Create authentication service that returns JWT
Code:

JwtAuthApplication.java:

```
package com.example.jwt_auth;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication

public class JwtAuthApplication {

    public static void main(String[] args) {

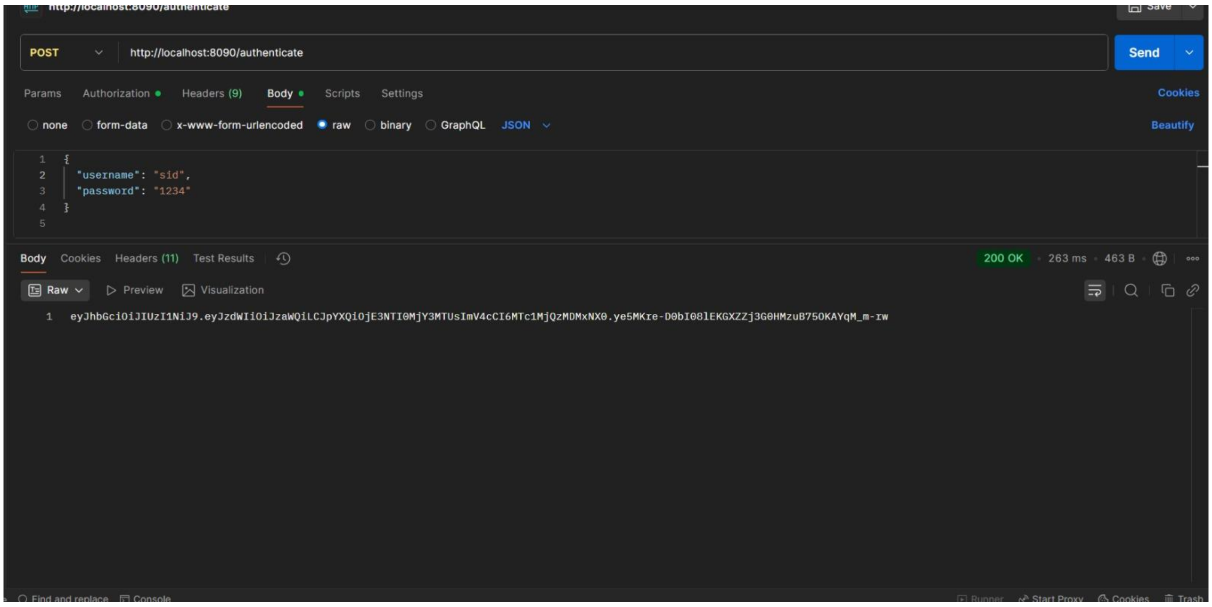
        SpringApplication.run(JwtAuthApplication.class, args);

    }

}
```

SecurityConfig.java:

```
package com.example.jwt_auth.config;
```



POST http://localhost:8090/authenticate

```
{
  "username": "sid",
  "password": "1234"
}
```

200 OK · 263 ms · 463 B

```
eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiJzaWQiLCJpYXQiOjE3NTI0MjY3MTUsImV4cCI6MTc1MjQzMDMxNX0.ye5MKre-D0bI08lEKGXZZj3G0HMzuB75OKAYqM_m-rw
```

```
import com.example.jwt_auth.filter.JwtAuthFilter;

import org.springframework.beans.factory.annotation.Autowired;

import org.springframework.context.annotation.Bean;

import org.springframework.context.annotation.Configuration;

import org.springframework.security.authentication.AuthenticationManager;
```

```
import
org.springframework.security.config.annotation.authentication.configuration.AuthenticationC
onfiguration;

import org.springframework.security.config.annotation.web.builders.HttpSecurity;

import org.springframework.security.config.http.SessionCreationPolicy;

import org.springframework.security.web.SecurityFilterChain;

import
org.springframework.security.web.authentication.UsernamePasswordAuthenticationFilter;

@Configuration

public class SecurityConfig {

   @Autowired

   private JwtAuthFilter jwtAuthFilter;

   @Bean

   public SecurityFilterChain filterChain(HttpSecurity http) throws Exception {

      http

         .csrf(csrf -> csrf.disable())

         .authorizeHttpRequests(auth -> auth

            .requestMatchers("/authenticate").permitAll()

            .anyRequest().authenticated()

         )

         .sessionManagement(sess ->
sess.sessionCreationPolicy(SessionCreationPolicy.STATELESS))

         .addFilterBefore(jwtAuthFilter, UsernamePasswordAuthenticationFilter.class);

      return http.build();

   }


   @Bean

   public AuthenticationManager authenticationManager(AuthenticationConfiguration
config) throws Exception {

      return config.getAuthenticationManager();

   }

}
```

AuthController.java:

```
package com.example.jwt_auth.controller;


import com.example.jwt_auth.service.JwtService;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.web.bind.annotation.*;
import com.example.jwt_auth.dto.AuthRequest;
@RestController
public class AuthController {
   @Autowired
   private JwtService jwtService;
   @PostMapping("/authenticate")
public String authenticate(@RequestBody AuthRequest request) {
   if ("oviya".equals(request.getUsername()) && "1234".equals(request.getPassword())) {
      return jwtService.generateToken(request.getUsername());
   } else {
      throw new RuntimeException("Invalid credentials");
   }
}
}
```

AuthRequest.java:

```
package com.example.jwt_auth.dto;
public class AuthRequest {
   private String username;
   private String password;
   public AuthRequest() {}
   public AuthRequest(String username, String password) {
      this.username = username;
      this.password = password;
   }
```

```
    public String getUsername() {
        return username;
    }

    public void setUsername(String username) {
        this.username = username;
    }

    public String getPassword() {
        return password;
    }

    public void setPassword(String password) {
        this.password = password;
    }
}
```

JwtAuthFilter.java:

```
package com.example.jwt_auth.filter;

import com.example.jwt_auth.util.JwtUtil;
import io.jsonwebtoken.Claims;
import jakarta.servlet.FilterChain;
import jakarta.servlet.ServletException;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.security.authentication.UsernamePasswordAuthenticationToken;
import org.springframework.security.core.context.SecurityContextHolder;
import org.springframework.security.web.authentication.WebAuthenticationDetailsSource;
import org.springframework.stereotype.Component;
import org.springframework.web.filter.OncePerRequestFilter;

import java.io.IOException;
import java.util.Collections;

@Component
public class JwtAuthFilter extends OncePerRequestFilter {

    @Autowired
    private JwtUtil jwtUtil;

    @Override
    protected void doFilterInternal(HttpServletRequest request,
                                    HttpServletResponse response,
                                    FilterChain filterChain)
                                    throws ServletException, IOException {

        String authHeader = request.getHeader("Authorization");

        if (authHeader != null && authHeader.startsWith("Bearer ")) {
            String token = authHeader.substring(7);
            Claims claims = jwtUtil.extractAllClaims(token);
            String username = claims.getSubject();

            if (username != null && SecurityContextHolder.getContext().getAuthentication() ==
null) {
                UsernamePasswordAuthenticationToken authToken =
                        new UsernamePasswordAuthenticationToken(username, null,
Collections.emptyList());
```

```
            authToken.setDetails(new
WebAuthenticationDetailsSource().buildDetails(request));
            SecurityContextHolder.getContext().setAuthentication(authToken);
         }
      }
      filterChain.doFilter(request, response);
   }
   @Override
   protected boolean shouldNotFilter(HttpServletRequest request) {
      return request.getServletPath().equals("/authenticate");
   }
}
```

JwtService.java:

```
package com.example.jwt_auth.service;


import io.jsonwebtoken.Jwts;
import io.jsonwebtoken.SignatureAlgorithm;
import io.jsonwebtoken.security.Keys;
import org.springframework.stereotype.Service;
import javax.crypto.SecretKey;
import java.util.Date;


@Service
public class JwtService {
   private final SecretKey key = Keys.secretKeyFor(SignatureAlgorithm.HS256);
   public String generateToken(String username) {
      return Jwts.builder()
            .setSubject(username)
            .setIssuedAt(new Date())
            .setExpiration(new Date(System.currentTimeMillis() + 3600000)) // 1 hour
```

```
                .signWith(key)
                .compact();
    }

    public boolean validateToken(String token) {
        try {
            Jwts.parserBuilder().setSigningKey(key).build().parseClaimsJws(token);
            return true;
        } catch (Exception e) {
            return false;
        }
    }

    public String extractUsername(String token) {
        return Jwts.parserBuilder()
                .setSigningKey(key)
                .build()
                .parseClaimsJws(token)
                .getBody()
                .getSubject();
    }
}
```

JwtUtil.java:

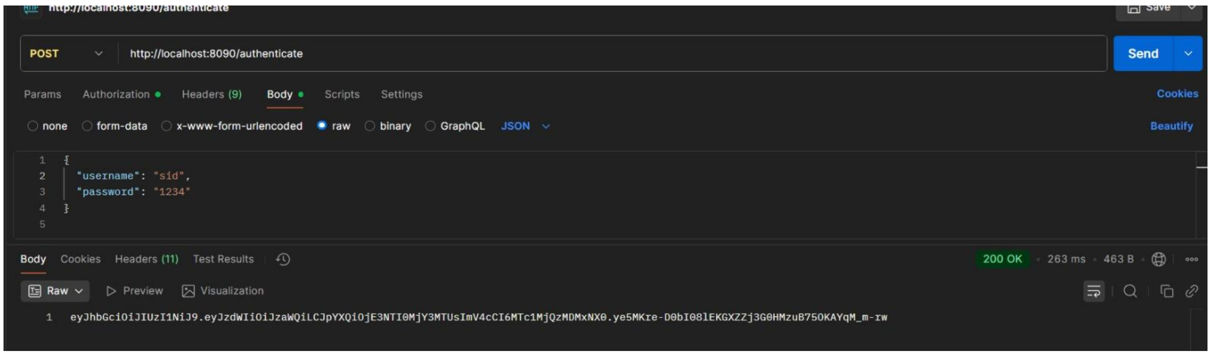
```
package com.example.jwt_auth.util;

import io.jsonwebtoken.*;
import org.springframework.stereotype.Component;

import java.util.Date;
import java.util.Base64;
import java.security.Key;
import javax.crypto.spec.SecretKeySpec;
@Component
public class JwtUtil {
   private final String SECRET_KEY = "mysecretkeymysecretkeymysecretkey"; // should be
256-bit for HS256
   private Key getSignKey() {
      byte[] keyBytes = Base64.getEncoder().encode(SECRET_KEY.getBytes());
      return new SecretKeySpec(keyBytes, SignatureAlgorithm.HS256.getJcaName());
   }
   public String generateToken(String username) {
      long currentTimeMillis = System.currentTimeMillis();
      return Jwts.builder()
            .setSubject(username)
            .setIssuedAt(new Date(currentTimeMillis))
            .setExpiration(new Date(currentTimeMillis + 1000 * 60 * 10)) // 10 minutes
            .signWith(getSignKey(), SignatureAlgorithm.HS256)
            .compact();
   }
   public Claims extractAllClaims(String token) {
      return Jwts.parserBuilder()
            .setSigningKey(getSignKey())
            .build()
            .parseClaimsJws(token)
            .getBody();
   }
   public String extractUsername(String token) {
      return extractAllClaims(token).getSubject();
   }
   public boolean validateToken(String token, String username) {
      String extractedUsername = extractUsername(token);
```

```
        return extractedUsername.equals(username) && !isTokenExpired(token);
    }
    private boolean isTokenExpired(String token) {
        return extractAllClaims(token).getExpiration().before(new Date());
    }
}
```

Output:



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```