

Nástroj pro kontrolu diplomových prací

Michaela Macková

Vedoucí: Ing. Tomáš Milet, Ph.D.



12. června 2023

Kapitola 3

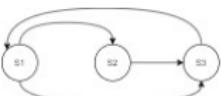
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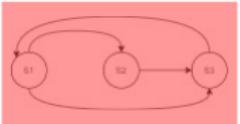
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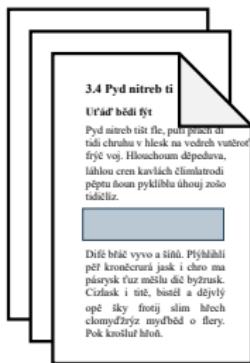
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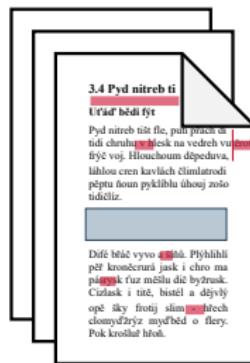
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- Krátký/dlouhý řádek

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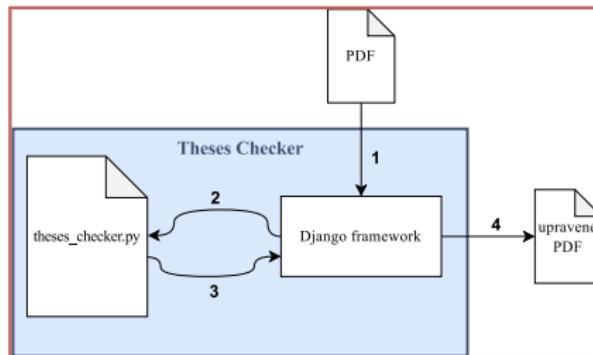
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- Simulace struktury graphics state a procházení content streamu

4.4 Implementace webové aplikace

Výsledná webová aplikace byla vyvinuta s pomocí Django frameworku. Nahraný soubor se pošle na server pomocí HTTP požadavku metodou POST a uloží se ve specifické složce. Poté se pomocí třídy `Checker` uložené v souboru `theses_checker.py` (popsáno dál v kapitole 4.6) tento soubor zkонтroluje a přidají se anotace. Tento výstupní soubor se opět uloží na server do určité složky a původní soubor se ze serveru odstraní. Následně bude uživatel přesměrován na stránku, která zobrazí výstupní anotovaný dokument. Po zobrazení tohoto dokumentu na stránce je dokument odstraněn ze serveru. Postup zpracování nahraného PDF souboru je naznačen na obrázku 4.4.



Obrázek 4.4: Tento obrázek popisuje postup komunikace webové aplikace mezi frameworkm Django a programem pro vyhledávání chyb v PDF dokumentu

3.1 Newton

3.1.1 Unit

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Figure 3.1: Visualisation of Newton

In 1946, the Conférence Générale des Poids et Mesures(CGPM) Resolution 2 standardised the unit of force in the MKS system of units to be the amount needed to accelerate 1 kilogram of mass at the rate of 1 metre per second squared. In 1948, the 9th CGPM Resolution 7 adopted the name newton for this force.¹ The MKS system then became the blueprint for today's SI system of units. The newton thus became the standard unit of force in the Système international d'unités (SI), or International System of Units.

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In more formal terms, Newton's second law of motion states that the force exerted on an object is directly proportional to the acceleration hence acquired by that object, thus equation(3.1), where m represents the mass of the object undergoing an acceleration a :

$$F = ma \quad (3.1)$$

3.1.2 Isaac Newton

Sir Isaac Newton FRS (25 December 1642 - 20 March 1726/27) was an English mathematician, physicist, astronomer, alchemist, theologian, and author who was described in his time as a natural philosopher. He was a key figure in the Scientific Revolution and the Enlightenment that followed. His pioneering book *Philosophiae Naturalis Principia Mathematica*(Mathematical Principles of Natural Philosophy), first published in 1687, consolidated many of his previous results and established classical mechanics. Newton also made seminal contributions to optics, and shares credit with German mathematician Gottfried Wilhelm Leibniz for developing infinitesimal calculus.^[5]

¹more here - https://books.google.cz/books?id=YvZNcISdeCnEC&pg=PA17&redir_esc=y#v=onepage&q&f=false

- Chybějící text mezi názvy sekcí

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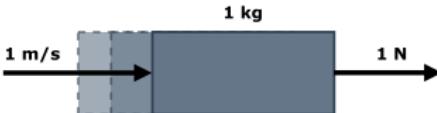


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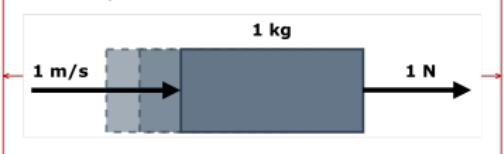


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Sir Isaac Newton FRS (25 December 1642 – 20 March 1726/27) was an English mathematician, physicist, astronomer, alchemist, theologian, and author who was described in his time as a natural philosopher. He was a key figure in the Scientific Revolution and the Enlightenment that followed. His pioneering book *Philosophiae Naturalis Principia Mathematica* (Mathematical Principles of Natural Philosophy), first published in 1687, consolidated many of his previous results and established classical mechanics. Newton also made seminal contributions to optics, and shares credit with German mathematician Gottfried Wilhelm Leibniz for developing infinitesimal calculus.^[5]

¹more here: https://books.google.cz/books?id=YvZNdSdeCuEC&pg=PA17&credit_esc=y#v=onepage&q=&f=false

- Chybějící text mezi názvy sekcí
- Špatné použití spojovníku
- Vynechaná mezera před levou závorkou
- Přetečení za okraj stránky
- Nevhodná šířka obrázku
- Odkaz na neexistující referenci
- Nadpisy třetí a větší úrovně v obsahu

3.1 Newton

3.1.1 Unit

A newton is defined as $1 \text{ kg} \cdot \text{m/s}^2$ (it is a derived unit which is defined in terms of the SI base units). One newton is therefore the force needed to accelerate one kilogram of mass at the rate of one metre per second squared in the direction of the applied force. The units „metre per second squared“ can be understood as measuring a rate of change in velocity per unit of time, i.e. an increase in velocity by 1 metre per second every second. Visualisation of this is seen on figure 3.1.

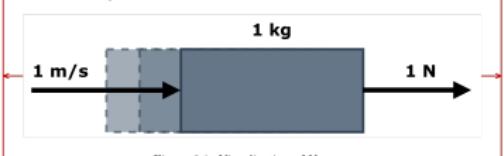


Figure 3.1: Visualisation of Newton

In 1946, the Conference Générale des Poids et Mesures (CGPM) Resolution 2 standardised the unit of force in the MKS system of units to be the amount needed to accelerate 1 kilogram of mass at the rate of 1 metre per second squared. In 1948, the 9th CGPM Resolution 7 adopted the name newton for this force.¹ The MKS system then became the blueprint for today's SI system of units. The newton thus became the standard unit of force in the Système International d'unités (SI), or International System of Units.

The newton is named after Isaac Newton (see chapter ??). As with every SI unit named for a person, its symbol starts with an upper case letter (N), but when written in full it follows the rules for capitalisation of a common noun; i.e., „newton“ becomes capitalised at the beginning of a sentence and in titles, but is otherwise in lower case.

In more formal terms, Newton's second law of motion states that the force exerted on an object is directly proportional to the acceleration hence acquired by that object, thus equation (3.1), where m represents the mass of the object undergoing an acceleration a :

$$F = ma \quad (3.1)$$

3.1.2 Isaac Newton

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Dvojdimenzióny súradnicový systém

Súradnicový systém v PDF určuje pozíciu, smer a veľkosť všetkých objektov, ktoré sa nachádzajú na stránkach dokumentu (text, obrázky atď.). Typ súradnicového systému, ktorý používa výstupné zariadenia ako tlačiareň a monitor pre zobrazenie PDF stránok, sa nazýva *device space*. Tento systém je závislý na vlastnostach zariadenia, v dôsledku čoho pri zobrazení na výstupe sa objekty môžu nachádzať v inej polohе ako je v zdrojovom dokumente. Táto vlastnosť je načrtnutá na obrázku 2.3. Device space sa odlišuje od typu používaneho na PDF stránkach tým, že jeho počiatočný bod súradnice(x=0, y=0) je umiestnený v levom hornom rohu stránky. X-ová súradnica sa pohybuje smerom dolava a y-ová smerom dole pri zvýšení ich hodnoty.

2 Preliminaries

- 2.1 Basic Notions . . .
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- 2.2.3 Universal Re
- 2.2.4 Alternating I
- 2.2.5 Alternating E
- 2.3 Regular Expressions
- 2.3.1 Regular Exp

Projektivní transformace (Projective)

Poslední třída umožňuje využití perspektivních transformací. Jedinou vlastnost, kterou v obraze udržuje, je rovnost čar či hran. Její stupeň volnosti je 8.

2.2 Regrese transformace zarovnání na základě klíčových bodů

Tato část se zabývá regresí transformace zarovnání z páru klíčových bodů [21, 10, 22] detekovaných na zarovnávaných obrázcích.

Pro zarovnání obrázků s detekovanými klíčovými body je potřeba vypočítat transformační matici, pro kterou platí, že po její aplikaci na zdrojový klíčový bod bude daný bod roven cílovému. Vztah $H \times P = P'$ je popsán v rovnici (2.5).

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PS E:\> python .\check.py .\21395.pdf '.\22208 - eng.pdf' -i -t
New file '21395_annotated.pdf' was created. -> no mistakes found
New file '22208 - eng_annotated.pdf' was created. -> mistakes were found
PS E:\>
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je ľubovoľná funk-

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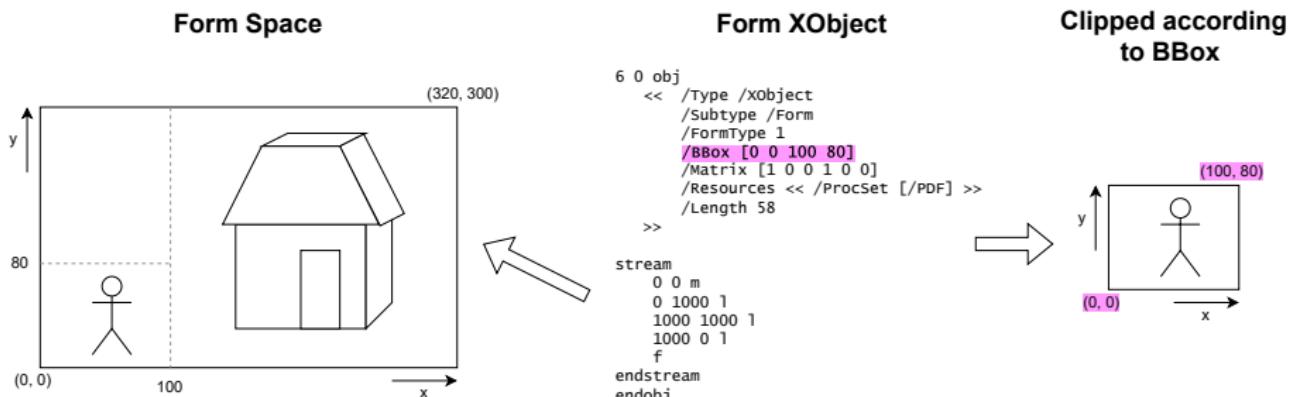
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- „Jakou operaci popisuje na str. 20 věta „Ostříhne se na základě slovníkového prvku **BBox**. “?“
- Standard PDF:
„Clips according to the form dictionary's **BBox** entry“



- „Vysvětlete, co znamená, že znaky „zapadají do rozmezí mezi znakem vykříčníku (!) a znakem tildy (~)” (str. 10 ve zprávě).“

dec	hex	oct	char	dec	hex	oct	char	dec	hex	oct	char	dec	hex	oct	char
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2	2	002	STX	34	22	042	"	66	42	102	B	98	62	142	b
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7	7	007	BEL	39	27	047	'	71	47	107	G	103	67	147	g
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18	12	022	DC2	50	32	062	2	82	52	122	R	114	72	162	r
19	13	023	DC3	51	33	063	3	83	53	123	S	115	73	163	s
20	14	024	DC4	52	34	064	4	84	54	124	T	116	74	164	t
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22	16	026	SYN	54	36	066	6	86	56	126	V	118	76	166	v
23	17	027	ETB	55	37	067	7	87	57	127	W	119	77	167	w
24	18	030	CAN	56	38	070	8	88	58	130	X	120	78	170	x
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- „Bylo by obtížné do aplikace zakomponovat i opravu gramatiky, např. pomocí existujících knihoven?“