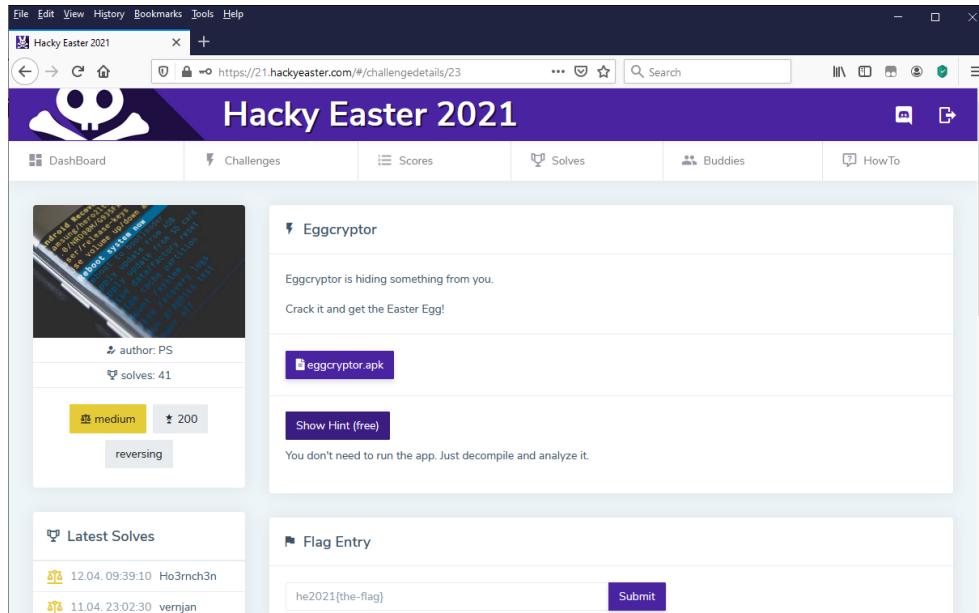


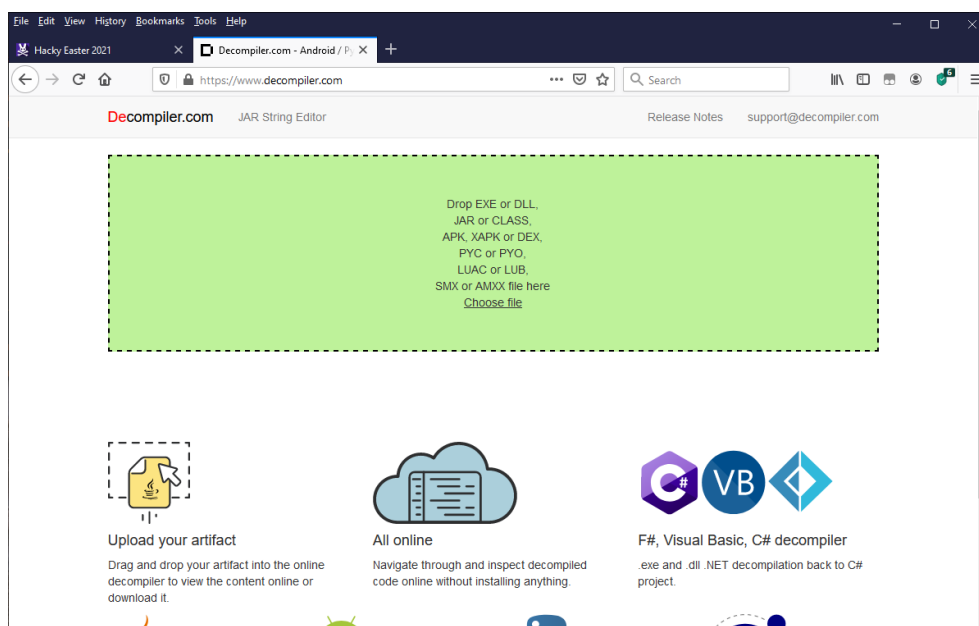
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Eggcryptor

1. Click the **Eggcryptor** image:



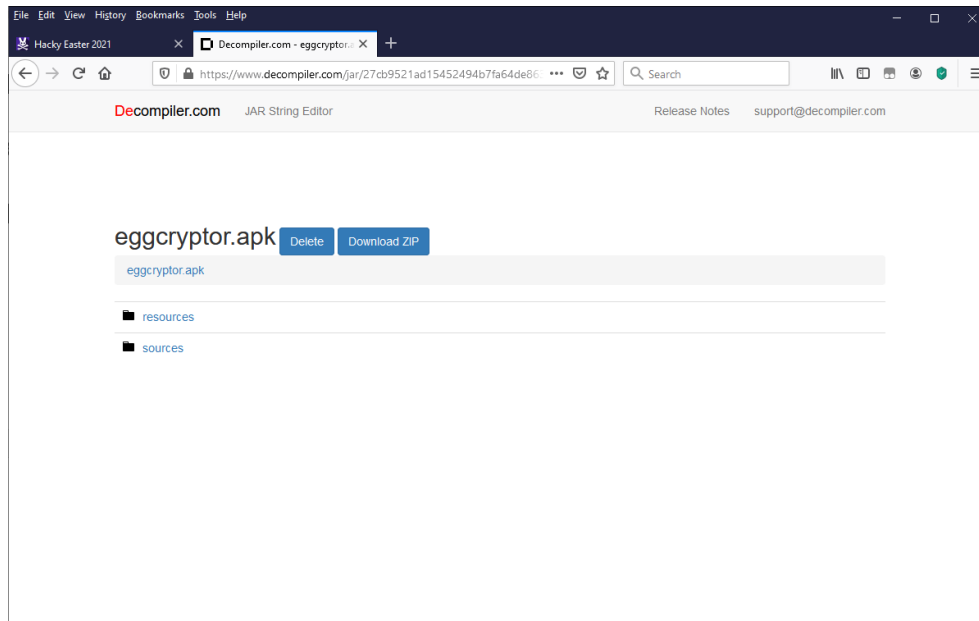
2. Click the **eggcryptor.apk** button and then click the **OK** button, to download the **eggcryptor.apk** file.
3. Click the **Second** tab.
4. Navigate to **https://www.decompiler.com/**:



5. Click the **Choose file** link.

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6. Select the **eggcryptor.apk** file:



7. Click the **Download ZIP** button.
8. Save the **eggcryptor.apk.zip** file.
9. Open a Windows Command Prompt.
10. Execute the following commands, from the Windows Command Prompt, to expand the **eggcryptor.apk.zip** file:

```
ren eggcryptor.apk.zip eggcryptor.zip
7z x -oeggcryptor eggcryptor.zip
```

```
7-Zip 18.05 (x64) : Copyright (c) 1999-2018 Igor Pavlov : 2018-04-30
```

```
Scanning the drive for archives:
1 file, 3459566 bytes (3379 KiB)
```

```
Extracting archive: eggcryptor.zip
--
Path = eggcryptor.zip
Type = zip
Physical Size = 3459566
```

```
Everything is Ok
```

```
Files: 1414
Size: 11619253
Compressed: 3459566
```

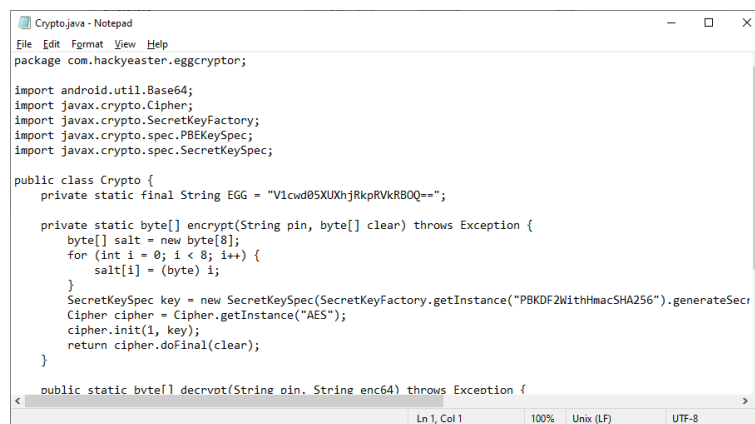
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11. Execute the following command, from the Windows Command Prompt, to display the contents of the `eggcryptor\sources\com\hackyeaster\eggcryptor` directory:

```
dir /b eggcryptor\sources\com\hackyeaster\eggcryptor
```

```
BuildConfig.java
Crypto.java
MainActivity.java
R.java
```

12. Start **Notepad**
13. Open the `eggcryptor\sources\com\hackyeaster\eggcryptor\Crypto.java` file:



```
Crypto.java - Notepad
File Edit Format View Help
package com.hackyeaster.eggcryptor;


import android.util.Base64;
import javax.crypto.Cipher;
import javax.crypto.SecretKeyFactory;
import javax.crypto.spec.PBEKeySpec;
import javax.crypto.spec.SecretKeySpec;

public class Crypto {
    private static final String EGG = "Vlcw05XUXhJRkpRVkRBOQ==";

    private static byte[] encrypt(String pin, byte[] clear) throws Exception {
        byte[] salt = new byte[8];
        for (int i = 0; i < 8; i++) {
            salt[i] = (byte) i;
        }
        SecretKeySpec key = new SecretKeySpec(SecretKeyFactory.getInstance("PBKDF2WithHmacSHA256").generateSecret(salt, clear, "AES"), "AES");
        Cipher cipher = Cipher.getInstance("AES");
        cipher.init(1, key);
        return cipher.doFinal(clear);
    }

    public static byte[] decrypt(String pin, String enc64) throws Exception {
        byte[] salt = Base64.decode(pin);
        SecretKeySpec key = new SecretKeySpec(SecretKeyFactory.getInstance("PBKDF2WithHmacSHA256").generateSecret(salt, enc64.getBytes(), "AES"), "AES");
        Cipher cipher = Cipher.getInstance("AES");
        cipher.init(2, key);
        return cipher.doFinal(enc64.getBytes());
    }
}
```

14. Open the `eggcryptor\sources\com\hackyeaster\eggcryptor\ MainActivity.java` file.
15. Scroll **Down** the window:



```
MainActivity.java - Notepad
File Edit Format View Help
Pattern p = Pattern.compile(getResources().getString(R.string.pattern));
byte[] b2 = null;
try {
    InputStream in = getResources().openRawResource(R.raw.raw);
    b2 = new byte[in.available()];
    in.read(b2);
    b = b2;
} catch (Exception e) {
    b = b2;
}
final String r = new String(b);
final Pattern pattern = p;
final EditText editText = pin;
final ImageView imageView = image;
button.setOnClickListener(new View.OnClickListener() {
    public void onClick(View view) {
        if (pattern.matcher(editText.getText()).matches()) {
            try {
                byte[] d = Crypto.decrypt(editText.getText().toString(), r);
                imageView.setImageBitmap(BitmapFactory.decodeByteArray(d, 0, d.length));
            } catch (Exception e) {
                imageView.setImageBitmap((Bitmap) null);
            }
        }
    }
});
```

The contents of the `raw.raw` file is being decrypted with an entered password.

16. Switch to the Windows Command Prompt.

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17. Execute the following commands, from the Windows Command Prompt, to copy the **raw.raw** and the **Crypto.java** files, to the current directory:

```
copy eggcryptor\resources\res\raw\raw.raw
copy eggcryptor\sources\com\hackyeaster\eggcryptor\Crypto.java
```

18. Execute the following command, from the Windows Command Prompt, to rename the **Crypto.java** file to **FindPin.java**:

```
ren Crypto.java FindPin.java
```

19. Switch to **Notepad**

20. Open the **FindPin.java** file.

21. Amend the contents of the file to the following:

```
import javax.crypto.Cipher;
import javax.crypto.SecretKeyFactory;
import javax.crypto.spec.PBEKeySpec;
import javax.crypto.spec.SecretKeySpec;
import java.util.Base64;
import java.io.File.*;
import java.nio.file.*;

public class FindPin {
    private static final String EGG = "V1c wd05XUXhjRkpRVkRBOQ==";

    public static byte[] decrypt(String pin, String enc64) throws Exception {
        byte[] salt = new byte[8];
        for (int i = 0; i < 8; i++) {
            salt[i] = (byte) i;
        }
        SecretKeySpec key = new SecretKeySpec(SecretKeyFactory.getInstance("PBKDF2WithHmacSHA256")
        .generateSecret(new PBEKeySpec(pin.toCharArray(), salt, 10000, 128)).getEncoded(), "AES");
        Cipher cipher = Cipher.getInstance("AES");
        cipher.init(2, key);
        return cipher.doFinal(Base64.getDecoder().decode(enc64));
    }

    public static void main(String[] args)
    {
        byte[] b;
        byte[] b2 = null;
        byte[] d = null;
        Path path = null;

        try {
            path = Paths.get("raw.raw");
            b2 = Files.readAllBytes(path);
            b = b2;
        } catch (Exception e) {
            b = b2;
        }

        final String r = new String(b);
        String Pin;
        boolean found = false;
        char letter = 'a';
        int num = 0;
```

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```

while (!found && letter < '{') {
    Pin = letter + String.format("%04d", num);

    try {
        d = decrypt(Pin, r);
    } catch (Exception e) {
    }

    if (d != null && d[0] == -119) {
        path = Paths.get("Pin_" + Pin + ".png");
        try {
            Files.write(path, d);
        } catch (Exception e) {
        }
        System.out.println("File Pin_" + Pin + ".png created");
        found = true;
    }
    num++;

    if (num == 10000) {
        num = 0;
        letter += 1;
    }
}
}
}
}

```

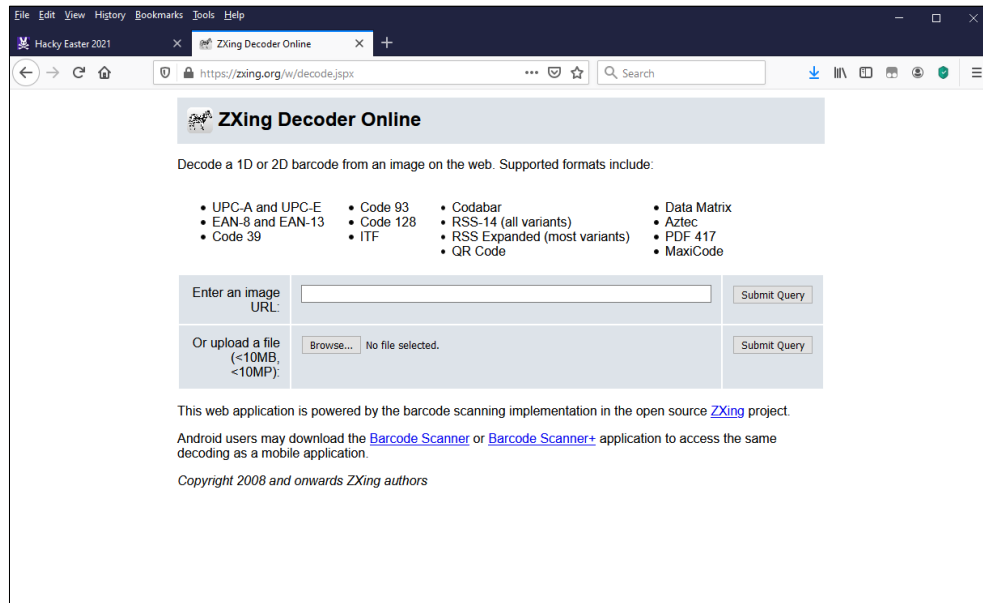
22. Save the amend file.
23. Close **Notepad**
24. Execute the following command, from the Windows Command Prompt, to execute the **FindPin.java** file:

java FindPin.java

File Pin_g0717.png created

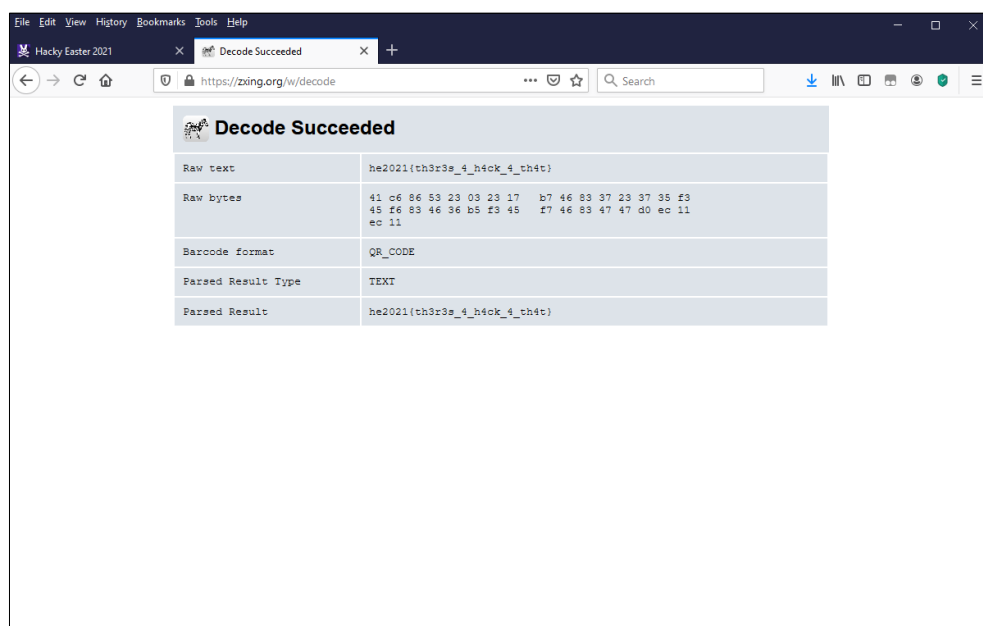
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25. Navigate to <https://zxing.org>:



26. Click the **Browse...** button and then open the **Pin_g0717.png** file.

27. Click the **Submit Query** button:



28. Close the **Second** tab.
29. Close the Windows Command Prompt.

Flag: **he2021{th3r3s_4_h4ck_4_th4t}**