STEP BY STEP GUIDE ON EMBEDDING JS IN PDFs

**Prerequisites**: Understanding the basic structure of a PDF:

- Header: declaring the PDF version
  The header always begins with %PDF- followed by the version number.
  e.g. : **%PDF-1.7**
- Body: Contains all the **objects** that make up the document — text, fonts, images, JavaScript, annotations, metadata, etc.
  Structure would be like:

```
3 0 obj
<<
/Type /Page
/Parent 1 0 R
/Resources 2 0 R
/Contents 4 0 R
>>
Endobj
```

  Here:
  3 0 obj — object number and generation number.
  /Contents 4 0 R — reference to another object (object #4).

(Now, this is the main part where the script goes in)

- Trailer: Points to the root object of the document.

```
trailer
<<
 /Root 1 0 R
 /Info 2 0 R
>>
%%EOF
```

  /Root — points to the catalog (the main entry point of the document).
  /Info — metadata like author, creation date.
  %%EOF — marks the end of the file.

For crafting PDF containing JS, we need mainly following objects: /Catalog,  / OpenAction and /JavaScript

- **/Catalog**: marks the root object of the PDF:

e.g: /Type /Catalog

- **/OpenAction**: Defines an action to perform when the document is opened

e.g:

- **/JavaScript**: Embedded script object

e.g: 6 0 obj << /S /JavaScript /JS (app.alert('test')) >> endobj

Now, let's get into the action:

1. Open your PDF in notepad. Locate the catalog:

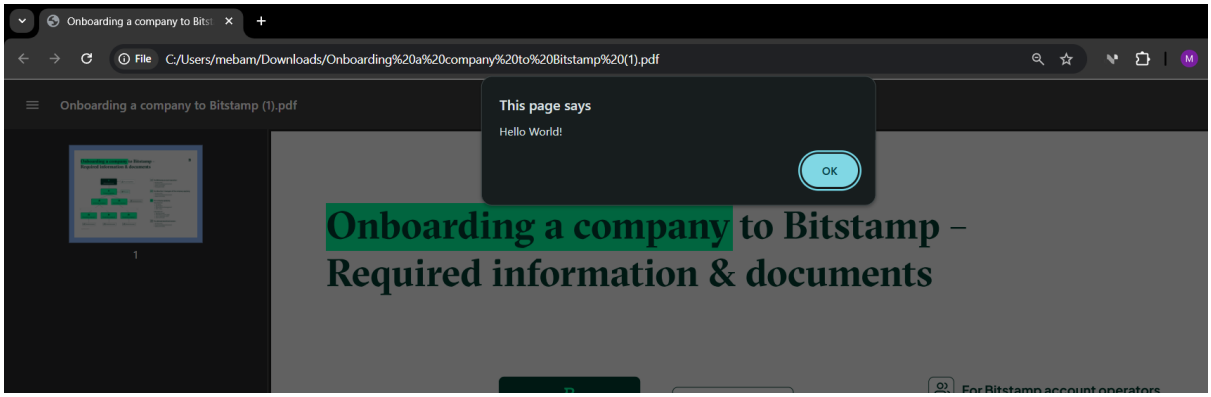
2. Add the following block of code in the PDF:

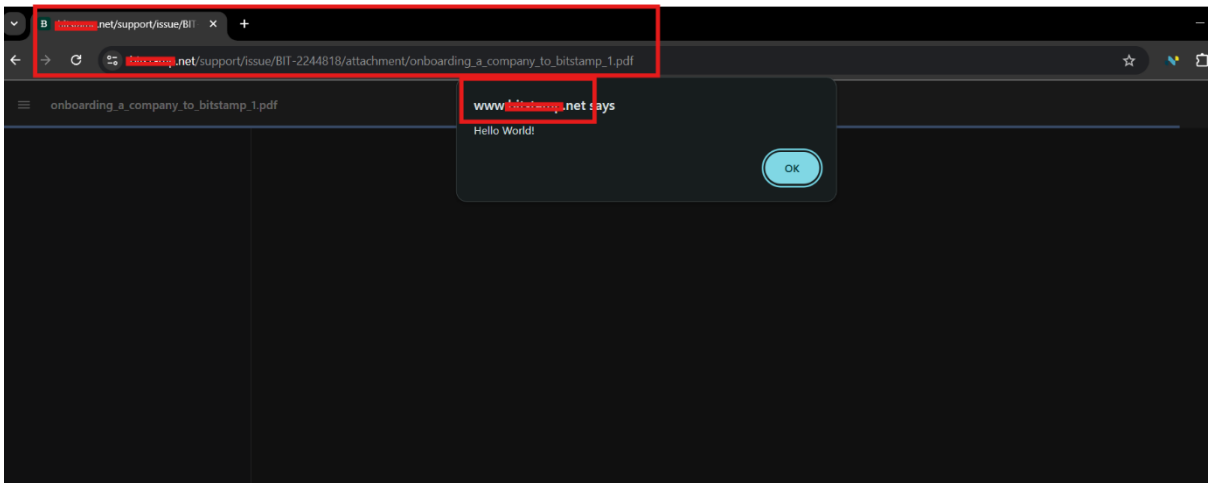
File Edit View

catalog

```
611 0 obj
  998453
endobj

612 0 obj
  << /Annots []
     /Type /Page
     /MediaBox [ 0.000000 0.000000 1663.000000 1180.000000 ]
     /Resources 609 0 R
     /Contents 610 0 R
     /Parent 613 0 R
  >>
endobj

613 0 obj
  << /Kids [ 612 0 R ]
     /Count 1
     /Type /Pages
  >>
endobj

614 0 obj
  << /Pages 613 0 R
     /Type /Catalog
      /Names << % the Javascript entry
        /JavaScript <<
          /Names [
             (EmbeddedJS)
              <<
                /S /JavaScript
                /JS (
                   app.alert('Hello World!');
                   )
               >>
              ]
            >>
          >>% end of JS entry
  >>
endobj
```

3. Save it and open in browser:




Real world example: