
    - ■ IMPORTANT: prunes your Docker Desktop of existing containers, images, and cache objects
    - ■ Runs Docker Compose, utilizing the .yml file and Dockerfile to create the Tomcat and MySQL containers
    - ■ Copies the DatabaseCreator.sql script into the database
- ● Docker-compose.yml
    - ○ The markup file that specifies conditions for the two containers
- ● loadMySQL.sh
    - ○ The script that actually loads the DatabaseCreator.sql script into the MySQL container
- ● moving-War.sh
    - ○ Moves the .war file into the DevOps folder so that it can be recognized when the containers are created
- ● runMainBank.sh
    - ○ Runs the command that called Docker Compose to instantiate the containers

Final Notes about Container Instantiation

- ● How to run the containers on your local device:
    - ○ Make sure all recent Repository commits are pulled and Docker Desktop is updated to the most recent version
    - ○ Open a Gitbash Terminal
    - ○ Change directory via the "cd" command to the DevOps folder/directory of the Bank System.
        - ■ If you want to view the files from here type "ls" to see the files in the DevOps folder
    - ○ Run the command: "./buildMainBank.sh"
        - ■ What this will do exactly has been noted above
- ● When the Docker containers are created and run on your device, in order to view the TomCat web interface:
    - ○ Go to Docker Desktop
    - ○ Click the arrow next to the "devops" label
    - ○ Hover over the tomcat container and click on the "Open In Browser" button
        - ■ This will take you to a 404 not found page. This is fine.
    - ○ After localhost8080, type /Banking/faq.html after it to view an HTML page
        - ■ It should look like this: localhost:8080/Banking/faq.html
        - ■ This will display an HTML page

- After localhost8080, type /Banking/HomePageServlet after it to view a servlet page
    - It should look like this: localhost:8080/Banking/HomePageServlet
    - This will display a servlet
        - If it does not display, the likely issue is JDK version
            - Windows fix:
                - https://stackoverflow.com/questions/11723442/how-do-you-set-java-version-in-windows-git-bash
            - Mac fix:
                - https://stackoverflow.com/questions/21964709/how-to-set-or-change-the-default-java-jdk-version-on-macos
- In order to access the MySQL side of things:
    - View the instructions in the "accessMySQL.sh" script

Resources

- Previous DevOps Team Might Help Clear Confusion:
    - Nicholas
    - Blake
    - Josh
    - Adam
    - Brandon
- Online Resources:
    - A lot of these can be found interspersed throughout the DevOps section of the discord. There are various links scattered throughout about different things.
    - Notion - DevOps if you can access it