Presentation App

ENGI 9839 - Software Verification and Validation

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Can you read this?

- **Is this text readable?**
- How about this one?
- And this one?

What about these texts?

- **For example this one?**

- **Or this one?**

- **How about this one?**

Last test, I swear

The Industrial Revolution, spanning roughly from the late 18th to the mid-19th century, was a profound period of transformation that fundamentally altered economies, societies, and cultures worldwide. Originating in Britain before spreading to Europe, North America, and beyond, it marked the shift from agrarian economies based on manual labor and small-scale production to industrial economies characterized by mechanized manufacturing, technological innovation, and urbanization. Key inventions such as the steam engine, spinning jenny, and power loom revolutionized textile production, while advancements in transportation, including railways and steamships, facilitated broader markets and increased trade. This era also prompted significant social changes, including the rise of factory work, shifts in labor demographics, and the growth of urban centers, often accompanied by challenging working conditions and social upheaval. The Industrial Revolution fueled economic growth, increased productivity, and technological progress, laying the foundation for modern industrial society, but it also raised important questions about labor rights, environmental impacts, and social inequality that continue to resonate today............

Too long; didn't read

Motivation

- **Basic design rules**

- **Poor readability impacts presentations.**

- **Word overload distracts the audience**

How PresApp works?

- **User gives**

- **System calculates**
  - Contrasts
  - Font sizes
  - Number of words
- **Output**
  - Detailed report
  - Feedback

Challenges

- **PDF files**
    - Malformed files
    - Non-presentation documents
    - Images on files
- **Automated tests**
- **Feedback**

Do you even test, bro?

- **Unit tests**
  - For each feature
    - Login
    - Isolated score calculation

- **System tests**
  - File upload
  - Contrast score
  - Word number score

```python
class UtilsContrastTests(TestCase):
    def setUp(self):
        self.user = User.objects.create_user(username='Test_User', password='secret')
        self.client = Client()
        self.client.login(username='Test_User', password='secret')
        self.test_pdf_location = 'test_pdf/contrast.pdf'
        self.filename = "Test Example"
        self.upload_folder = os.path.join('media', 'uploads', 'Test_User')
        self.bg_white = (255,255,255)

        if os.path.exists(self.upload_folder):
            shutil.rmtree(self.upload_folder)

    # This is an integration test, from the moment a PDF is uploaded to obtaining the grades.
    def test_contrast_calculation_system_test(self):
        ''' Contrast calculation test, using the file font_sizes.pdf '''
        with open(self.test_pdf_location, 'rb') as pdf_file:
            _ = self.client.post(
                reverse('presentation:upload'),
                {'title': self.filename,
                 'pdf_file': pdf_file}
            )

        saved_path = os.path.join(
            'media', 'uploads', 'Test_User', self.filename, self.filename + '.pdf'
        )
        image_folders = os.path.join(
            'uploads', 'Test_User', self.filename, 'images'
        )
        text_boxes = extract_text_boxes(saved_path)
        contrast_scores = score_contrast(text_boxes, image_folders, self.filename)

        # This is intentional, as these scores are averaged between the different word extracts
        self.assertListEqual(contrast_scores, [2.0, 4.0, 3.2, 3.5, 3.1, 2.4, 1.8])
```
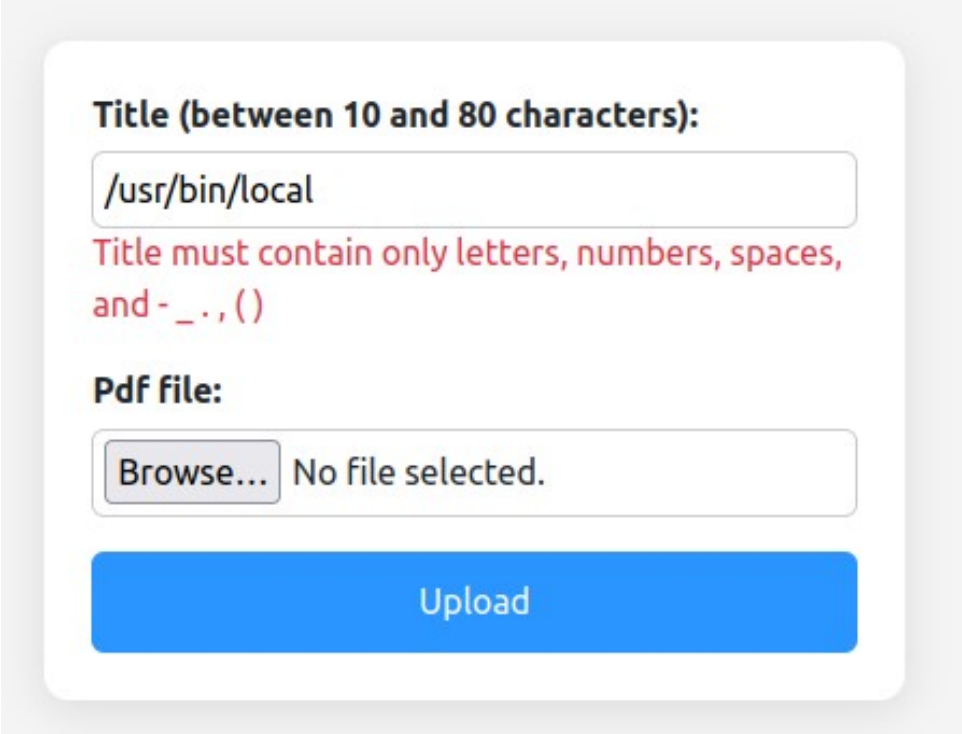
9

But wait, there's more!

- **Exploratory test**
  - FedEx tour
    - PDF to images
    - Images to text boxes
    - Scores
  - Seedy district tour
    - Corrupted/Malformed PDF
    - Path expressions

Title (between 10 and 80 characters):

/usr/bin/local

Title must contain only letters, numbers, spaces, and - _ . , ( )

Pdf file:

Browse... No file selected.

Upload

Limitations

- **No support for PPT file**
- **Does not analyze images**
- **File size limitations**
- **Does nothing with the 'Title' data**
  - Idea to analyze content
- **Blind to the PDF file**
- **And much more.........**

References

- **Project**

  - https://github.com/LeoEras/PresentationWebApp

- **WCAG guidelines, general guidelines**

  - https://www.w3.org/TR/WCAG21/#contrast-minimum

  - https://www.w3.org/TR/WCAG21/#dfn-relative-luminance

  - https://guykawasaki.com/the-only-10-slides-you-need-in-your-pitch/

  - https://docs.djangoproject.com/en/5.2/topics/testing/

  - https://docs.djangoproject.com/en/5.2/topics/testing/overview/

  - https://www.microsoft.com/en-us/microsoft-365-life-hacks/presentations/10-20-30-rule-of-powerpoint