Understanding what the given applications are and what changes are done on each version.

Manually I tried running this application, for which I had to configure all the prerequisites for running a java application, and executed the jar files.

Once the application started, tried hitting all the endpoints based on each application as mentioned it worked as expected on my machine.

I understood what I have to achieve at the end.

As per the requirement followed the below approach which I found can be a solution, but there are other ways to achieve the same as well:

I followed the approach on which I am currently working on.

**Step 01:**

Used AWS Cloud Formation:

* Created 3 ec2 VMs to start each application so that there is no clash with the port 8080 else we will have to edit the port in the actual code.
* Deployed Windows VM
* Added a PowerShell script in the user data which installed and sets the path variables for Java, in the System Variable property of the Virtual machine.
* In the similar code added a line to execute jar file but encountered an issue that I was able to successfully execute the same PowerShell script inside the VM with the PowerShell ISE or command prompt, (wherein the application started) but when tried via userdata it was not starting the application.
* Hence used AWS SSM Document to start the application, by just passing the instance id of the VM.

**Step02:**

* To access the app outside the VM using the public IP of the VM on which the application is started, opened port 8080 in the windows firewall setting using PowerShell script in the userdata of the VM.

**Step03:**

* Using Step01 & 02 Created Infrastructure as a Code, and committed the code to VSTS Git and automated the process.
* Created a parameter file to add some of the user input variables which will be used while running the code.
* In AWS Created a user and gave it administrator access so that VSTS can use the AWS Services via CLI and do the action mentioned in the Cloud Formation template, for which added the access key and secret access in VSTS setup as a part of configuration.
* Created Build definition so that the code is validated.
* Added a task for publish build artifacts.
* Created release pipeline to execute the code.
* Once all the configurations were done triggered
* For the application to run on the VMs we have to wait till the VMs is initialized properly.
* Created one more pipeline for the SSM Documents to start the application on VM. (Passed the SSM document name, once VMs are deployed Changed the VM id and the released the pipeline which deploys 3 apps on 3 VMs.
* Once the VMs are ready added the instance ids of all 3 VMs in the respective pipeline of each SSM document and then triggered he application Started and can be viewed on any developers machine using the Public\_IP:8080

**Step04**:

* For routing the port to 8000 we will have to setup a firewall, which I ha­­­­ve done at my work but dint deploy for this assignment as the barracuda firewall which I used is very costly.

The Whole approach can also be followed using Terraform.