1. Create an instance, install apache server(using start-up script) and add an index.html file. Create a robust web server with the use of auto scaling and load balancing.
Deliverable :- start-up script, security group rules, Listener configuration, steps

Start-up script:

```
!#/bin/bash
apt-get update
apt-get install apache2
service apache2 start
```

Security Group rules:
For EC2 instance:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	59.152.53.203/32	SSH for Admin Desk...
HTTP	TCP	80	0.0.0.0/0	
HTTP	TCP	80	::/0	

Listener Configuration:

Load Balancer Protocol	Load Balancer Port
HTTP	80

Steps:

1. Launch an EC2 instance
2. Create a load balancer:
   a) Open the EC2 dashboard.
   b) In the left pane, click on Load Balancers.
   c) Click on Create Load Balancer.
   d) Under Application Load Balancer, click on Create.
   e) Configure Load Balancer: Give it a suitable name. Under Listeners, add HTTP on Port 80 if not already present. Select the VPC and AZ in which your EC2 instance is present. Add relevant tags and click on next.
   f) Configure Security Settings: click on next.
   g) Configure Security Groups: Select an existing security group or create a new one. Then click on next.
   h) Configure Routing: Select New Target Group, give it a suitable name, select target type as Instance, click on next.
   i) Register Targets: Proceed without adding any targets.
   j) Review: review everything and click on Create.
3. Create an Auto Scaling Group and attach your LB to it:
   a) Create an image of your EC2 instance.
   b) Open the EC2 dashboard.
   c) In the left pane, under AUTO SCALING, click on Auto Scaling Groups.
   d) Click on Create Auto Scaling group.
   e) On the next page, select launch configuration and click on create a new launch configuration:
      - Choose AMI: Click on My AMIs and select your custom AMI that you created from your EC2 instance.
      - Choose Instance Type: select t2.micro and click on next.

- Configure details: give it a name, assign an IAM role and click on next.
- Add Storage: Proceed with default values.
- Configure Security Group: select your ec2 instance's security group and click on Review.
- Review everything and click on Create launch configuration.
- Select an existing key pair or create a new one and download it. Now, click on Create launch configuration.

f) Configure Auto Scaling group details: give a group name, select the network and the subnets in which you want your instances to be present.
g) Now, click on Advanced Details and select **"Receive traffic from one or more load balancers"** and then select your target group from the list. Select health check type as elb and click on next.
h) Configure scaling policies: select "Use scaling policies to adjust the capacity of this group", set min and max size and click on next.
i) Configure Notifications: click on next.
j) Add relevant tags and click on review.
k) Review everything and click on Create Auto Scaling group.