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# TRANSLATING THE STONE

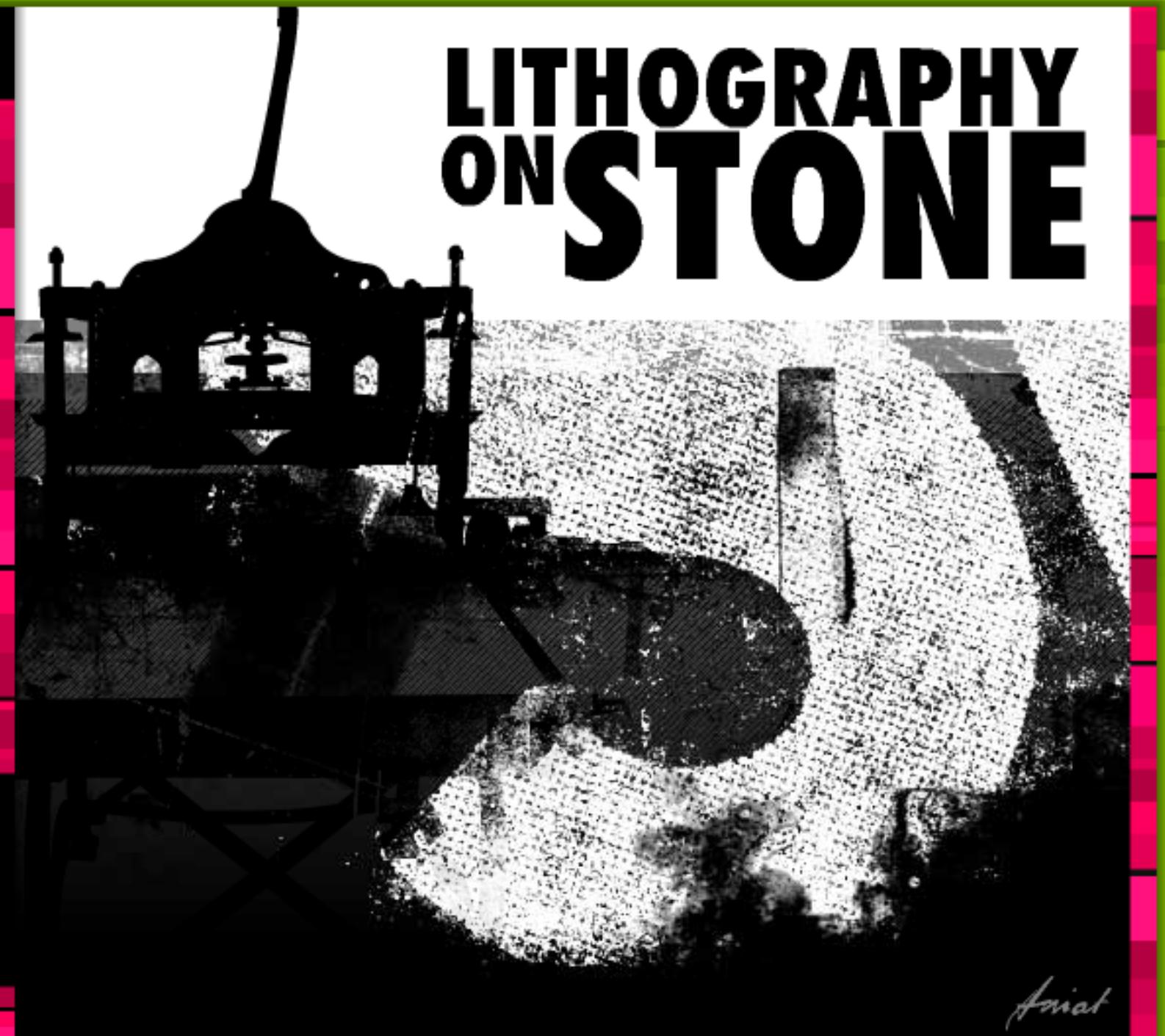
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dr Anna Trojanowska

Faculty of Graphic Art and Media Art  
The Eugeniusz Geppert Academy of Art And Design  
in Wrocław

2004

[www.litografia.pl](http://www.litografia.pl)



**LITHOGRAPHY  
ON STONE**

HOME

LITHOGRAPHY

LITHOGRAPHIC PRESS

PREPARING THE STONE

DRAWING AND PROCESSING

ETCHING THE STONE

REGISTRATION MARKS

THE ROLL-UP

PRINTING

TEST

LINKS

LIST OF TERMS

UNUSUAL TECHNIQUES

CONTACT

This presentation was made in the lithographic workshop in the Graphic Department of Academy of Fine Arts in Wrocław  
prof. Paweł Frąckiewicz  
ass. Anna Trojanowska  
created by Anna Trojanowska

*anat*

# 2004

[www.litografia.pl](http://www.litografia.pl)

Senefelder and invention of lithography

## LITHOGRAPHY

- ◀ LITHOGRAPHY
- ▶ ALOYS SENEFELDER
- ◀ LITHOGRAPHY DEVELOPMENT
- ◀ WHEN LITHOGRAPHY HAS INVENTED?

**HOME**

**LITHOGRAPHY**

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**UNUSUAL TECHNIQUES**

**CONTACT**

Seneffeler invented Lithography. He was born In Prague in 1771, 6th November. He was born in a house by Rycerska Street. There is a hypermarket now on the place where was the house. His mother was a laundress and his father was an actor. These are his all first names: Johann, Nepomuk, Franciszek, and Alojzy. His father sent him to study law in Munich Royal Academy. After his father death, at the age of 19 young Seneffeler quitted the Academy and joined a group of actors to do what he loved and to help his mother a bit. Alojzy was a talented actor and play writer! Alojzy wanted to earn a fortune selling his plays but the printing costs were too high for him to afford publishing them.

His invention was provoked by his need of cheap and quick publishing of his plays. The publishers were not interested to cooperate with him so he decided to publish his plays himself. At the very beginning he wanted to copy his texts from copper, steel and zinc slabs but the methods appeared too expensive.

During printing on the copper slabs he used to mix the paints on a piece of stone he had found around

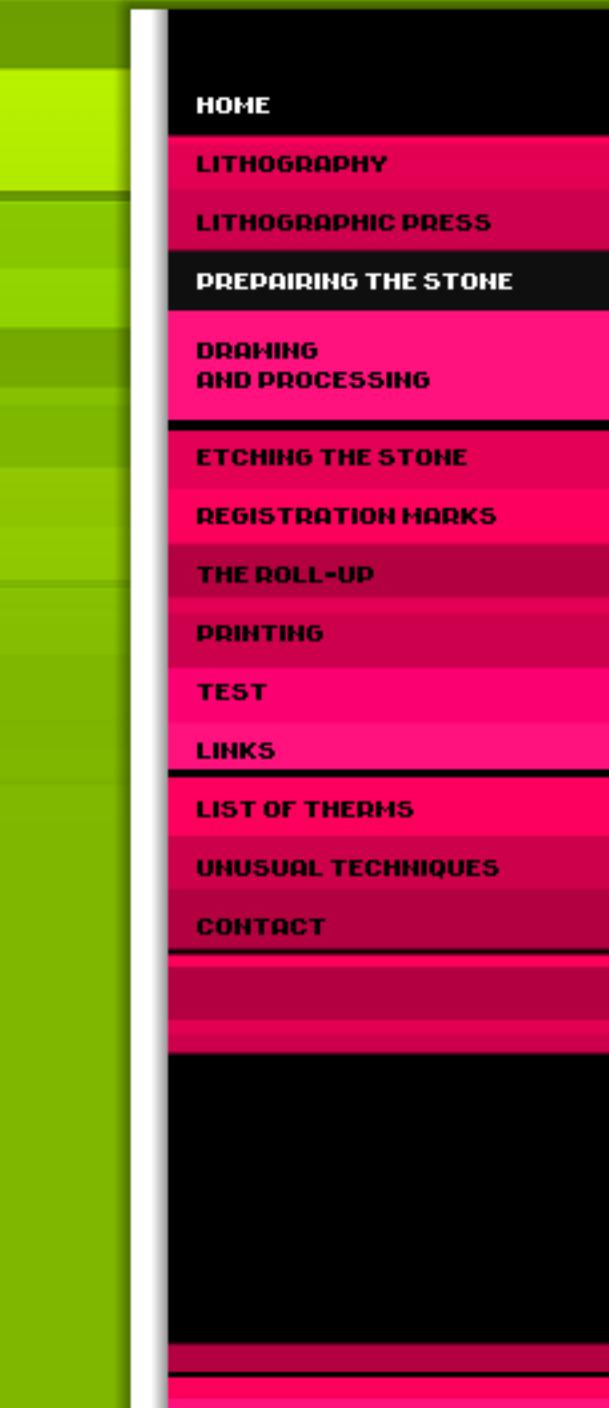


# 2004

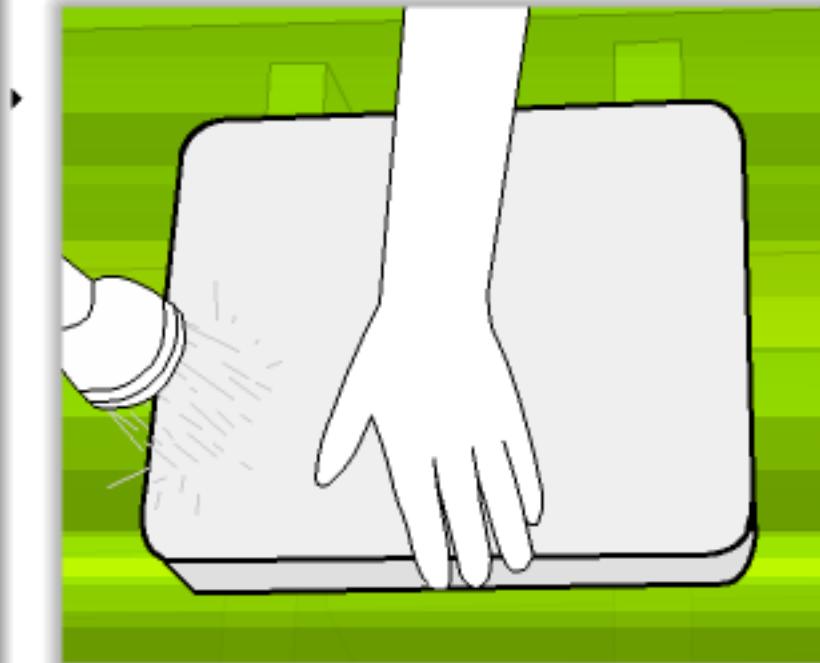
[www.litografia.pl](http://www.litografia.pl)

Senefelder and invention of lithography

Basic processes and printing



## PREPAIRING THE STONE



- HATER**
- APPLYING CARBORUNDUM
- GRINDING THE STONE
- REMOVING THE CARBORUNDUM
- LEVELING THE STONE
- SCRATCHING THE EDGES
- REMOVING WATER WITH THE SPONGE

▶ PLAY ■ STOP

The stone to be ground is placed on the graining table and thoroughly washed with water. All surface dirt and grit must be carefully removed. Grinding may then begin, using either a levigator or a second stone. Grinding of larger stones is both easier and quicker with the levigator. The use of two stones permits both to be grained at once. This method, although safe and efficient when the two stones are of similar size, must be used with great care when one stone is much smaller than the other, for uneven grinding can easily come about.

When two stones are ground together, the drawing on the upper stone will be effaced more quickly than the drawing on the lower stone; hence grinding should begin with the darker and heavier image on top. Midway in the graining process, the position of the two stones should be reversed.

The stone should be covered with a thin film of water when the abrasive is sprinkled on. Only experience will indicate the correct proportion of water to abrasive. If too much abrasive is used and not enough water, the grinding will be difficult and exhausting, although grinding action will be faster. If too much

# 2004

[www.litografia.pl](http://www.litografia.pl)

Senefelder and invention of lithography

Basic processes and printing

The screenshot shows a website for lithography. On the left is a vertical navigation menu with links: HOME, LITHOGRAPHY, LITHOGRAPHIC PRESS, PREPARING THE STONE, DRAWING AND PROCESSING, ETCHING THE STONE, REGISTRATION MARKS, THE ROLL-UP, PRINTING, TEST, LINKS, LIST OF TERMS, UNUSUAL TECHNIQUES, and CONTACT. The main content area features a large green background with a white rectangular frame representing a stone. A hand is shown applying gum to the edges of the frame. To the right, there's a circular container labeled 'rosin' containing a brush. A magnifying glass icon is at the bottom left. Above the main image, a horizontal bar lists steps: applying gum on the edges, drawing, rosin, talc, gum arabic/etching, turpentine, asphaltum, and the roll-up. Below the main image is a descriptive text block.

Processing the drawing to prepare it for printing is one of the critical phases of lithography. Because mistakes at this point can easily destroy the drawing on the stone, the greatest care must be taken to proceed correctly and to understand fully each step involved. The aim of processing is to separate chemically the image and nonimage areas of the drawing so that they will receive or reject ink consistently. When processing begins, the image areas consist of passages drawn with greasy lithographic crayon or tusche. Through chemical processing the fatty-acid particles contained in

## DRAWING AND PROCESSING

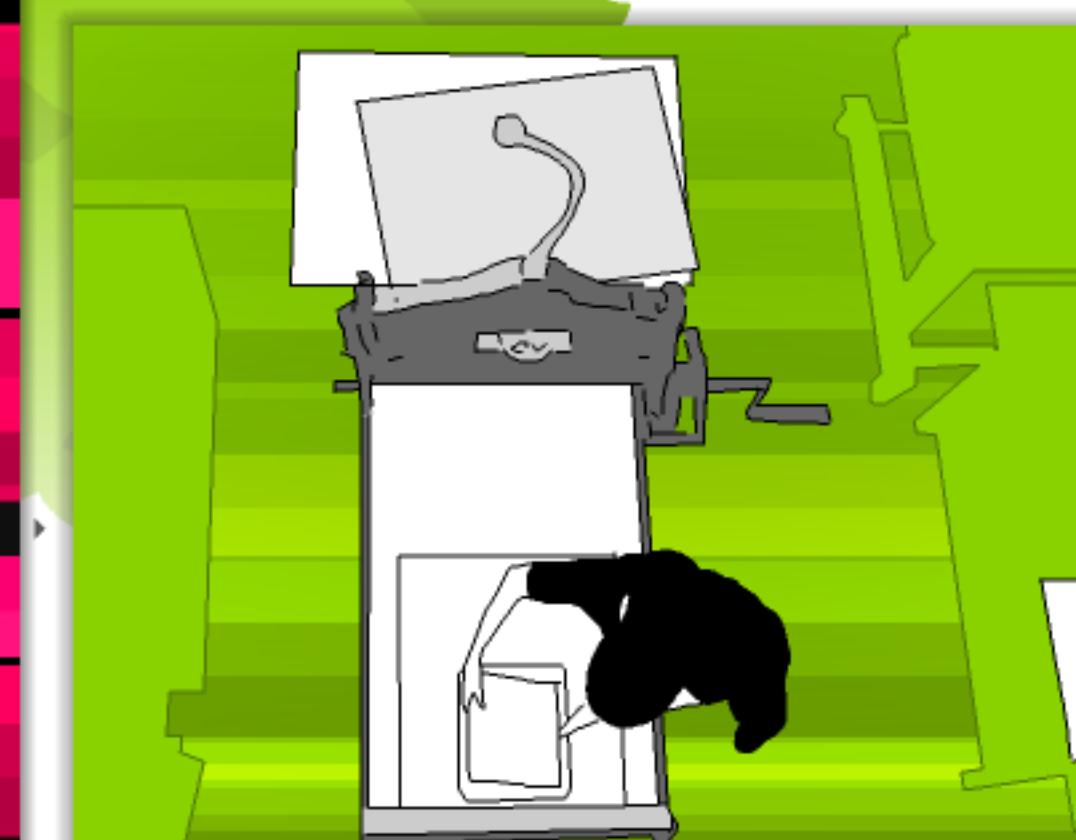
# 2004

[www.litografia.pl](http://www.litografia.pl)

Senefelder and invention of lithography

Basic processes and printing

**PRINTING**



PLAY STOP

Printing from stone matrix is much quicker than in case of convex and concave printing techniques. Rolling up the stone before making each print takes only few minutes. Before we start printing we have to prepare paper for the edition, paper for proof prints, we have to mark registration marks. We need to prepare bowls full of clean cold water, a sponge to wet the stone during rolling up the stone, and almost dry sponge to absorb water redundancy. You have to set up the stone at the end of the press table. Without moving down the handle, move the table with the stone to the scraper (to the exact place where the scraper is over the stone but in front of the drawing). The optimal position is where the scraper is in front of the paper. You have to mark this place

HOME  
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# 2004

[www.litografia.pl](http://www.litografia.pl)

Senefelder and invention of lithography

Basic processes and printing

Glossary - list of thermes

◀ HOME      LIST OF THERMS      ▶

◀ MENU



## 5. GUM ARABIC

Gum arabic is one of the most important image desensitizers used in lithography. It displays two important properties: (1) it is hydrophilic (water-loving), hence, its coatings are more receptive to water than to the fatty contents of printing ink; (2) its dried coatings, although water-soluble, hold tightly to the nonimage areas of the printing surface.

This layer cannot be removed even with further additions of water. Many other natural and synthetic material are hydrophilic, and some are capable of adsorption on the printing surface. Some of these are gum tragacanth, cherry gum, larch gum, mesquite gum, carbohymethyl cellulose (CMC), dextrines, alginates... With the exception of CMC, none is so effective a lithographic desensitizer as gum arabic.

Gum arabic is obtained from the dried gummy substance of the acacia tree, which grows in Arabia, Senegal, Egypt, India, and the Sudan. This particular variety seems to have superior properties for lithography. The gum exudes naturally from the trunk and branches of the tree in the form of tears, which harden when exposed to air. These tears are separated from the bark and sand, and, after being sorted and graded for quality, are packed for shipment.

Gum arabic falls in the class of noncrystalline carbohydrates that form colloidal solutions. Chemically, gum arabic is usually considered to be a mixture of calcium, potassium, and magnesium salts of arabic acid with some free arabic acid. When nitric or phosphoric acid is added to gum arabic to make lithographic etches, most of the salts of the arabic acid are converted to free-acid form. In this condition the solutions produce the most effective desensitization.

Pure gum arabic can be obtained from lithographic suppliers in powdered, crystalline, or liquid form. The liquid form is formulated particularly for offset lithography; it is, however, by far the most efficient for handprinting purposes as well. Research has shown that gum arabic solutions perform best for all-round use when they are low in viscosity and high in solid content. The advantages of commercially prepared liquid gums are many. These gums are clean and free from residue, are of controlled formulation (which ensures that each batch is exactly the same), and, more important, they are nonsouring, so that stock solutions can be kept for indefinite periods of time.

Powdered and crystalline forms of gum arabic can be liquefied by mixing with water. Although hand-prepared solutions of gum arabic rarely have the same consistency from one batch to another, it is well to know how they are made.

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Senefelder and invention of lithography

Basic processes and printing

Glossary - list of terms

maximum 8 points are available **SCORE: 4**

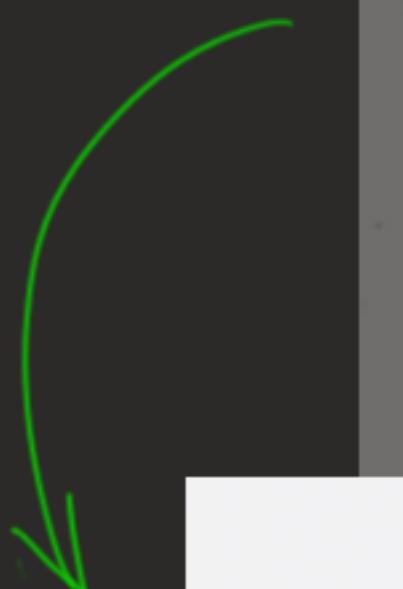
## TEST

COMPETENCE IN PREPARING THE STONE FOR PRINTING PROCESS

Processing the drawing to prepare it for printing is one of the critical phases of lithography. Because mistakes at this point can easily destroy the drawing on the stone, the greatest care must be taken to proceed correctly and to understand fully each step involved.

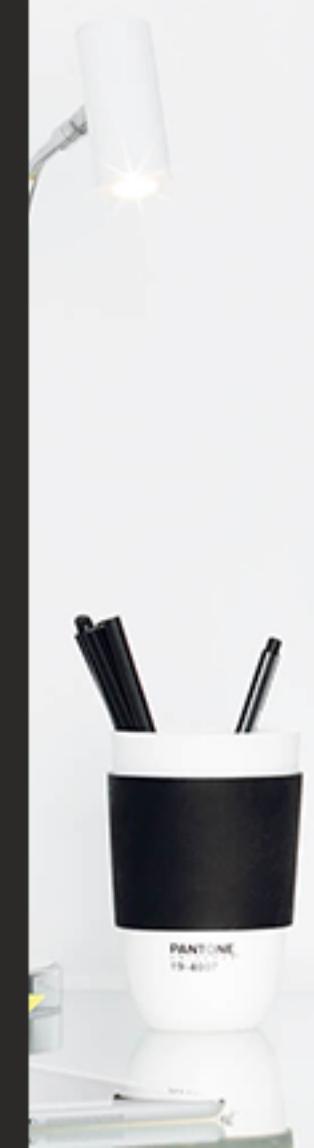
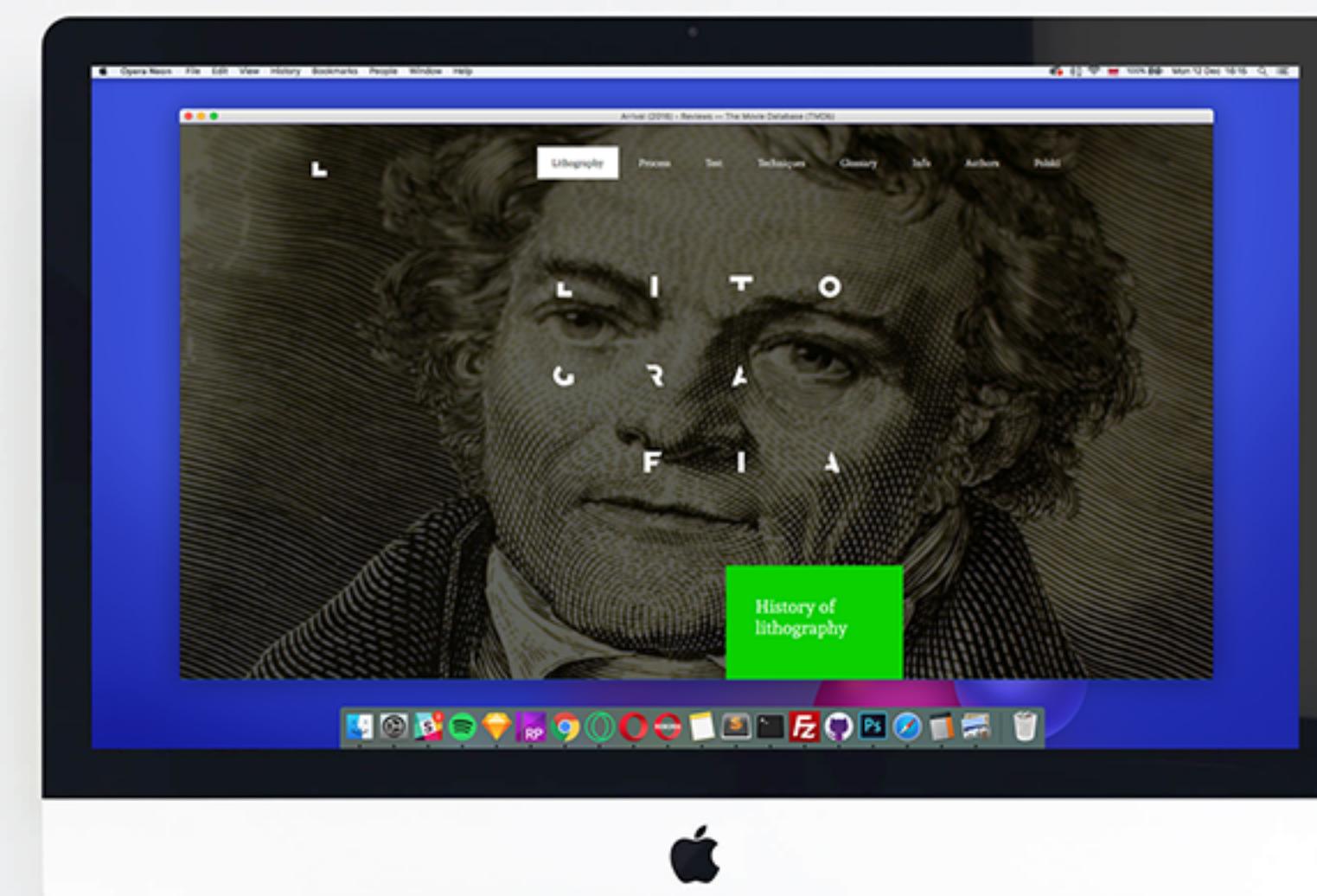
- HOME
- LITHOGRAPHY
- LITHOGRAPHIC PRESS
- PREPARING THE STONE
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# TRANSLATING THE STONE INTO DIGITAL LANGUAGE



horizontal aufeinander. Anfänglich kommen einige Schichten aus lockeren Steinslagen, welche oft aus mehreren hundert, wie Papier dünnen Blättern bestehen, das von sich bei gehöriger Vorsicht jedes Blatt ablösen lässt. Diese Schichten sind zu nichts brauchbar, weil sie wenig Festigkeit besitzen, aber doch zu fest, und auch zu wenig weiß sind, um allenfalls eine Art Kreide zu bilden.

Der Solenhofer-Stein besteht nach chemischer Zersetzung größtentheils aus Kalkerde und Kohlensäure. Er löst sich in Salpeter-, Salz- und andern Säuren fast gänzlich auf, wobei die Kohlensäure in luftartiger Gestalt entbunden wird, und entweicht. Da die verschiedenen Marmorarten fast die nämlichen Bestandtheile haben, so sollte man glauben, auch Marmorplatten zum Steindruck gebrauchen zu können. Hier aber machen theils die dunklen ungleichartigen Farben der meisten Marmorgattungen, hauptsächlich aber die vielfältigen Risse und Adern ein beträchtliches Hinderniß. Demungeachtet habe ich manche ziemlich gleichfarbige Stücke von grünlichem, grauem, bläuliche und bräunlichem Baierischen und Tyroler-Marmor zu einigen lithographischen Manieren, besonders wegen ihrer größern Härte sehr brauchbar gefunden; indes wird doch der Solenhofer-Stein in Hinsicht der hellen Farbe, und der außergewöhnlichen Weichheit bei weitem zum Druckgebrauch den Vorzug behalten.\*).

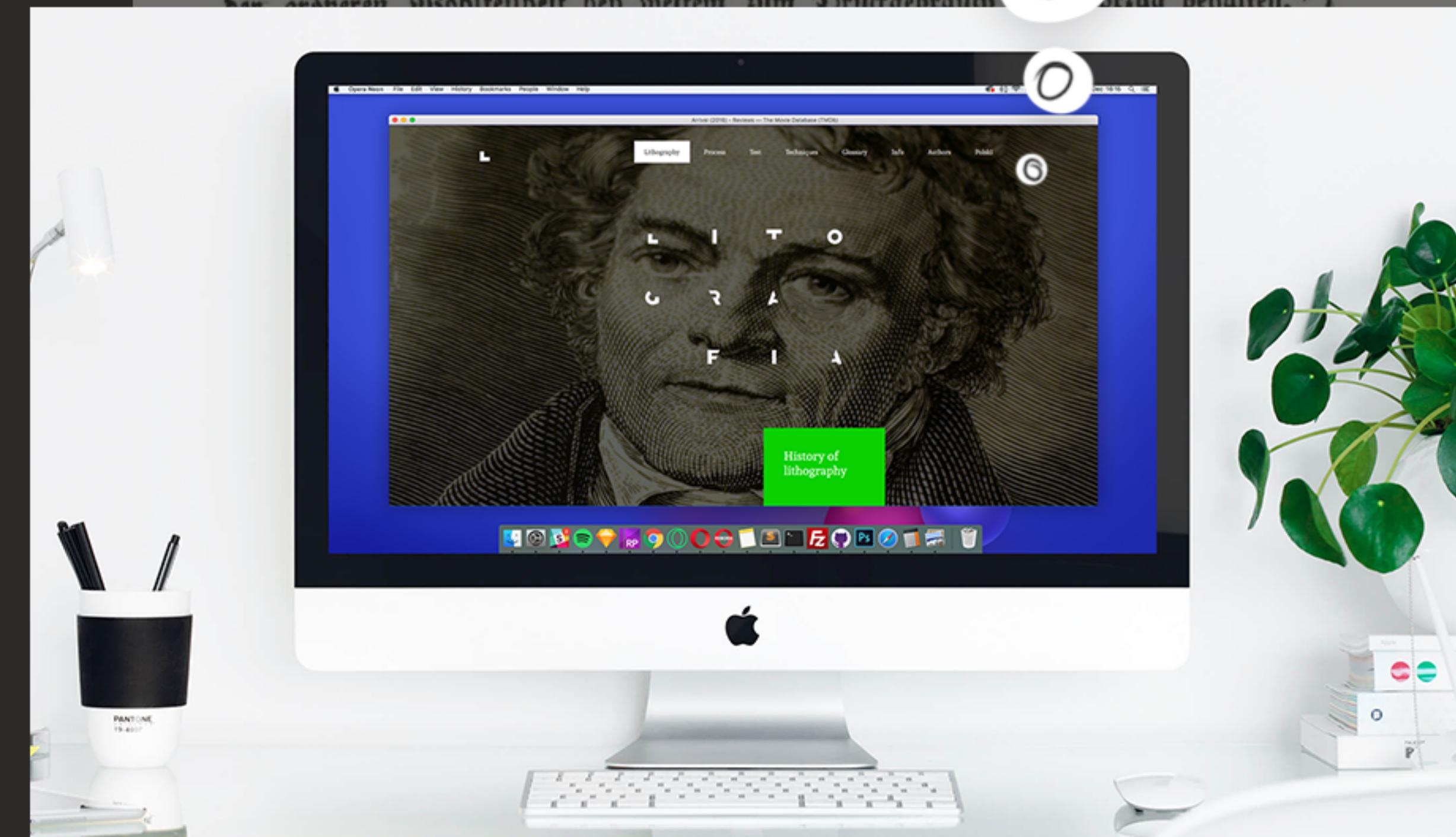


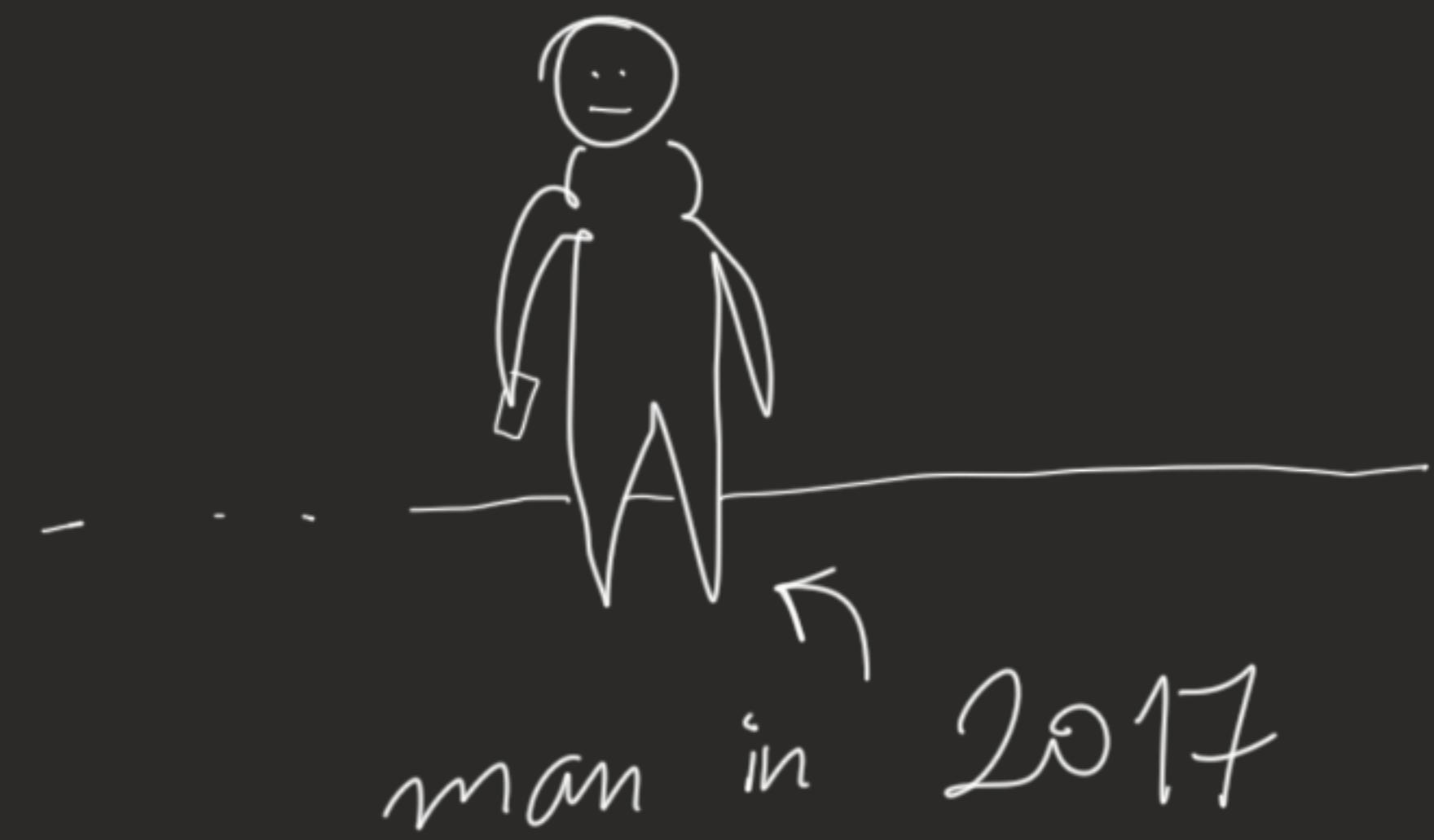
# TRANSLATING THE STONE INTO DIGITAL LANGUAGE



horizontal aufeinander. Anfänglich kommen einige Schichten aus lockeren Steinslagen, welche oft aus mehreren hundert, wie Papier dünnen Blättern bestehen, das von sich bei gehöriger Vorsicht jedes Blatt ablösen lässt. Diese Schichten sind zu nichts brauchbar, weil sie wenig Festigkeit besitzen, aber doch zu fest, und auch zu wenig weiß sind, um allenfalls eine Art Kreide zu bilden.

Der Solenhofer-Stein besteht noch aus Kalkerde und Kohlensäure. Er lädt sich fast gänzlich auf, wobei die Säure entweicht. Da die verschiedenartigen Schichten so sollte man glauben, dass hier aber machentheilungen, hauptsächlich an der Oberfläche, vorkommen. Demungeachtet hat er einen grauen, bläulichen und grünen Farbton. In einigen lithographischen Manieren, gefunden; indem wird doch der Solenhofer-Stein in Hinsicht auf seine hellen Farbe, und seine außergewöhnliche Weichheit bei weitem zum Druckgebrauch geeignet. \*)





man in 2017



man in 2017



man in 2017



man in 2017



man in 2017



man in 2017



man in 2017



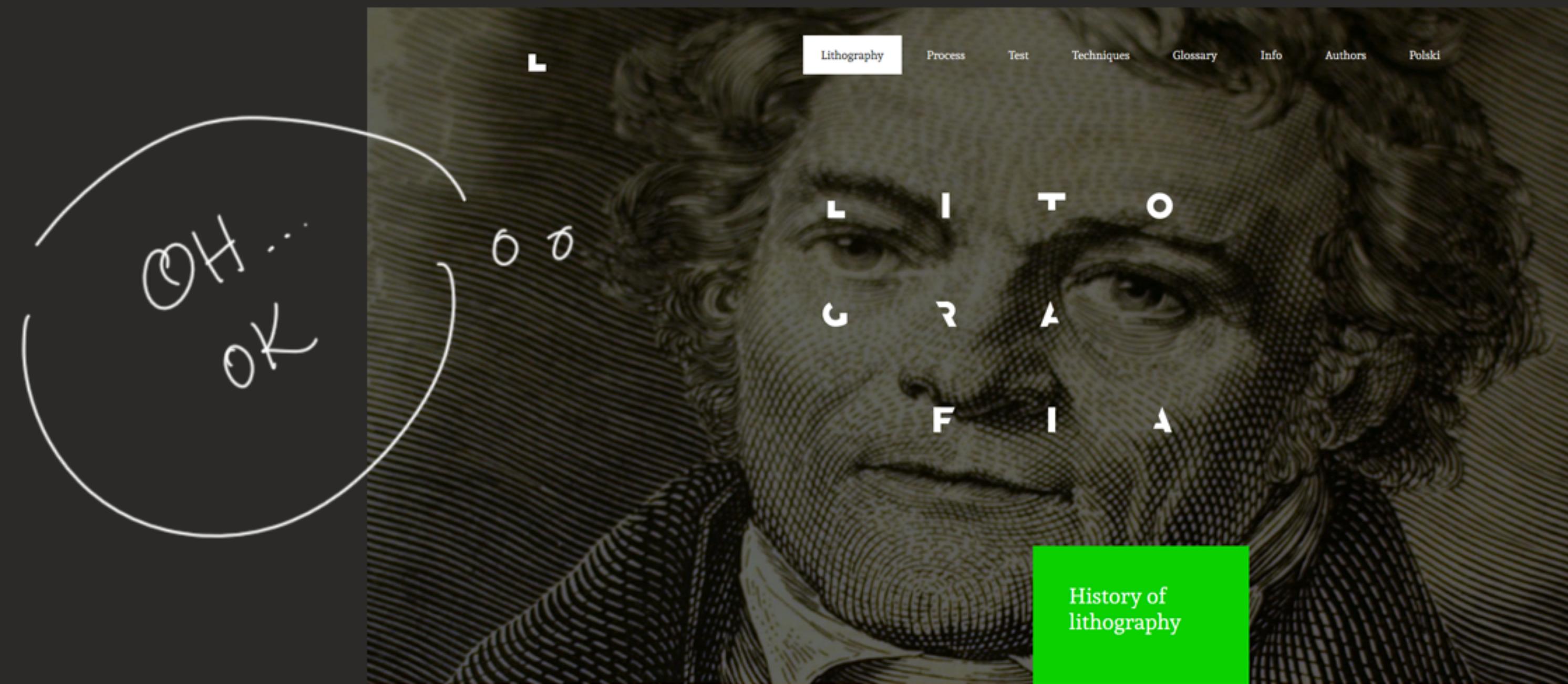
man in 2017





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# NOWADAYS INTERNET IS THE FIRST PLACE THAT WE SEARCH FOR THE INFORMATION



# TIME WAITS FOR NOBODY



A screenshot of the Google homepage as it appears in a modern web browser, likely Google Chrome. The page features the large, colorful Google logo. Below the logo is a search bar with the placeholder "Szukaj w Google" and a "Szczęśliwy traf" button. The browser interface includes a title bar with the word "Google", a address bar showing "google.pl/?gfe\_rd=cr&amp;dcr=0&amp;ei=DNYWWqCDM9T68AeFmamgDg", and various browser-specific icons and buttons.

2004 → 2017

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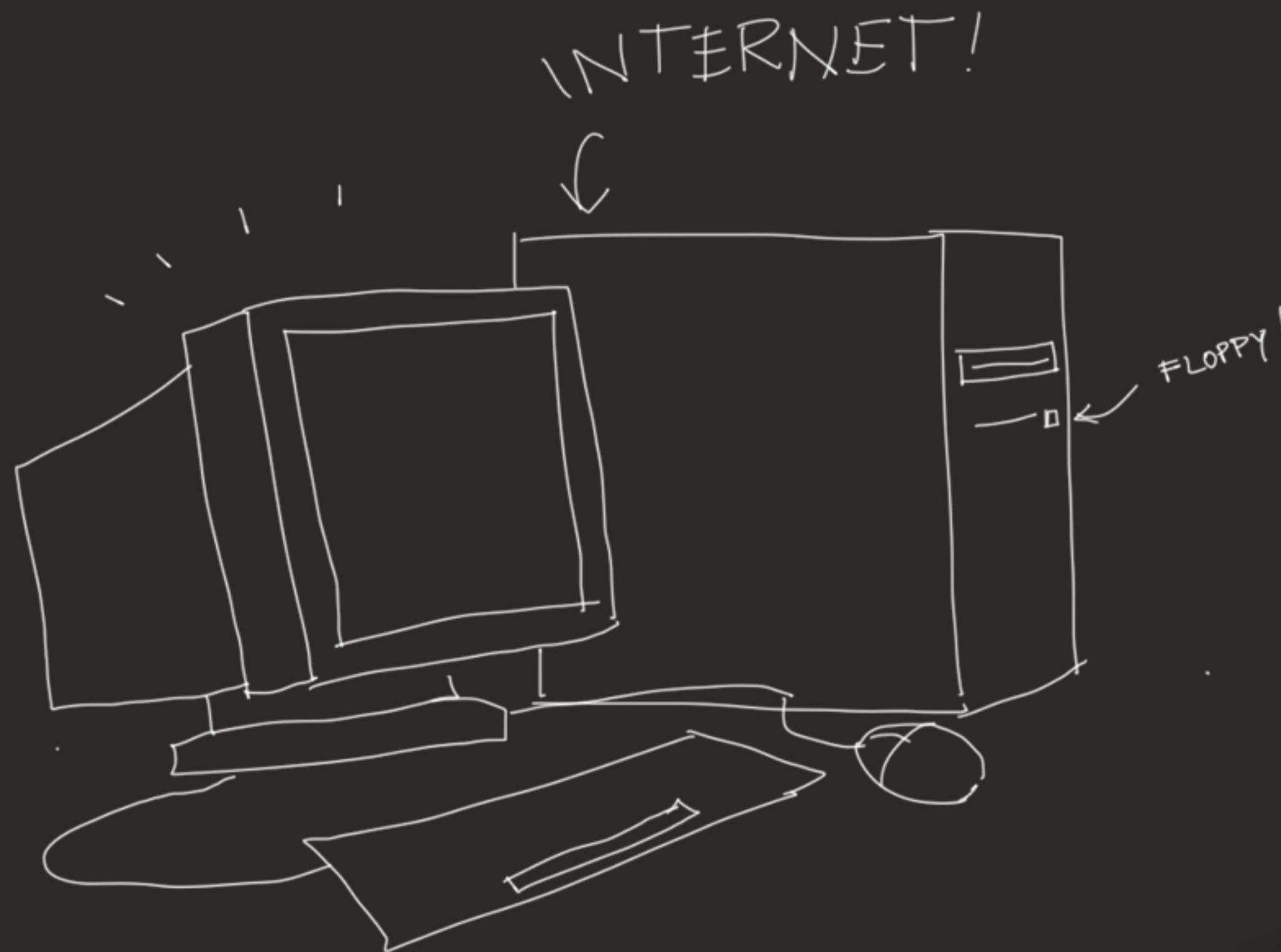
# 13 YEARS IS A LONG TIME FOR A WEBSITE

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2017

2004

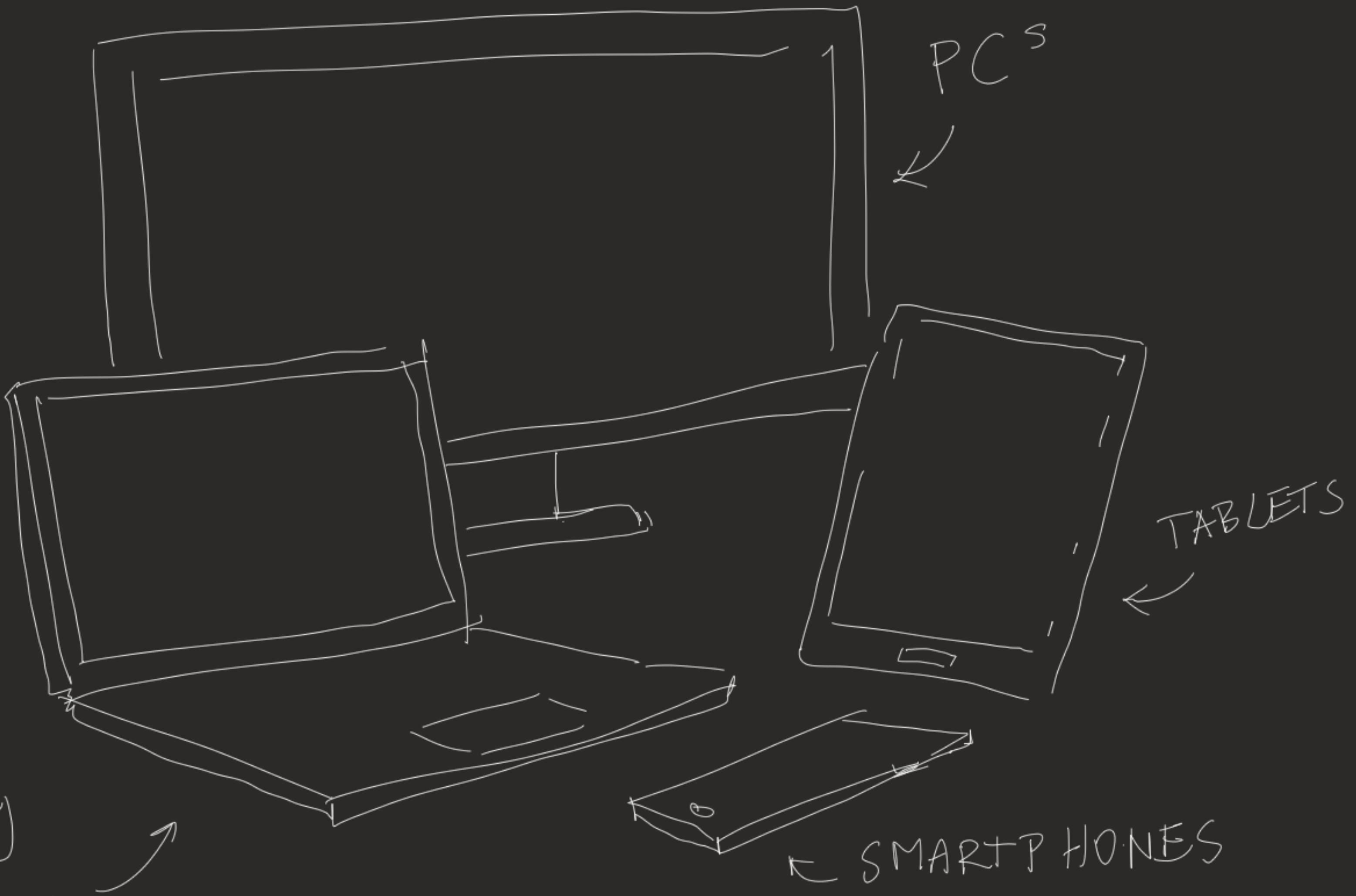


2017

Laptops

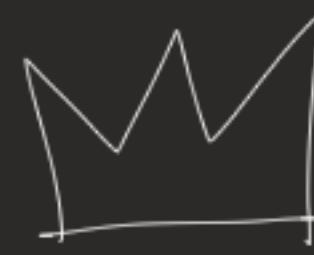


S-WATCHES



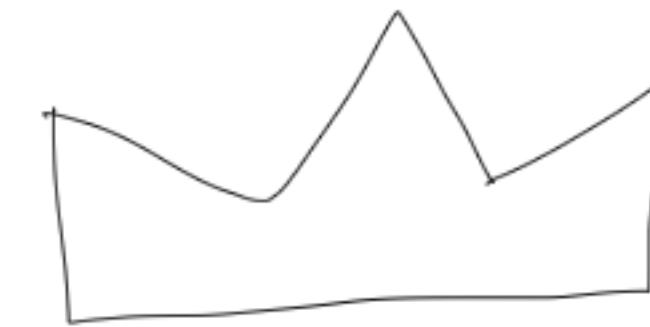
SMARTPHONES

2017



FLASH

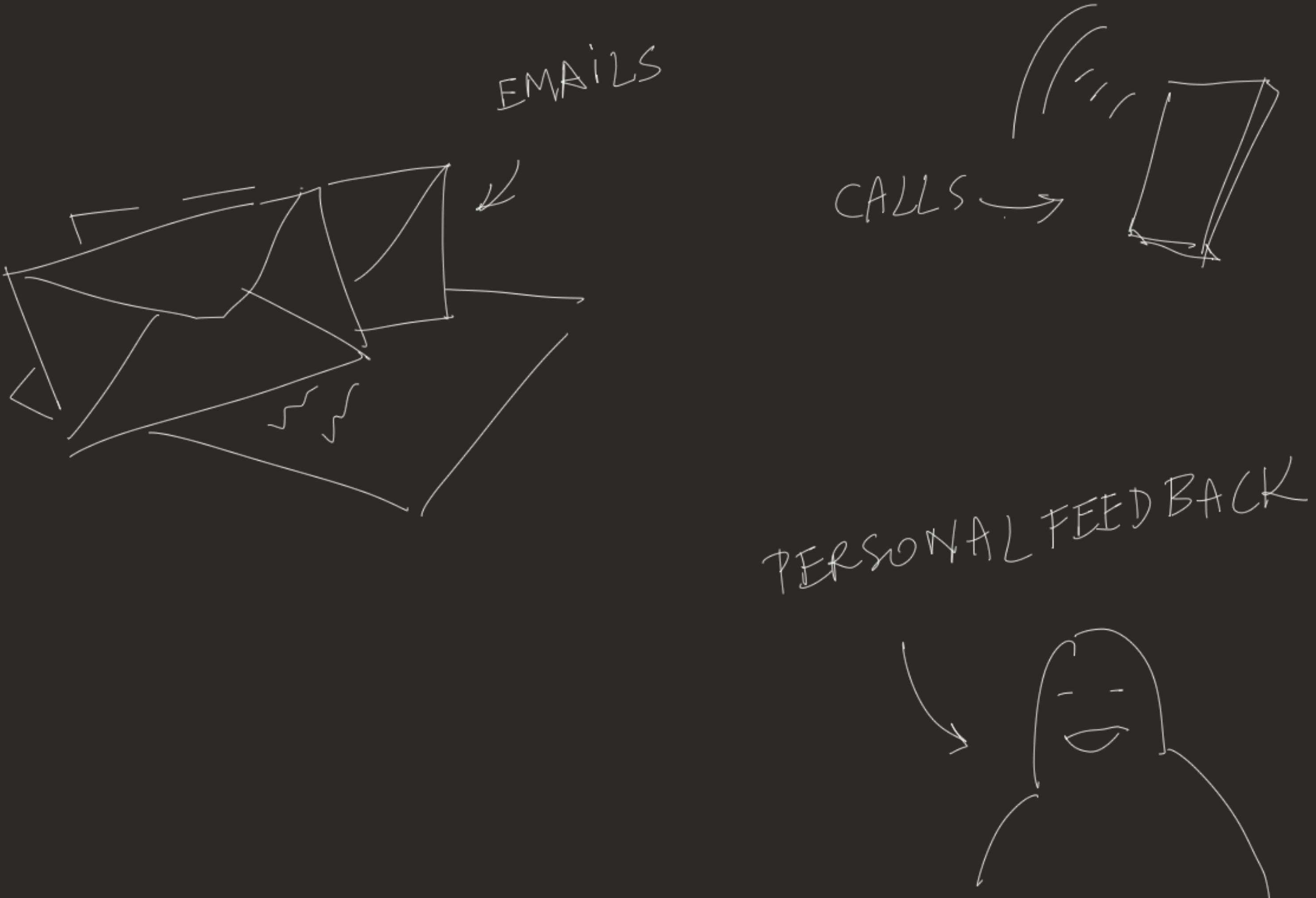
2004



CSS + HTML + JS



2017





HOME

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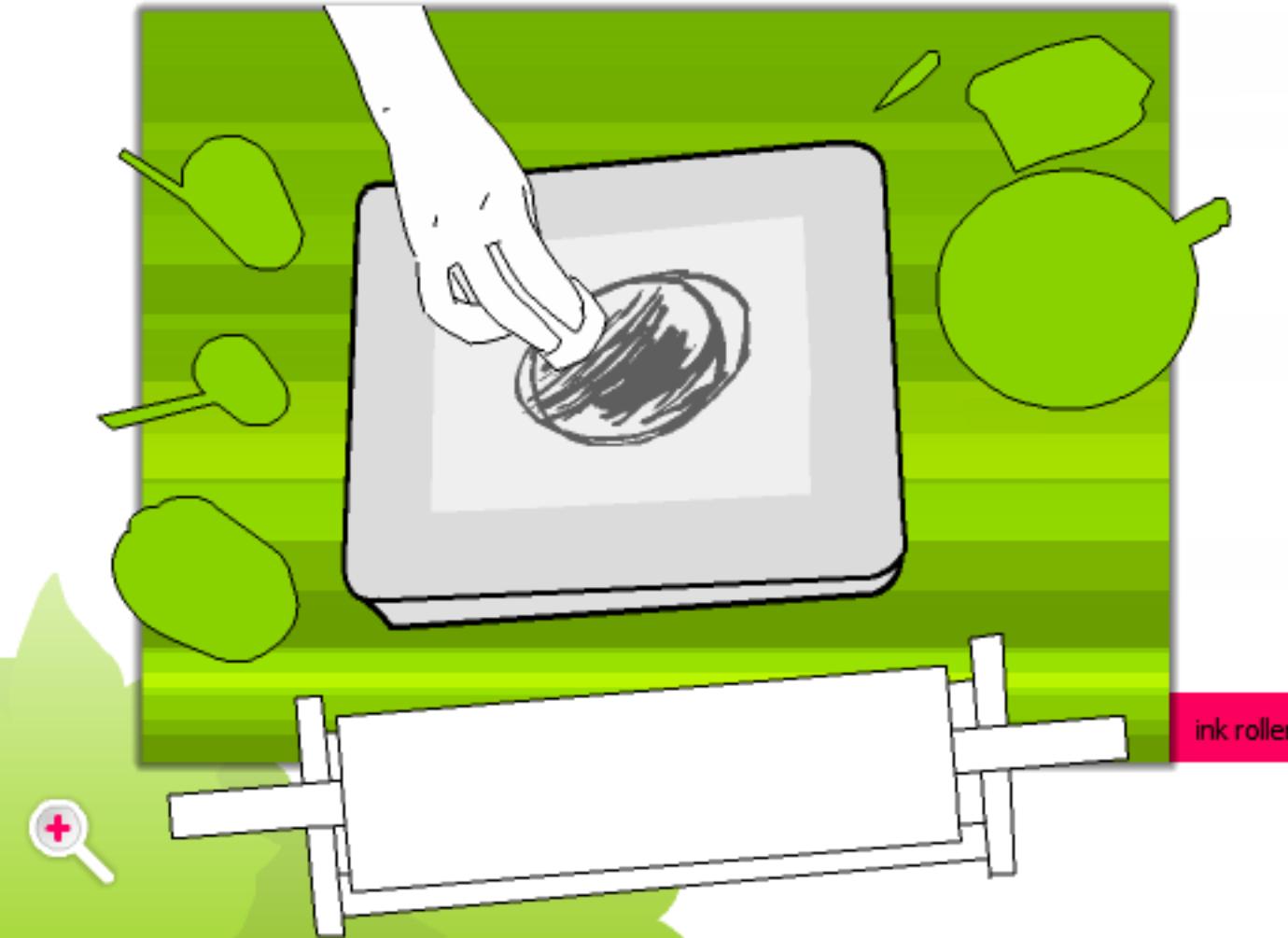
CONTACT

## TEST

maximum 8 points are available

**SCORE: 4**

### COMPETENCE IN PREPARING THE STONE FOR PRINTING PROCESS



Processing the drawing to prepare it for printing is one of the critical phases of lithography. Because mistakes at this point can easily destroy the drawing on the stone, the greatest care must be taken to proceed correctly and to understand fully each step involved.



# UNUSUAL TECHNIQUES

UNDER CONSTRUCTION

UNDER CONSTRUCTION

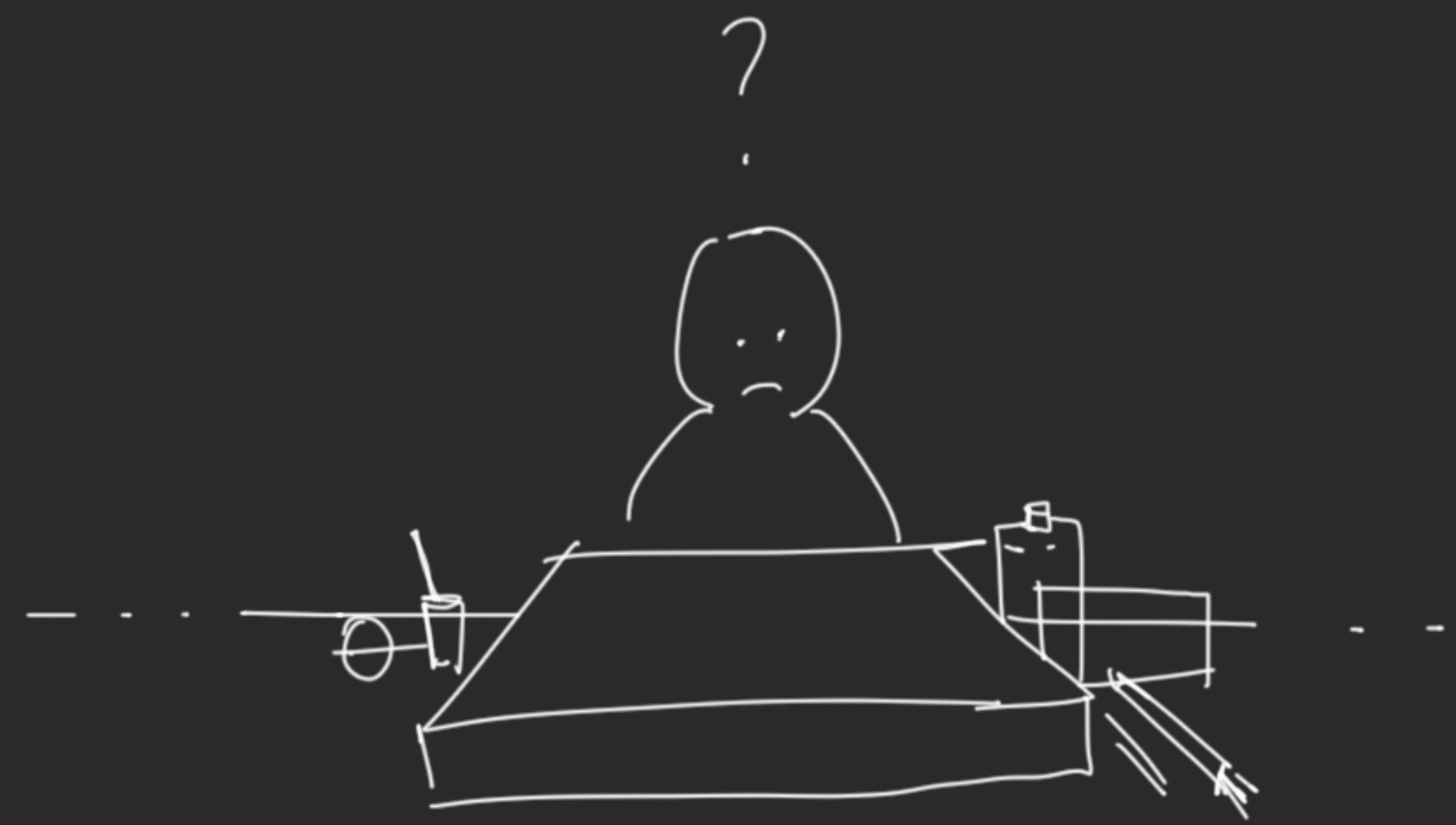
- [HOME](#)
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THAT'S WHY  
I'M HERE

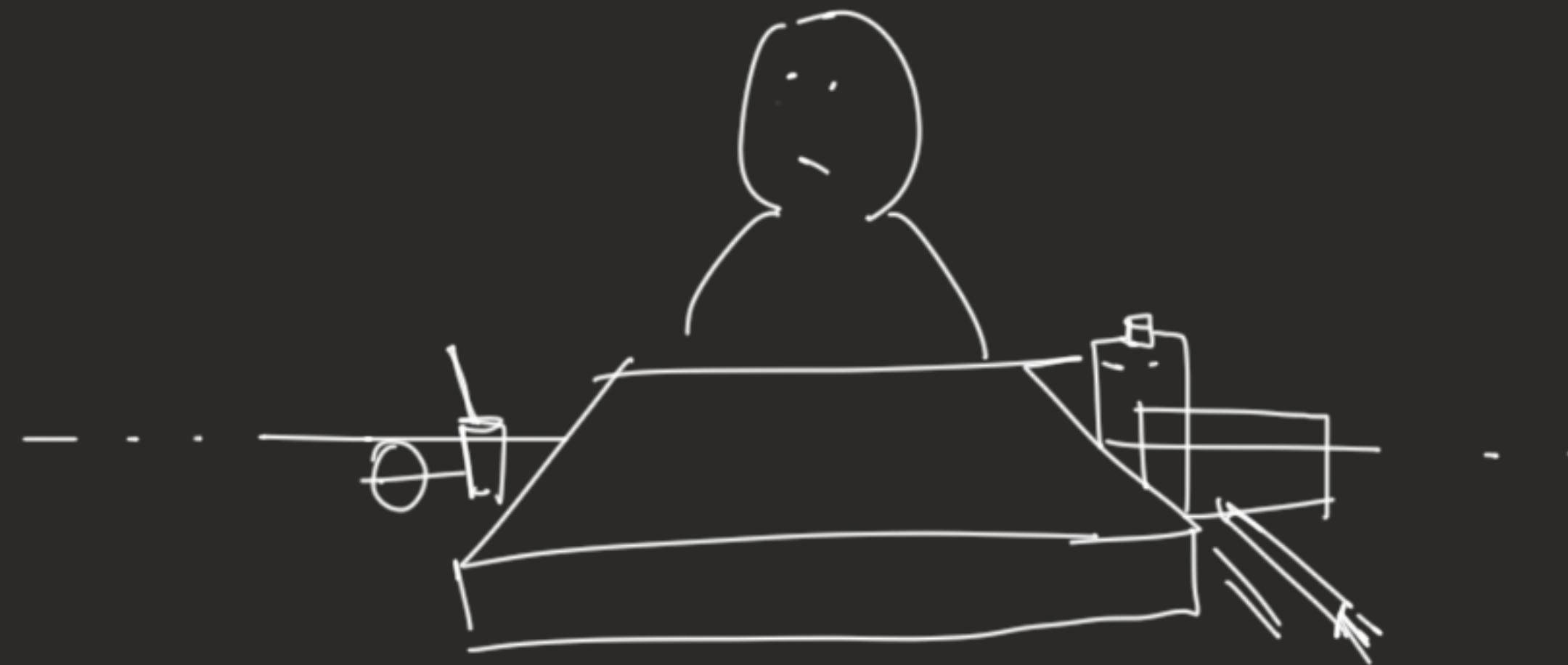
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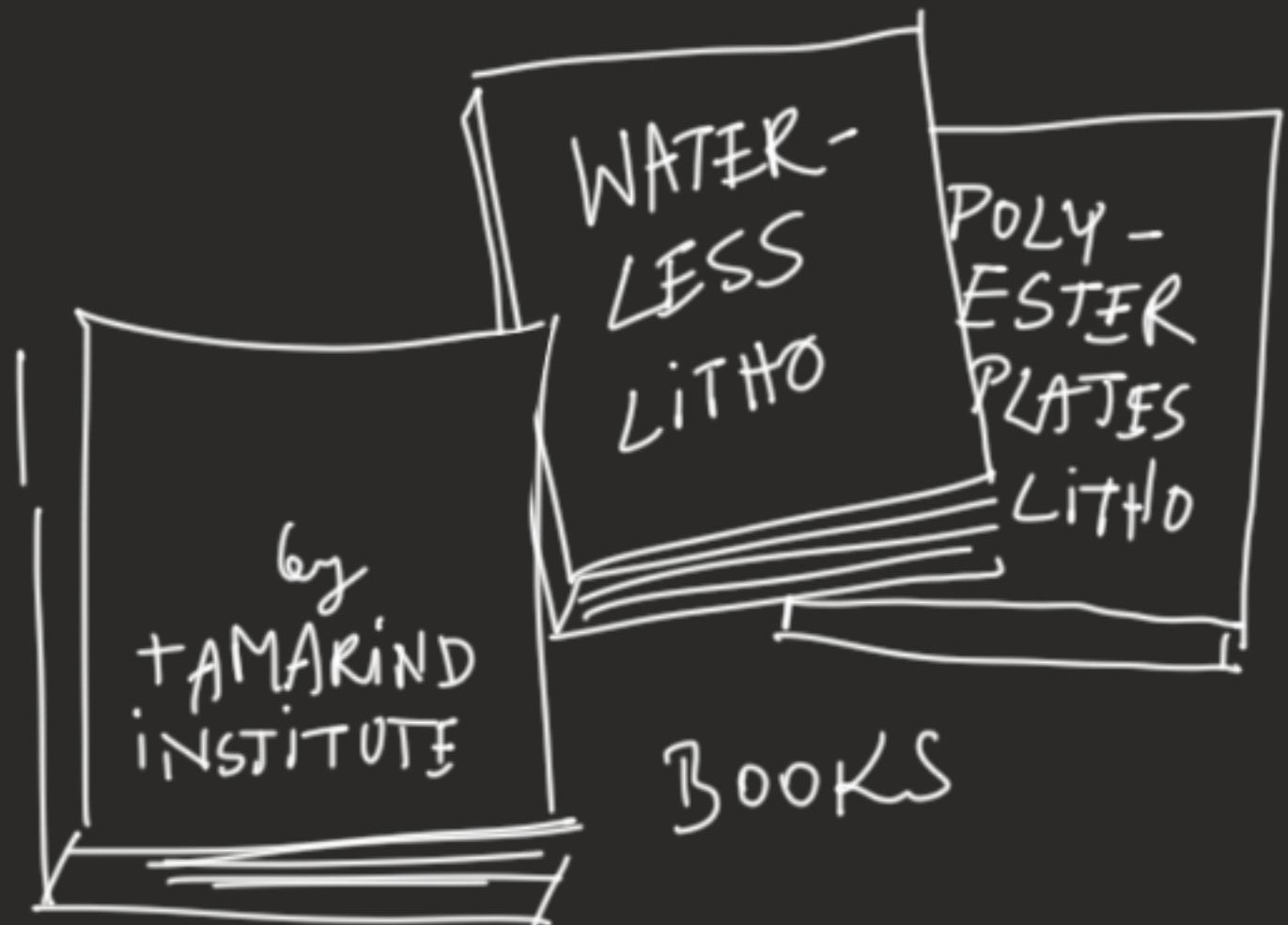




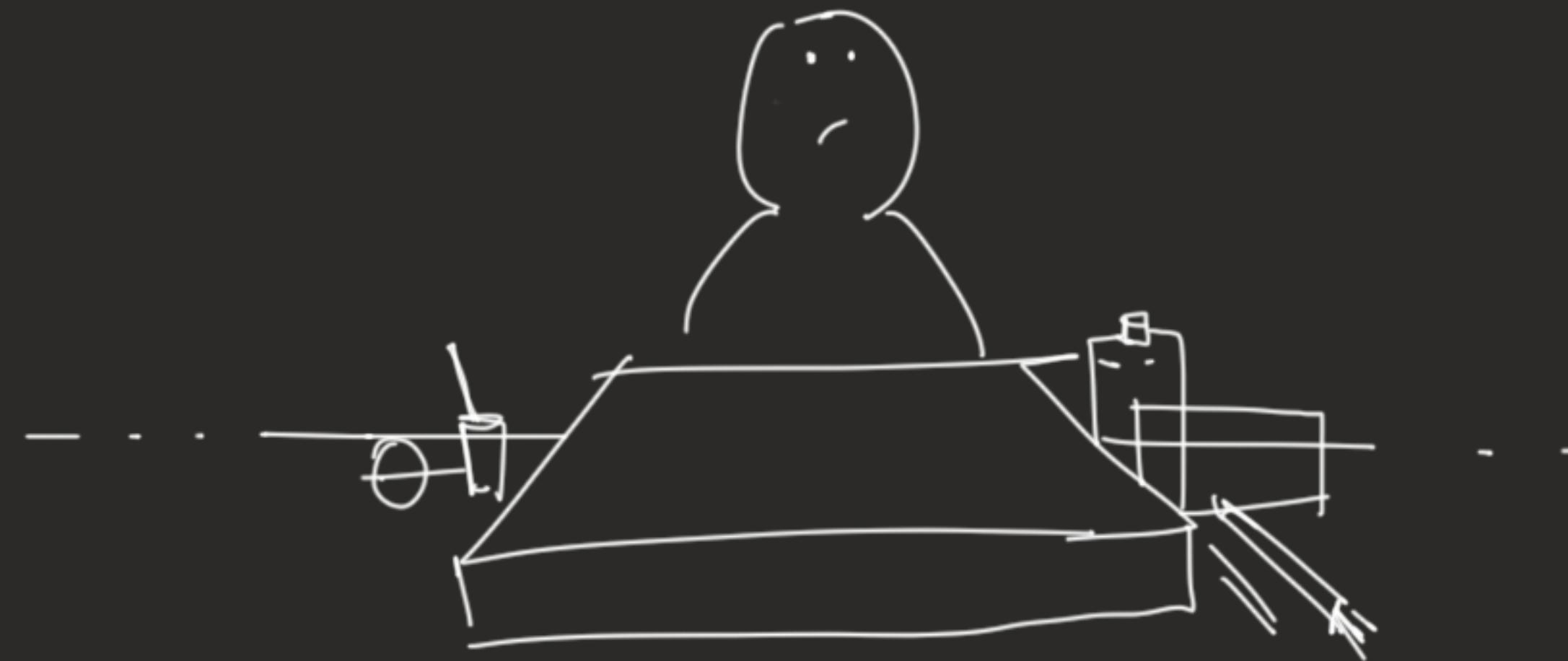


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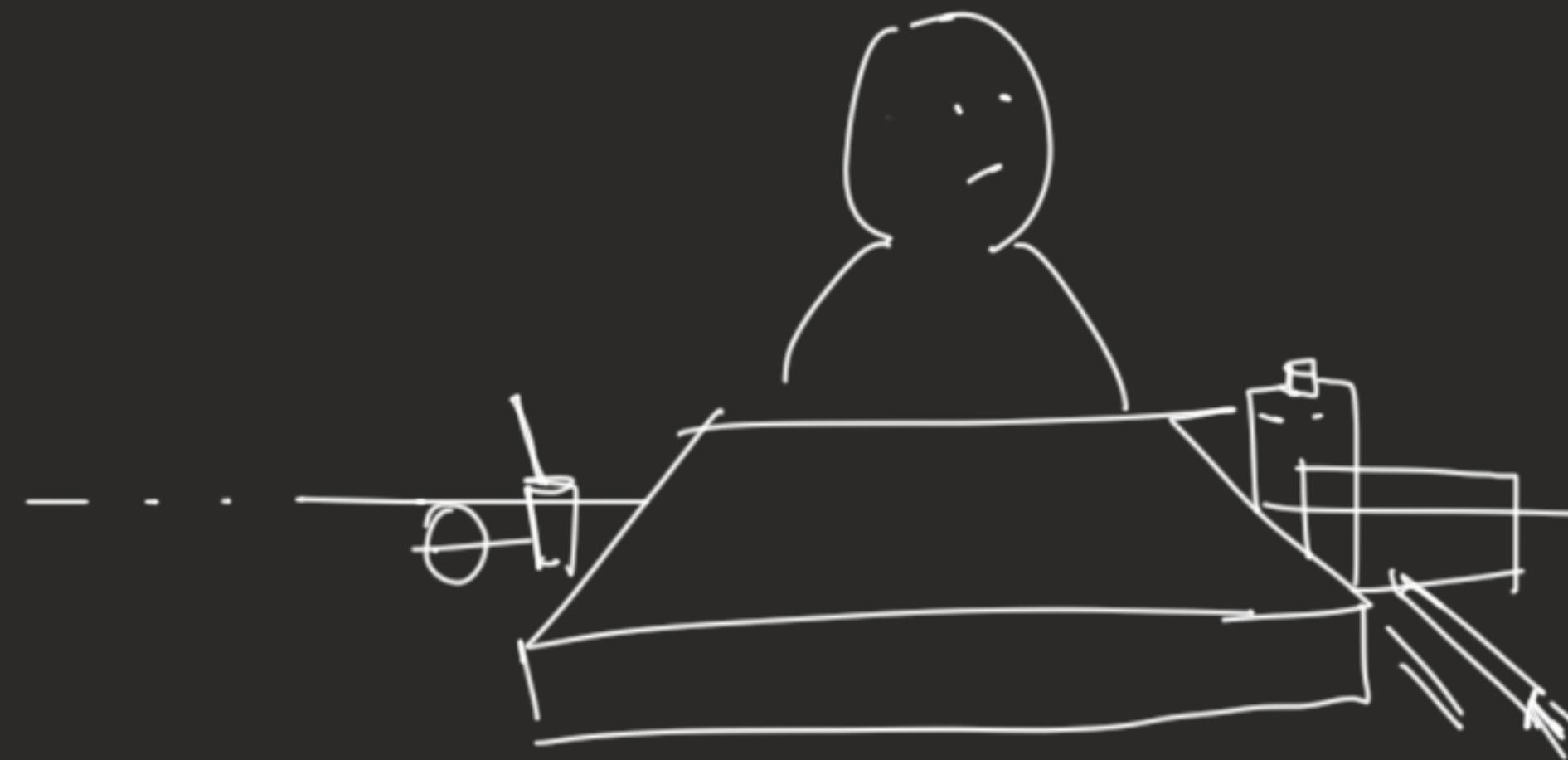
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INTERNET

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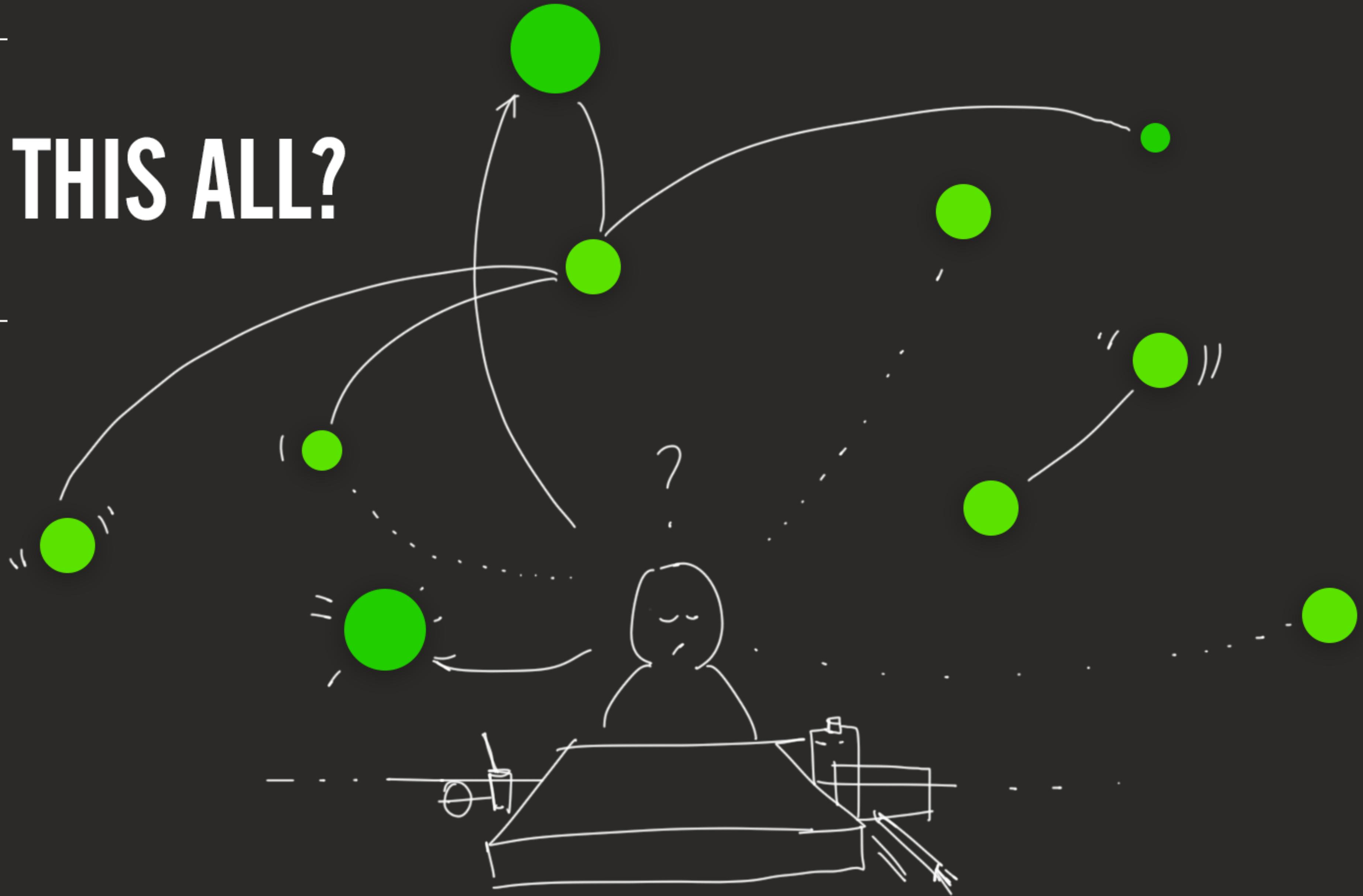
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# IS THIS ALL?

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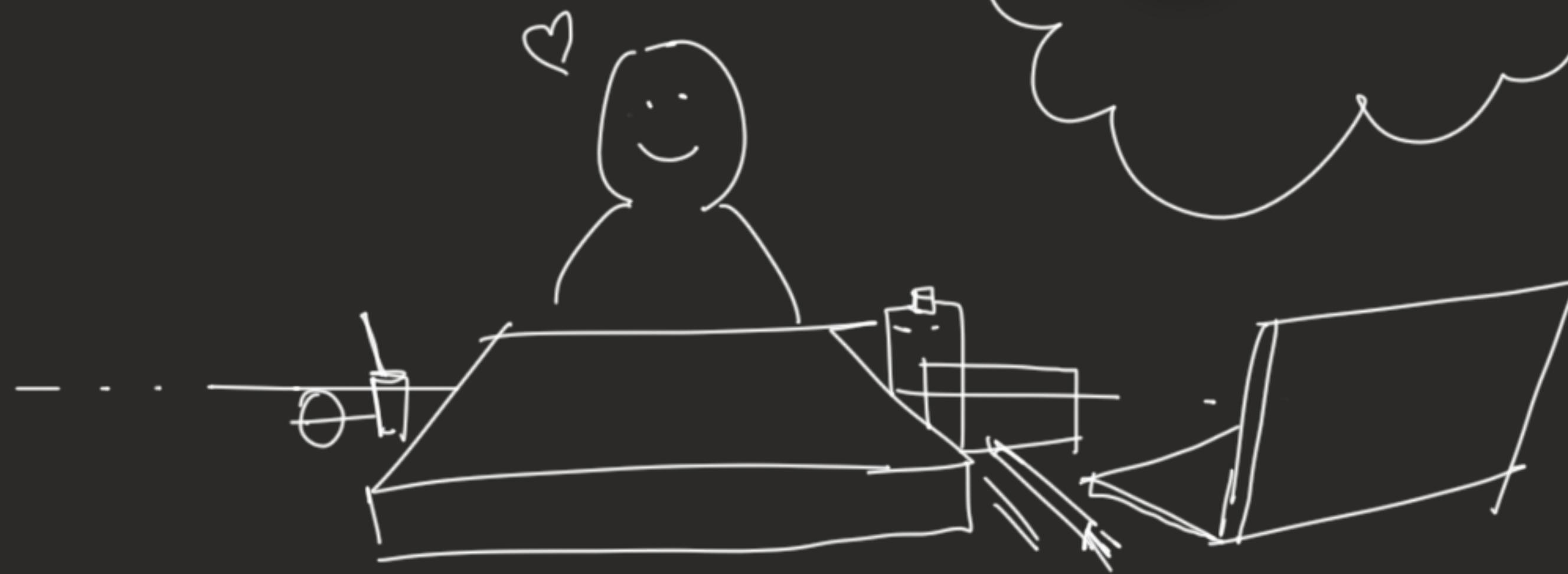
IS THIS ALL?

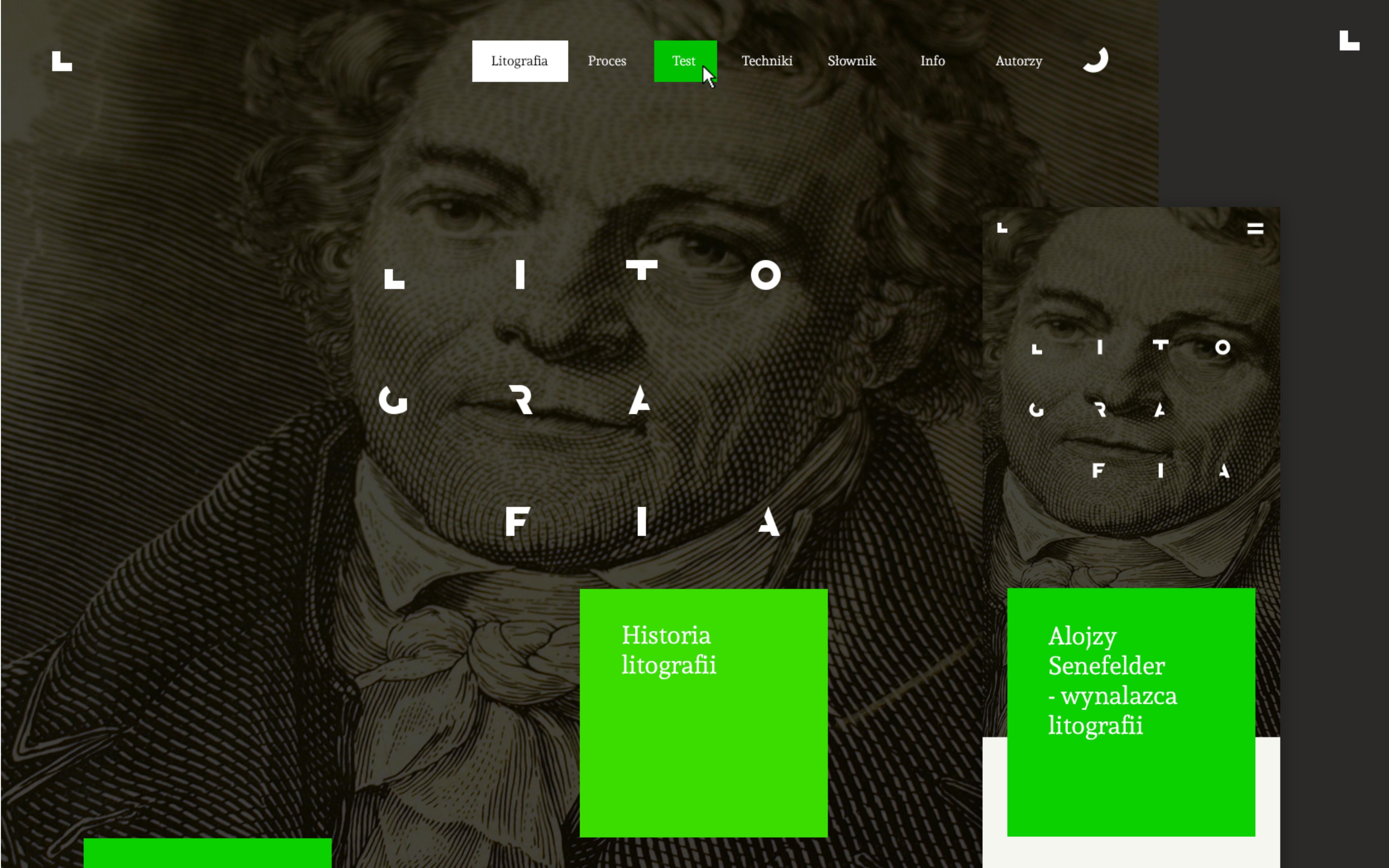


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ALL INFORMATION  
WELL ORGANIZED IN  
ONE EASY ACCESSABLE  
PLACE

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L

Litografia

Proces

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Techniki

Słownik

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Historia  
litografii

Alojzy  
Senefelder  
- wynalazca  
litografii

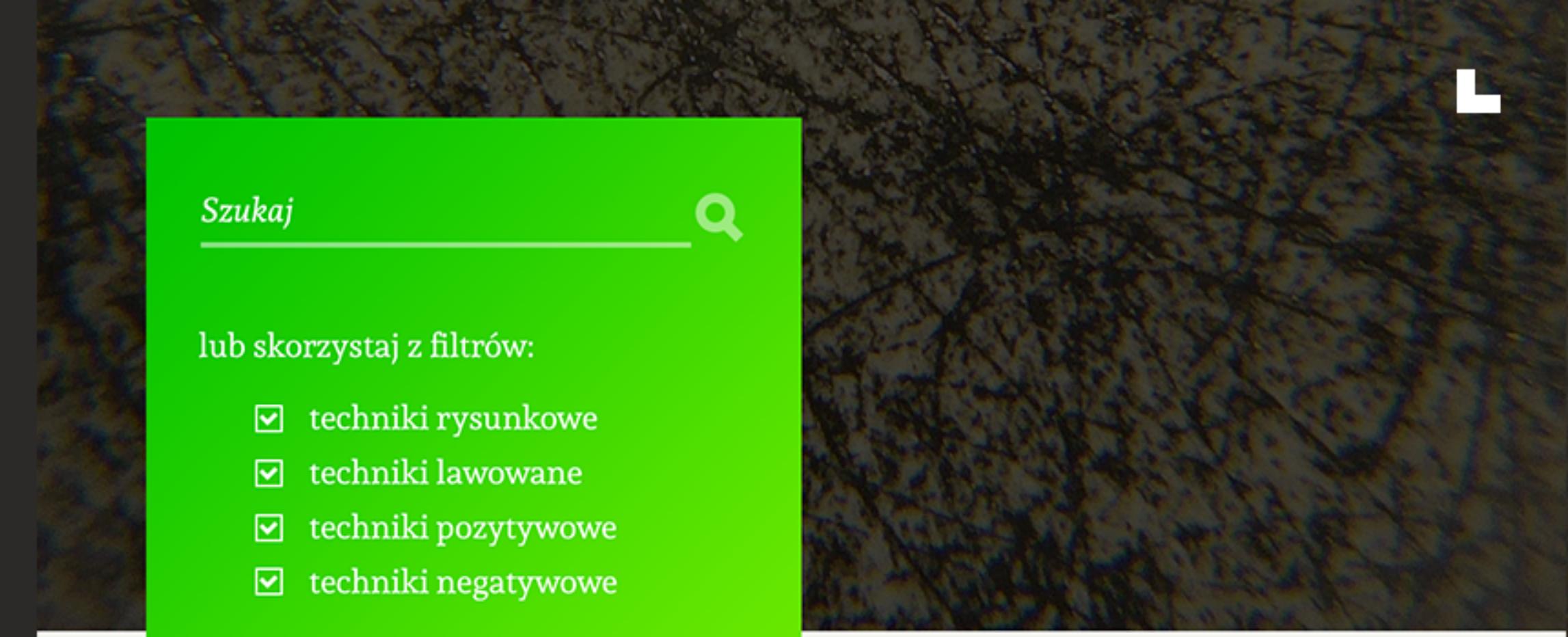
# THE ADVANCED LITHOGRAPHIC TECHNIQUES

filtered by images



# THE ADVANCED LITHOGRAPHIC TECHNIQUES

....or filtered by names



Szukaj  🔍

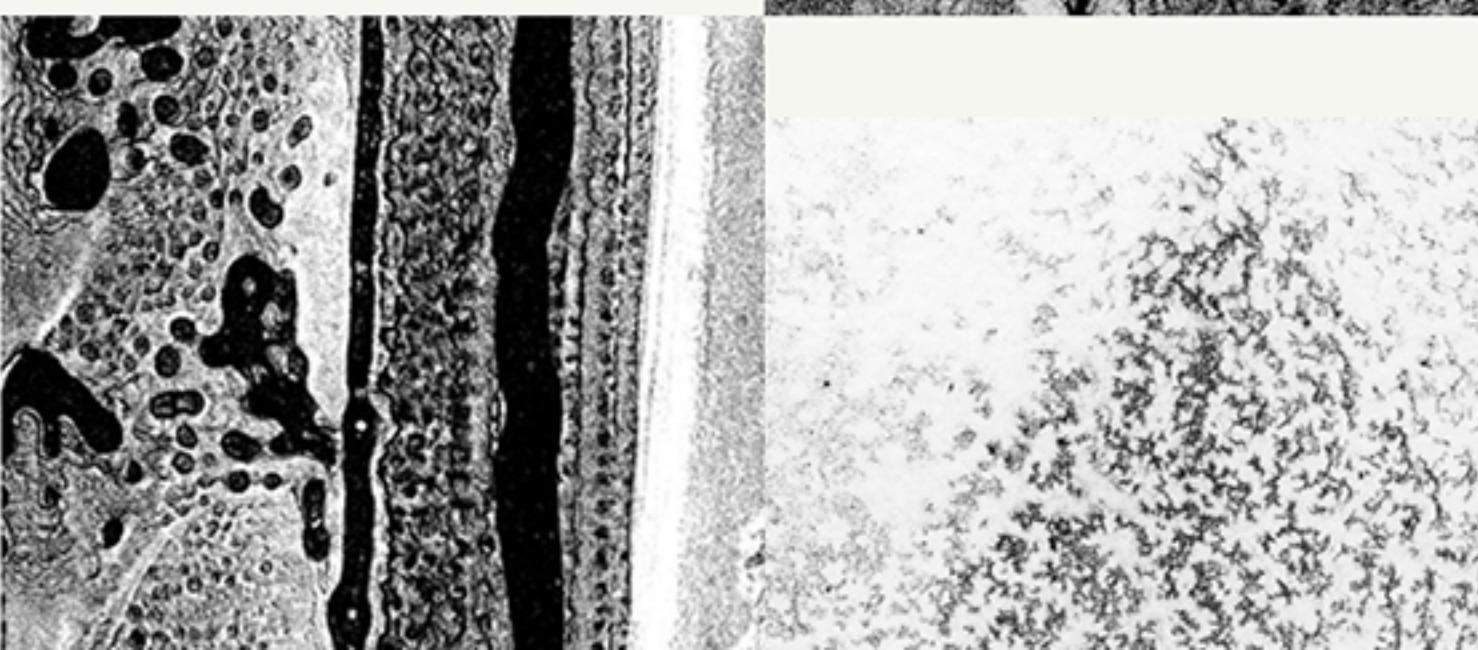
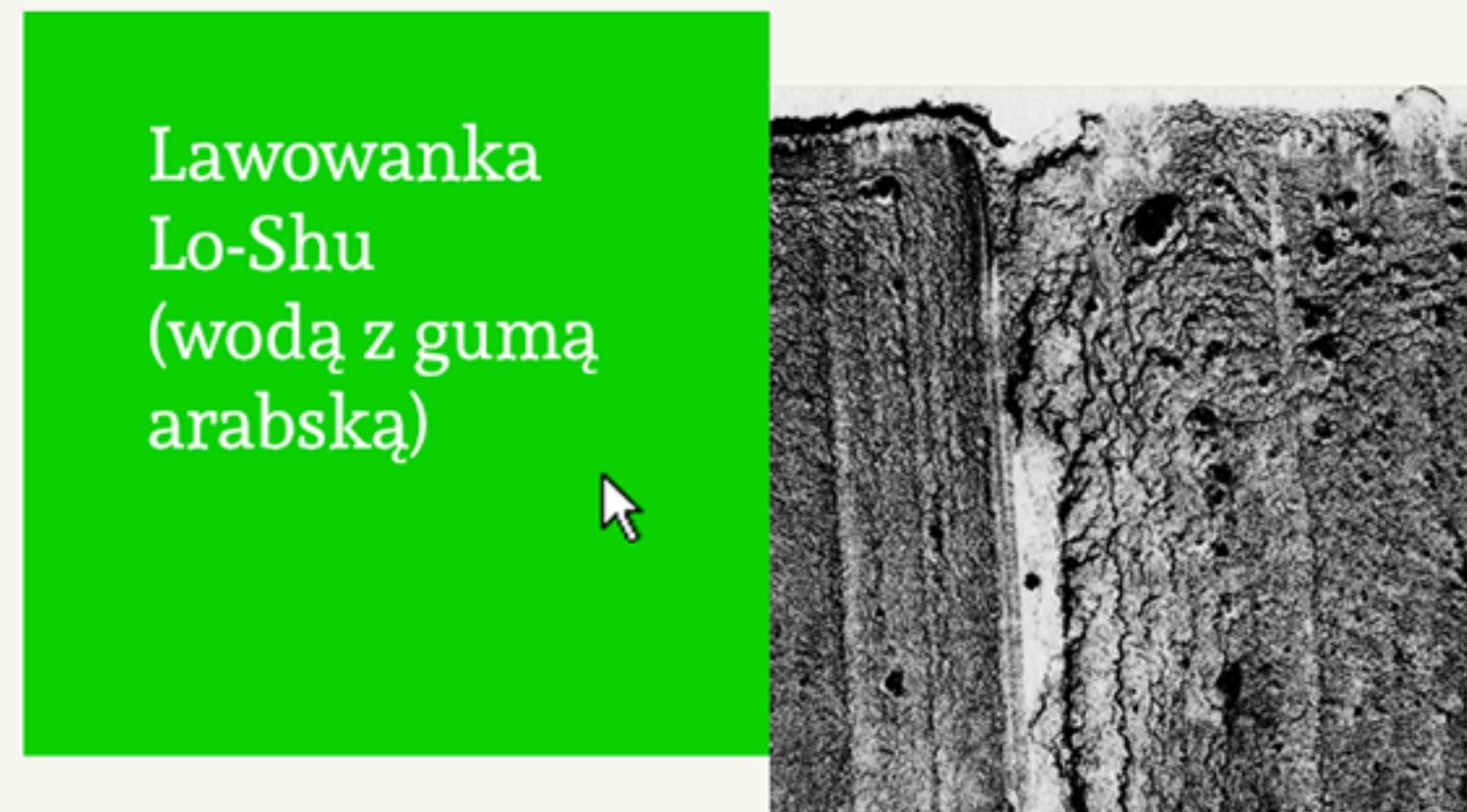
lub skorzystaj z filtrów:

- techniki rysunkowe
- techniki lawowane
- techniki pozytywowe
- techniki negatywowe

IKONY LISTA

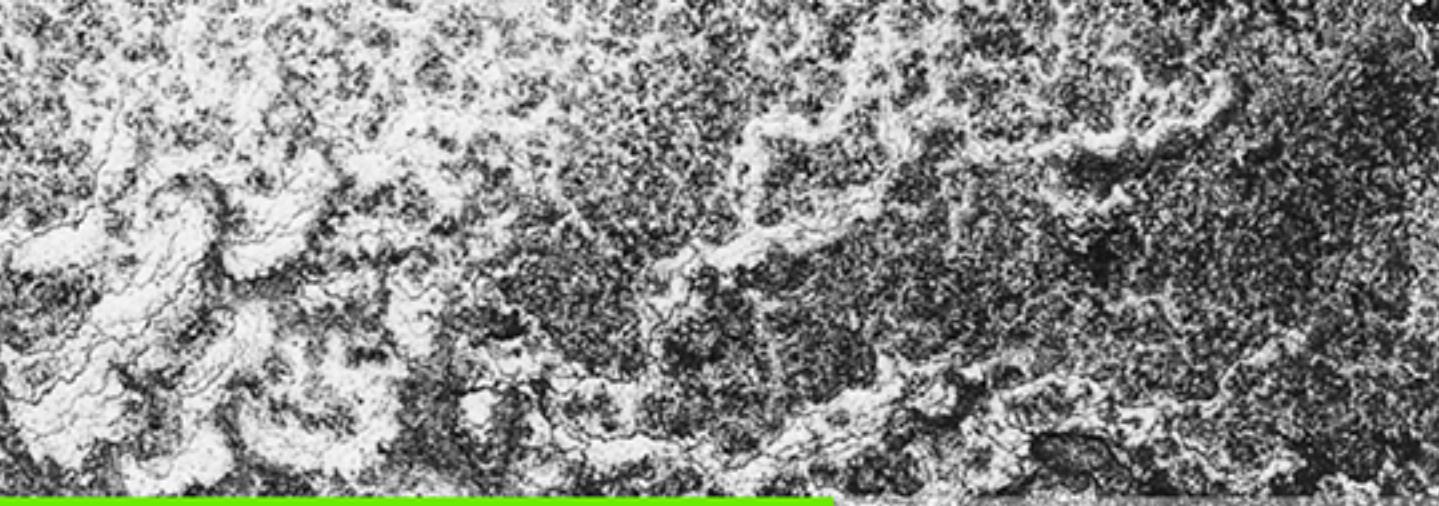
- Lawowanka Lo-Shu (wodą z gumą arabską)
- Krakelura
- Rysunek kalką maszynową
- Lawowanka karborundem
- Lawowanka tuszem terpentynowym
- Lawowanka tuszem litograficznym (Charbonel High Grade)
- Lawowanka tonerem z wodą
- Lawowanka tonerem z acetonom
- Lawowanka tonerem z alkoholem (rozcieńczalnik do szelaku)
- Rysunek tonerem
- Rysunek kredką tonerową**
- Rysunek kredką akwarelową
- Transfer wydruku kserograficznego
- Lawowanka szelakiem
- Lawowanka asfaltem z wodą (marmurek)
- Rysunek kredką litograficzną
- Rysunek tuszem litograficznym
- Lawowanka mydłem
- Sucha igła na kamieniu (grawiura)
- Mezzotinta na kamieniu
- Rysunek gumą arabską

Siniak



Inne techniki lawowowane

12  
↓



Próby zostały wykonane na kamieniu litograficznym średnio twardym oraz na marmurze carraryjskim.

## Opis technologii

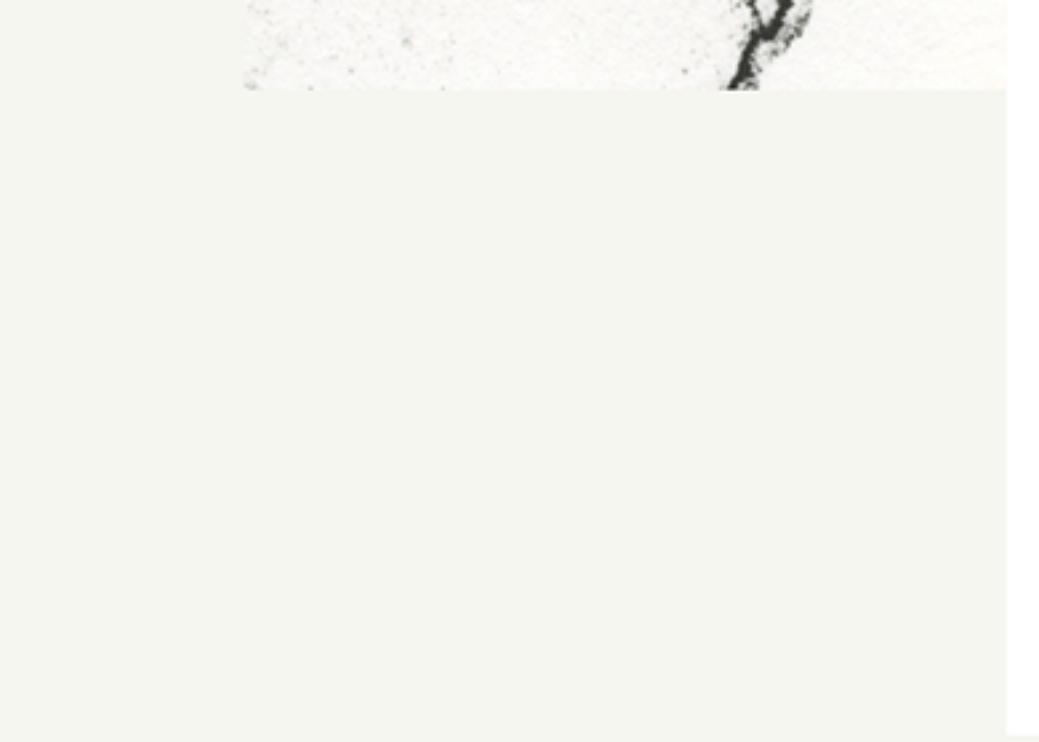
- 1
- 2
- 3

Kamień litograficzny powinien utarty karborundem od drobnym ziarnie (minimum #220). Lawowanka wylana na grubo utarta powierzchnię nie będzie ostra.

Tusz litograficzny Carbonnel High Grade w puszce należy rozetrzeć z wodą destylowaną - najlepiej czystym palcem - do uzyskania oczekiwanej zaczernienia mieszaniny. Proces ten może zająć sporo czasu, jednak uzyskanie dobrze roztartej mieszaniny jest kluczowe dla wykonania „ostrej” lawowanki.

Tusz należy nanosić na kamień pędzlem, który nabiera dosyć dużo substancji. Zbyt cienka warstwa nie ma możliwości wysychania na powierzchni kamienia, właśnie wysychanie powoduje powstanie charakterystycznego żywowania. Ważne jest wypoziomowanie kamienia. Substancja będzie płynąć w dół. Oczywiście można to wykorzystać podczas tworzenia rysunku. Nie powinno się nakładać na siebie kolejnych mokrych warstw tuszu; może to spowodować zwarzenie substancji i oddzielenie się thuszcu od czernidła, co utrudni kontrolę nad rysunkiem (podczas rysowania i tawienia). Kolejne warstwy tuszu należy nakładać na siebie pow. wyschnięciu poprzednich. Żeby uzyskać jednolite żywowanie lawowanki na dużej powierzchni, można przed jej wylaniem namalować pożądany kształt wodą destylowaną i dopiero w nią wlać tusz litograficzny. Na ułożenie żywowania można wpływać układając na mokrym tuszu (lub przed

STĘPS  
←



C

7

Stężeńie mikstury należy każdorazowo sprawdzić na brzegu kamienia. „Zapiecone” lawowanki można tarwić nieco większym stężeniem kwasu w gumie. Stężenie substancji tarwiającej jak zwykle w litografii zależne jest od typu matrycy, temperatury i wilgotności powietrza... Próby w galerii techniki opisane są stężeniami kwasu użytymi do ich wytrawienia.

8

Po wytawieniu, starciu nadmiaru substancji trawiącej i wysuszeniu matrycy, należy dokładnie wymyć rysunek terpentyną. Po odparowaniu terpentyny można rozebrać szmatką cienką warstwę rozcieńczonego w terpentynie asfaltu i oczekać, aż odparuje (5-10 minut). Asfalt nie jest konieczny; w przypadku ciemnych rysunków można pominąć ten krok. Po zastosowaniu asfaltu lawowanka będzie przedzej nasycać się farbą graficzną.

9

Zmyć kamień zimną wodą, po wymianie wody na czystą i zimną zwilżyć kamień i walkować farbą procesową. Farba powinna być krótka i twarda, żeby nie zalała charakterystycznego żywowania.

Po osiągnięciu satysfakcjonującego zaczernienia, kamień należy wysuszyć, oprószyć kalafonia i talkiem, a następnie przystąpić do utrwalenia rysunku za pomocą drugiego trawienia. Drugie tawienie dostosowujemy do rysunku.

Autorem opisu techniki jest Anna Trojanowska.

LINK  
TO THE  
GALLERY

[Litografia](#)[Proces](#)[Test](#)[Techniki](#)[Słownik](#)[Info](#)[Autorzy](#)

# THE DESCRIPTION AUTHOR'S GALLERY

## My heart is made of stone

Anna Trojanowska jest pomysłodawcą i współautorką projektu litografia.pl.

Born in 1978 in Wrocław, Poland. She holds a Ph.D. Awarded by Academy of Fine Arts and Design (Wrocław, Poland). Until 2015 she has been working as a professors assistant in Studio of Lithography and Graphics' Promotion. Since 2015 she leads her own studio of Graphic User Interface on her Alma Mater. Her interests includes both: printmaking (mainly marble stone lithography) as well as an animation and graphic user interface design.

Prezentowała swoje prace na wielu wystawach w kraju i za granicą, min: Chicago, Charlotte, Konxville (USA), Cadaques (Spain), Liberec (Czech Republic), Florence, Milano (Italy), Taiwan, Cluj (Romania), Tidaholm (Sweden), Bitola (Macedonia), Tjanjin, Guanlan (China), Thessaloniki (Greece), Brugge (Belgium), Melbourne (Australia), Berlin (Germany), Istanbul (Turkey)...

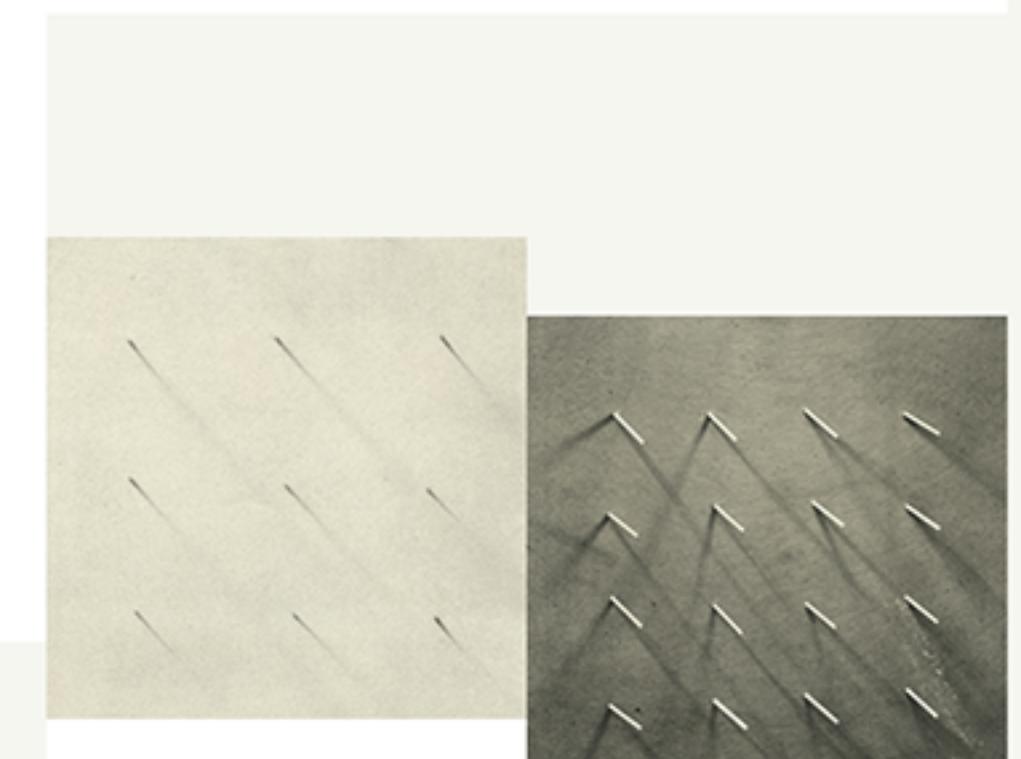
### NAGRODY

2016	2nd Award of Intercontinental Biennial of Smalll Graphics "Inter-Art" (Aiud, Romania)
	Award of Merit on the 20th Da Dun Fine Arts Exhibition 2016 (Taichung, Taiwan),
	Honour Award on the IX PREMIO INTERNACIONAL DE GRABADO Y VINO FUNDACIÓN VIVANCO 2016 (La Rioja - Logroño, Spain)
2015	Honorable Mention of International Lithography Competition LITHO-KIELCE 2015 (Kielce, Poland)
	Grand Prix on the 11th International Senefelder Award 2015 (Offenbach, Germany)
	Honorable Mention for the best set of works on XXV International Biennial Exhibition of Modern Exlibris 2015 (Malbork, Poland),
2010	Grand Prix on the 6th International lithographic Symposium 2010 (Tidaholm, Sweden)

Anna  
Trojanowska



Moje serce jest z kamienia  
litografia na marmurze  
32x32 cm  
2014



Shades\_07  
litografia na marmurze  
35x50 cm  
2014

Shades\_07  
litografia na marmurze  
35x50 cm  
2014



Powrót do listy autorów

Anna  
Trojanowska

## My heart is made of stone

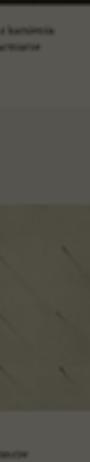
Anna Trojanowska jest pomysłodawcą i współautorką projektu  
[litografia.pl](#)

Born in 1978 in Wrocław, Poland. She holds a Ph.D. Awarded by Academy of Fine Arts and Design, Wroclaw (Poland). Until 2015 she has been working as a professors assistant in Studio of Lithography and Graphics' Promotion. Since 2015 she leads her own studio of Graphic User Interface on her Alma Mater. Her interests includes both: printmaking (mainly marble stone lithography) as well as an animation and graphic user interface design.

Presented works receive prizes on many exhibitions worldwide (e.g. lithography, marlins, etc.). Chicago, Charlotte, Konxville (USA), Cadaques (Spain), Liberec (Czech Republic), Florence, Milano (Italy), Taiwan, Cluj (Romania), Tidaholm (Sweden), Bitola (Macedonia), Tjanjin, Guanlan (China), Thessaloniki (Greece), Brugge (Belgium), Melbourne (Australia), Berlin (Germany), Istanbul (Turkey),...

## NAGRODY

2016	2nd Award of Intercontinental Biennial of Small Graphics "Inter-Art" (Aiud, Romania)
	Award of Merit on the 20th Da Dun Fine Arts Exhibition 2016 (Taichung, Taiwan),
	Honour Award on the IX PREMIO INTERNACIONAL DE GRABADO Y VINO FUNDACIÓN MUJAMBO 2016 (La Rioja, Logroño, Spain)
2015	Honorable Mention on International Lithography Competition LITHO ART 2015 (Kutná Hora, Czech Republic)
	Grand Prize on the 13th International Biennale Award 2015 (Offenbach, Germany)
	Honorable Mention for the Best set of Works on XXIV International Biennale of Students' Editions 2015 (Malbork, Poland)
2010	Grand Prize on the 6th International Lithographic Symposium 2010 (Östersund, Sweden)



Litografia 27

Litografia na marmurze

Wrocław

2014



Litografia 27

Litografia na marmurze

Wrocław

2014



Litografia 27

Litografia na marmurze

Wrocław

2014



Litografia 27

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2014

## NAGRODY

2016  
2nd Award of Intercontinental Biennial of Small Graphics "Inter-Art" (Aiud, Romania)

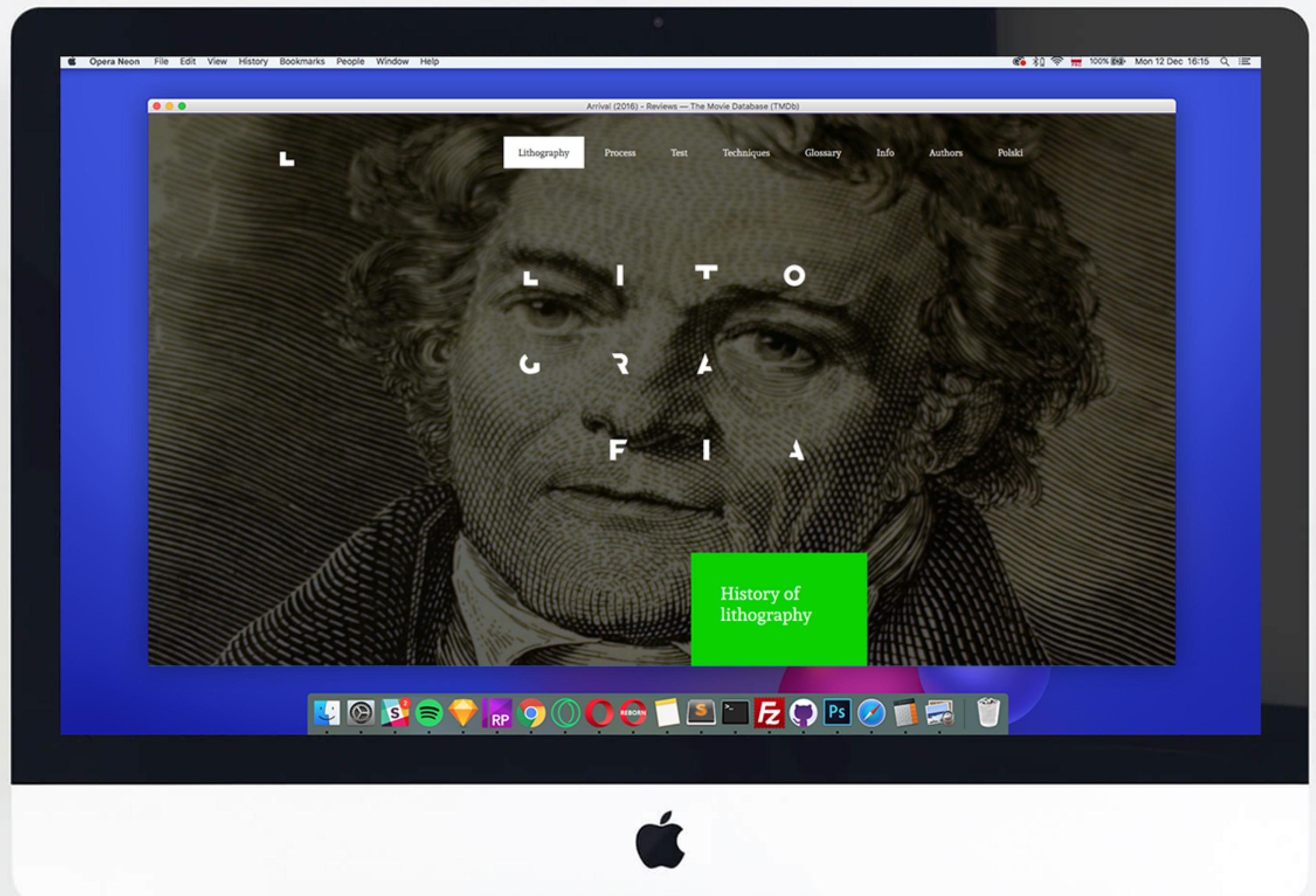
Award of Merit on the 20th Da Dun Fine Arts Exhibition 2016 (Taichung, Taiwan),

Honour Award on the IX PREMIO INTERNACIONAL DE GRABADO Y VINO FUNDACIÓN MUJAMBO 2016

Anna  
Trojanowska

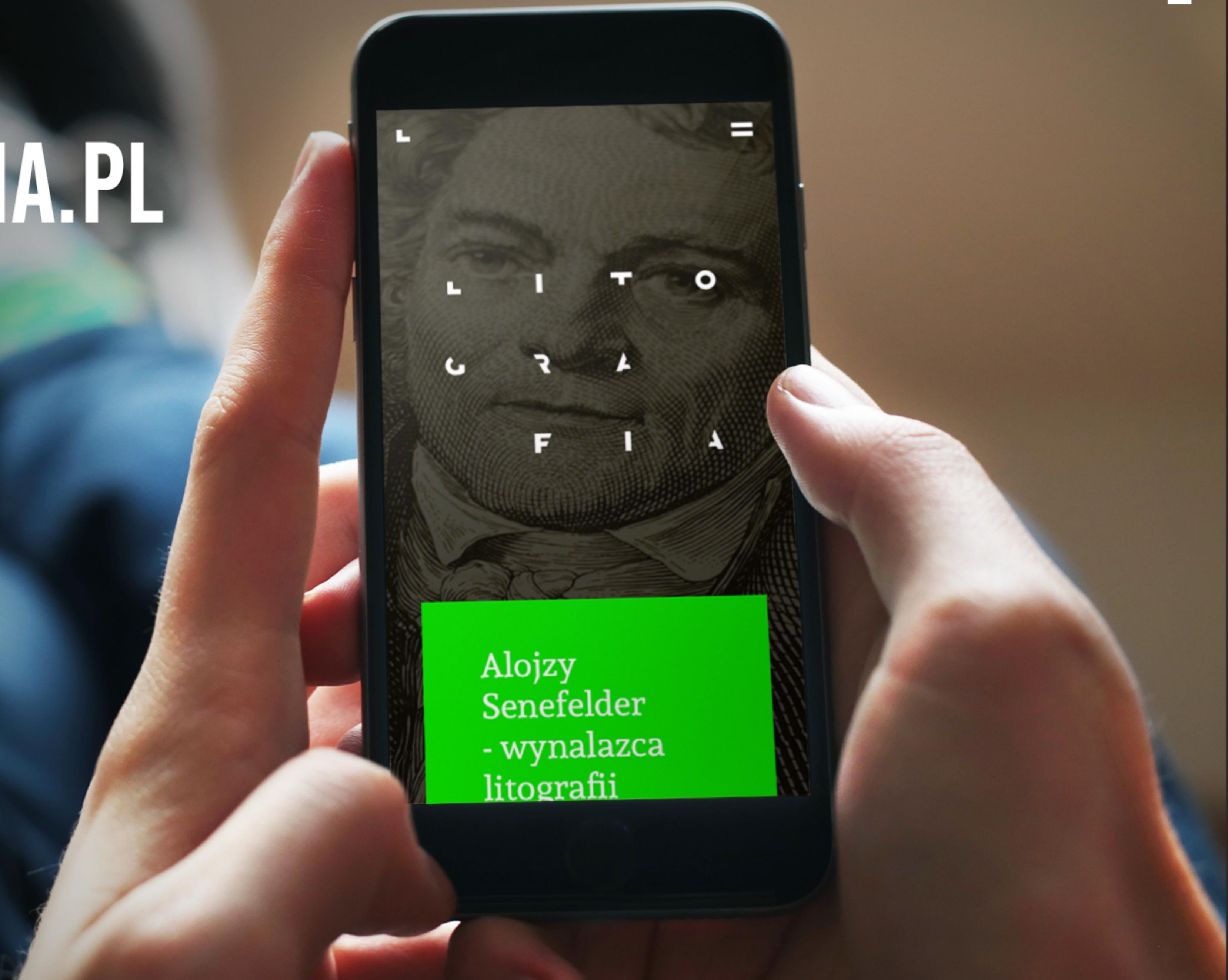
Moje serce jest z kamienia





# LITOGRAFIA.PL

Anna Trojanowska  
aniat@litografia.pl  
[www.litografia.pl](http://www.litografia.pl)

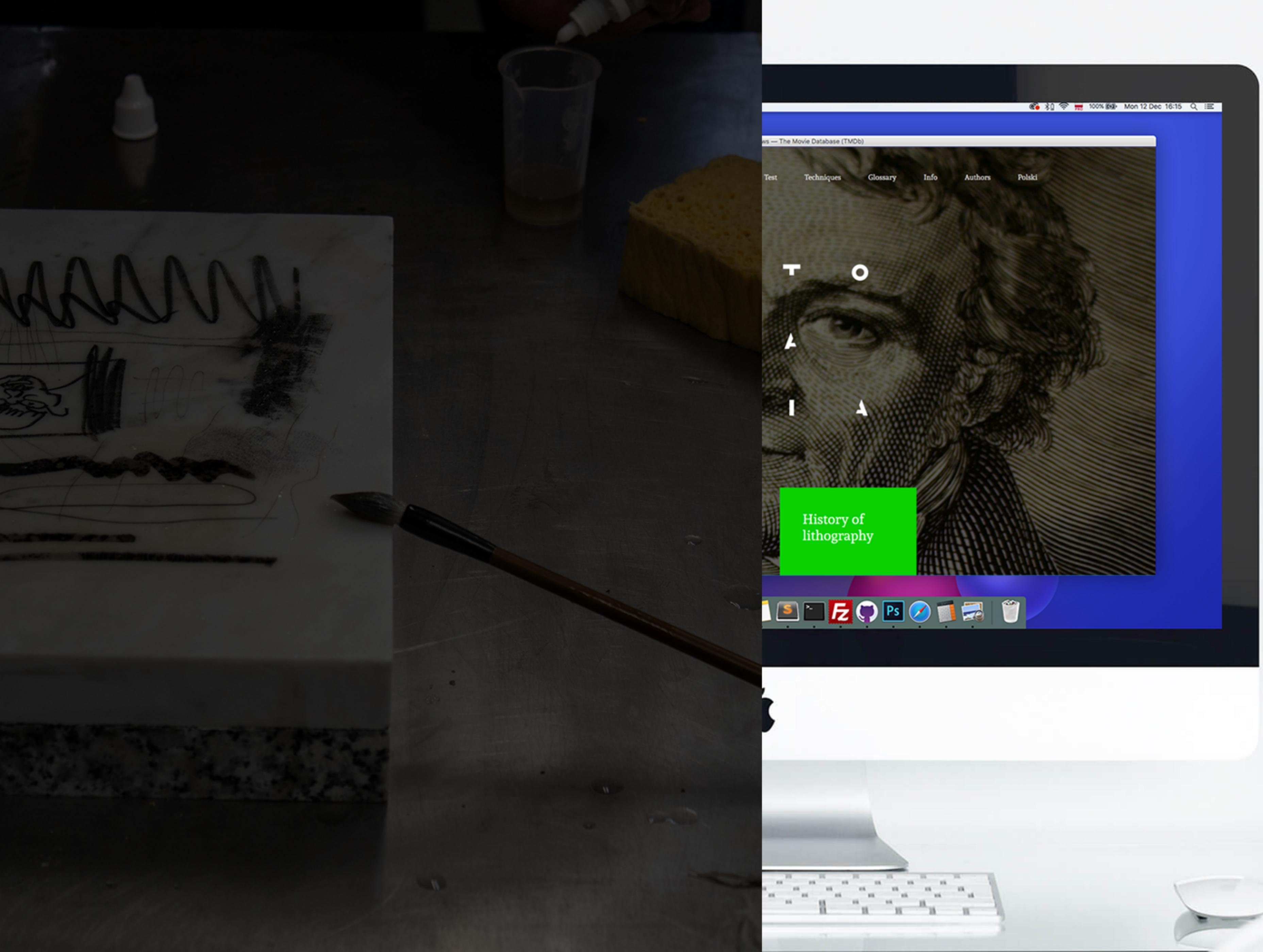


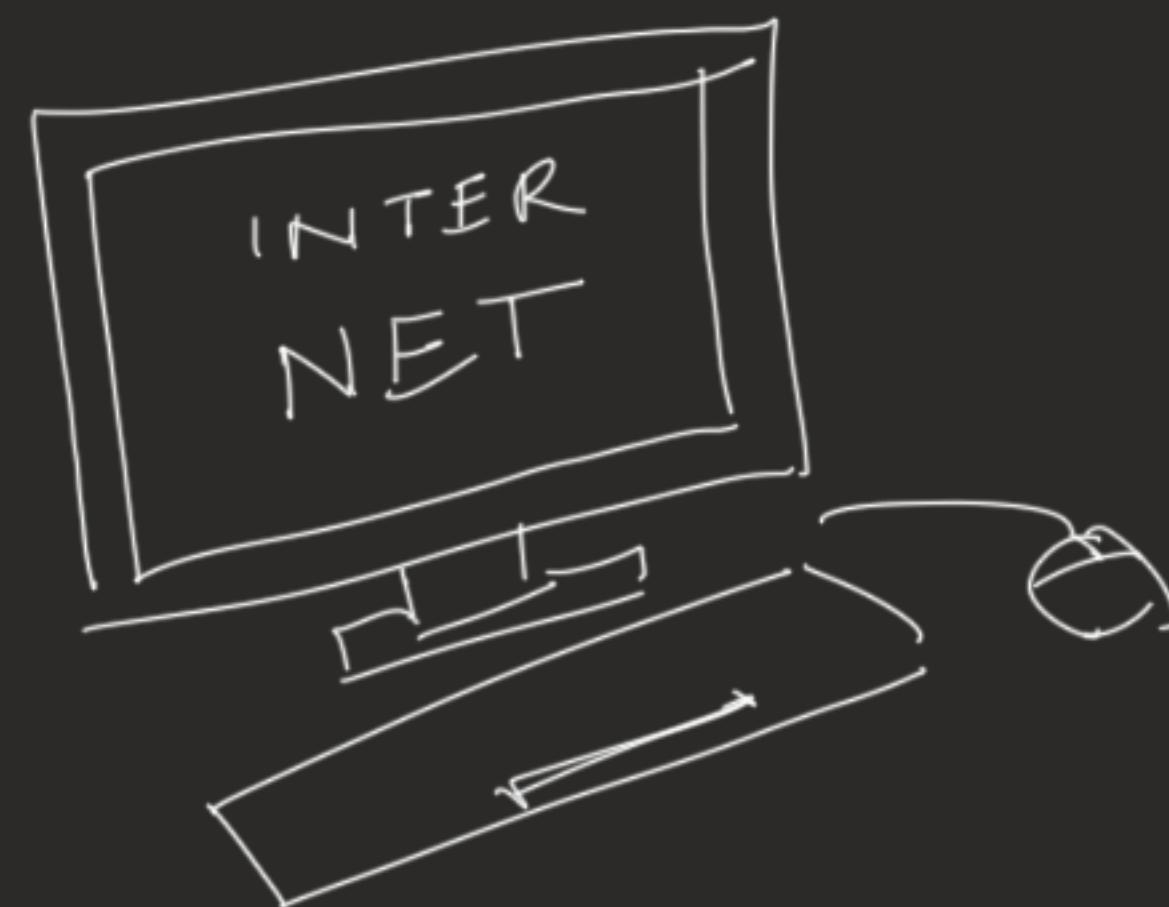
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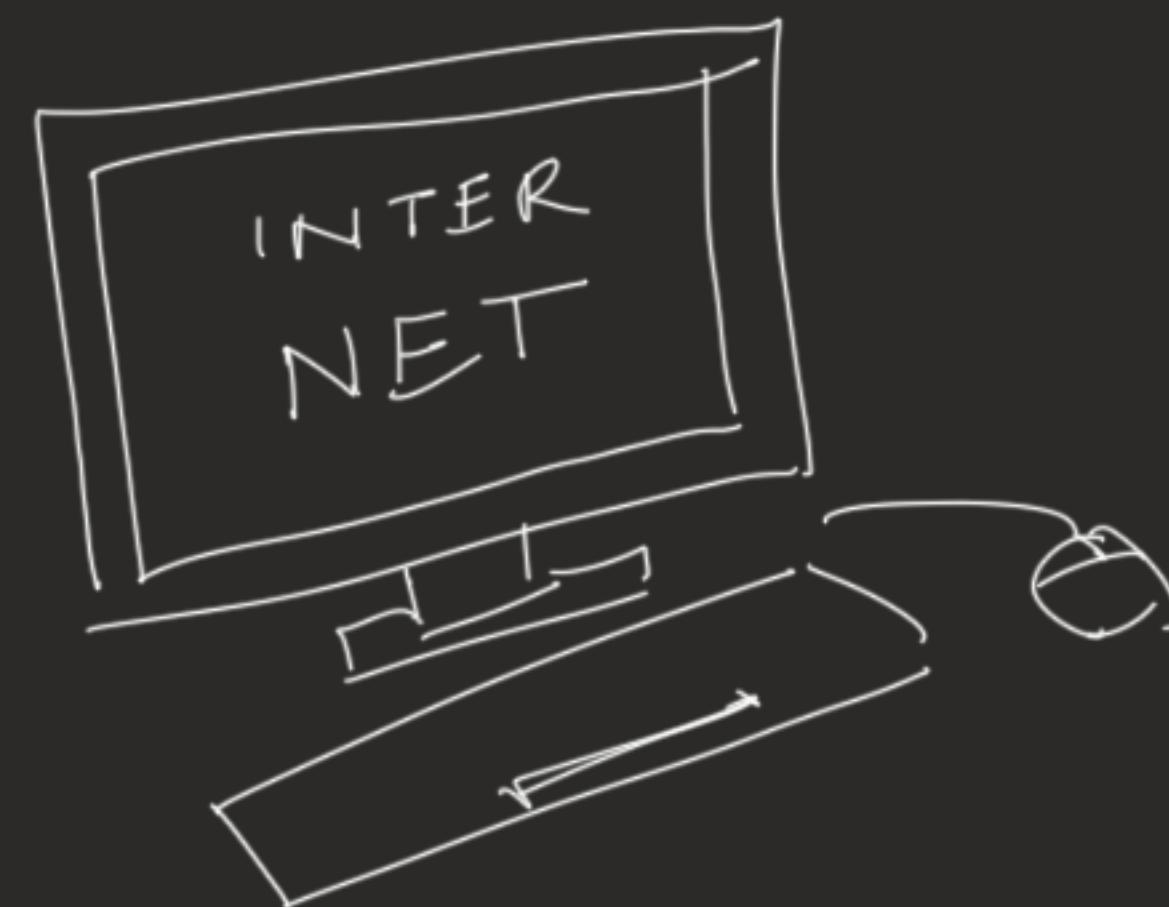
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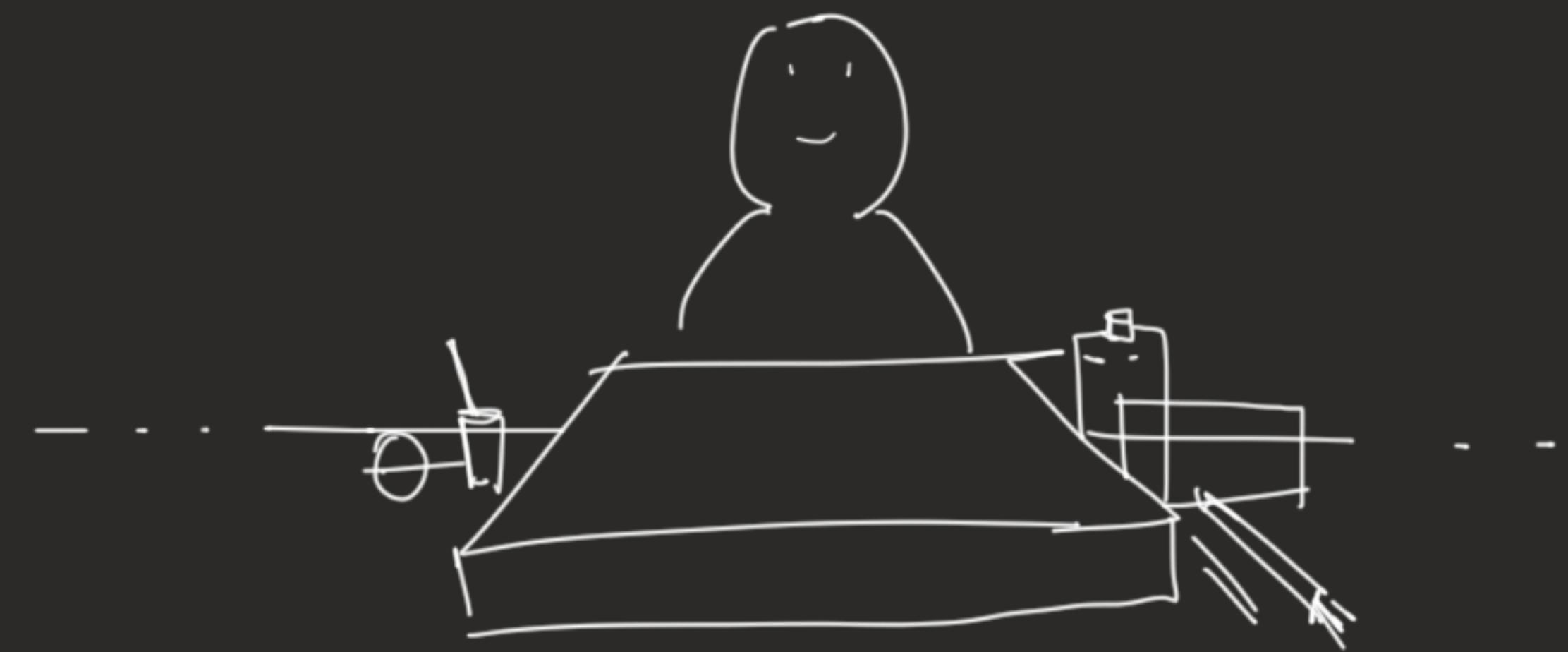
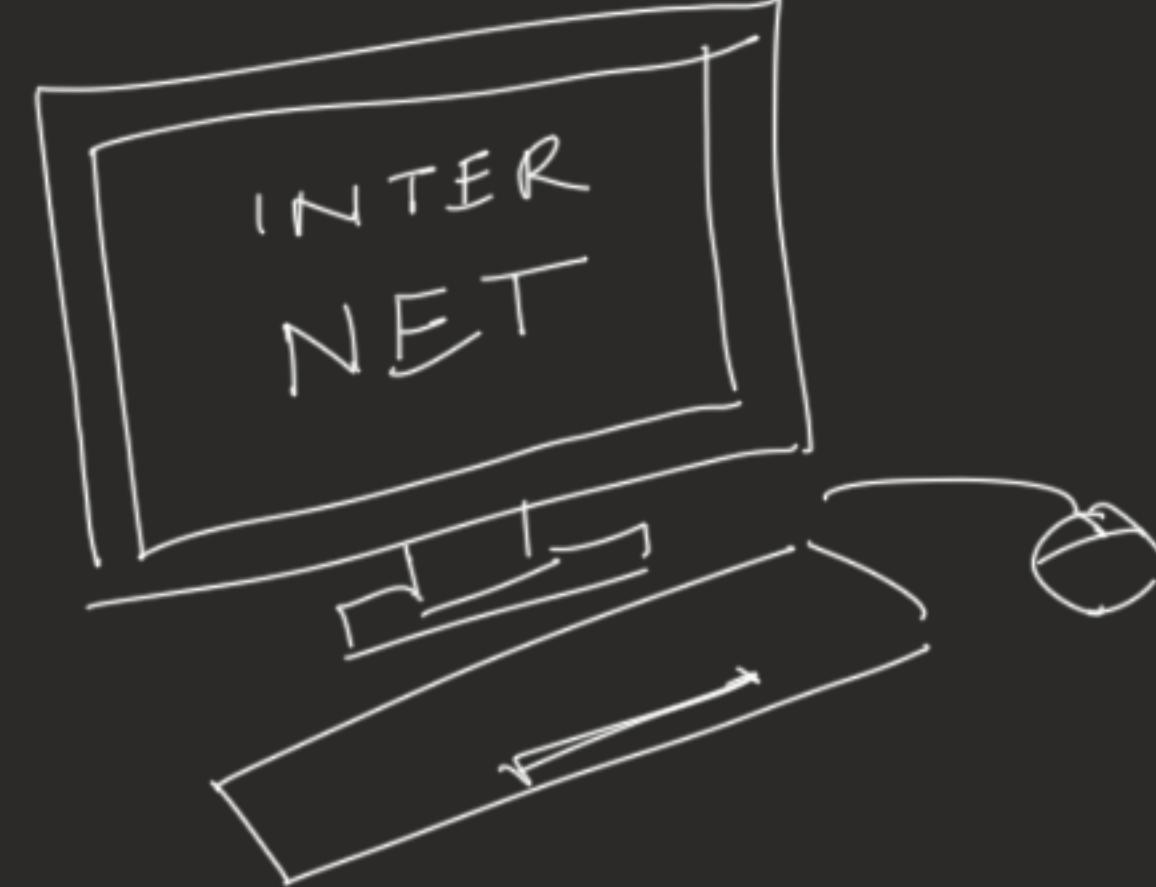
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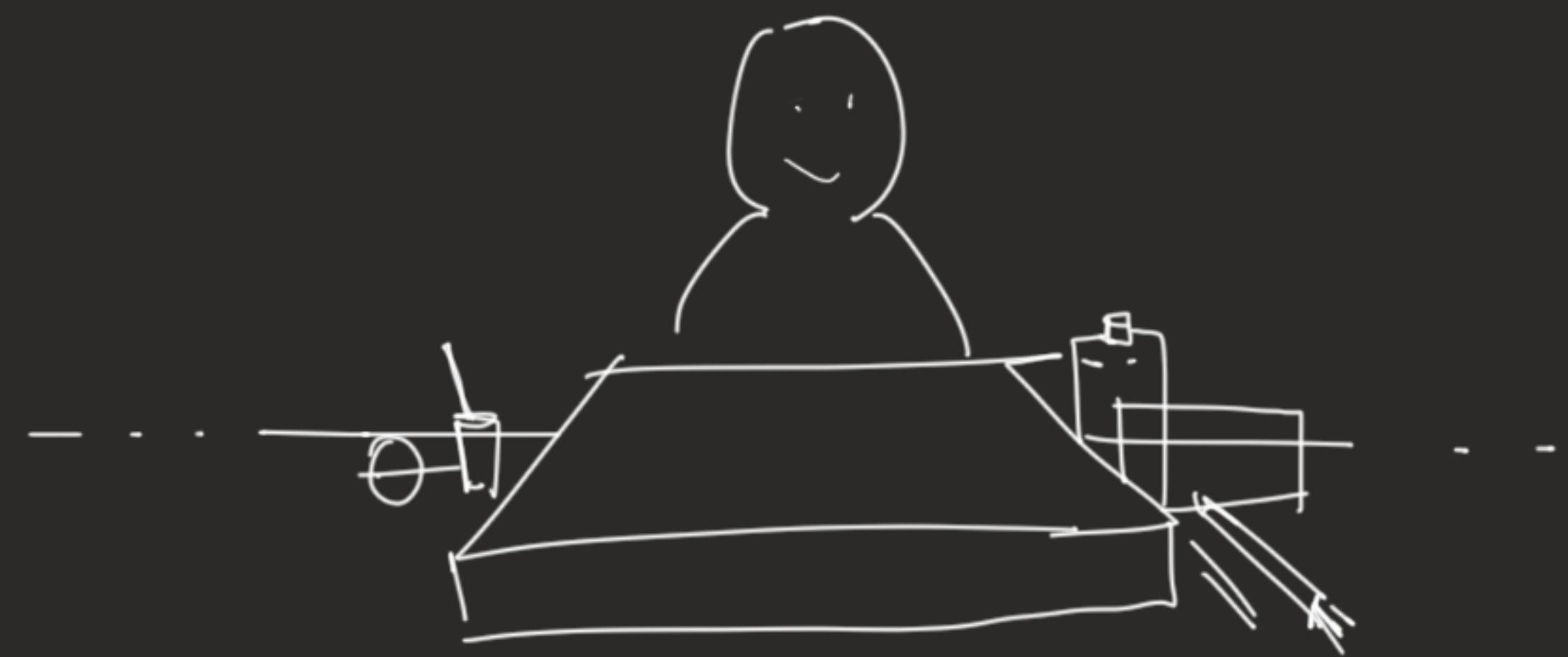
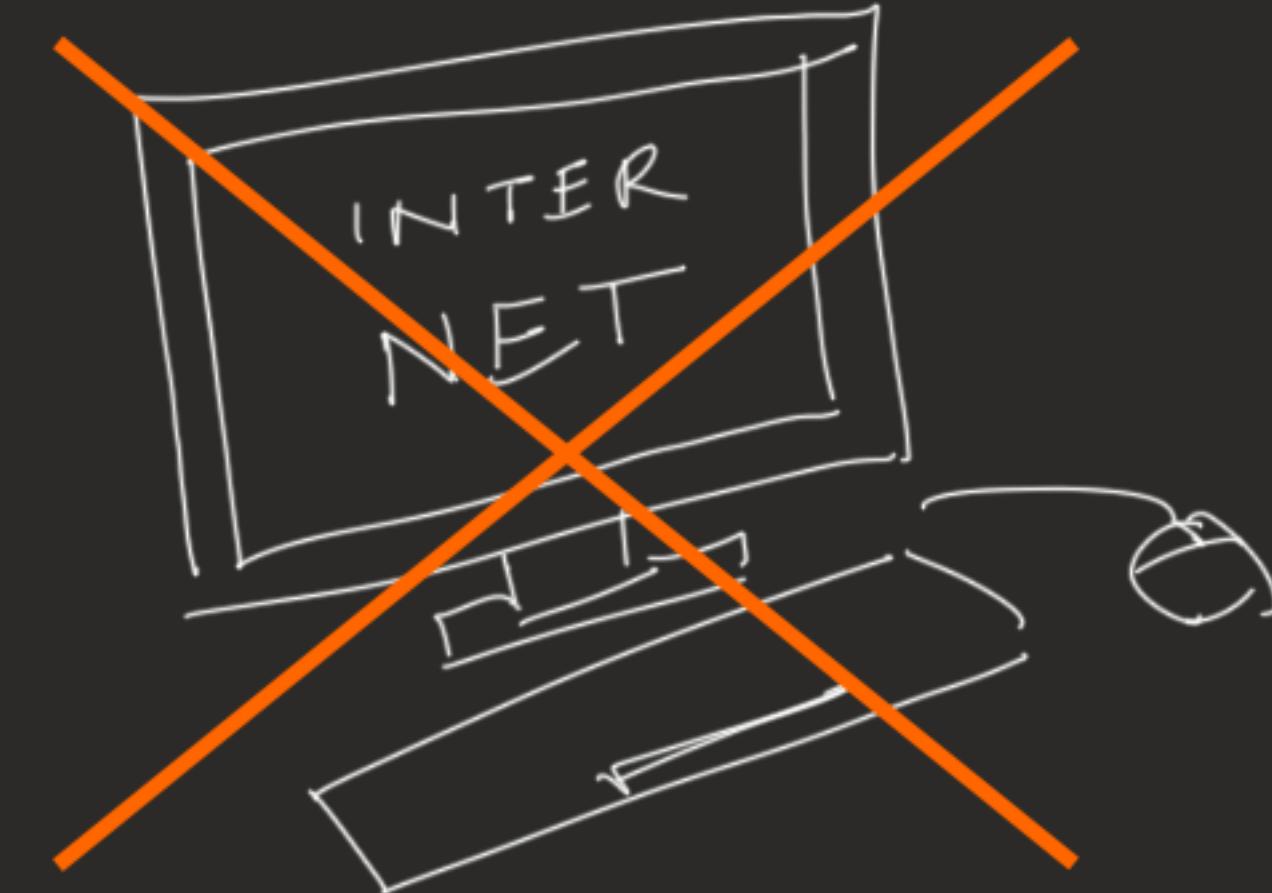
....how can we use internet in lithographic studio?











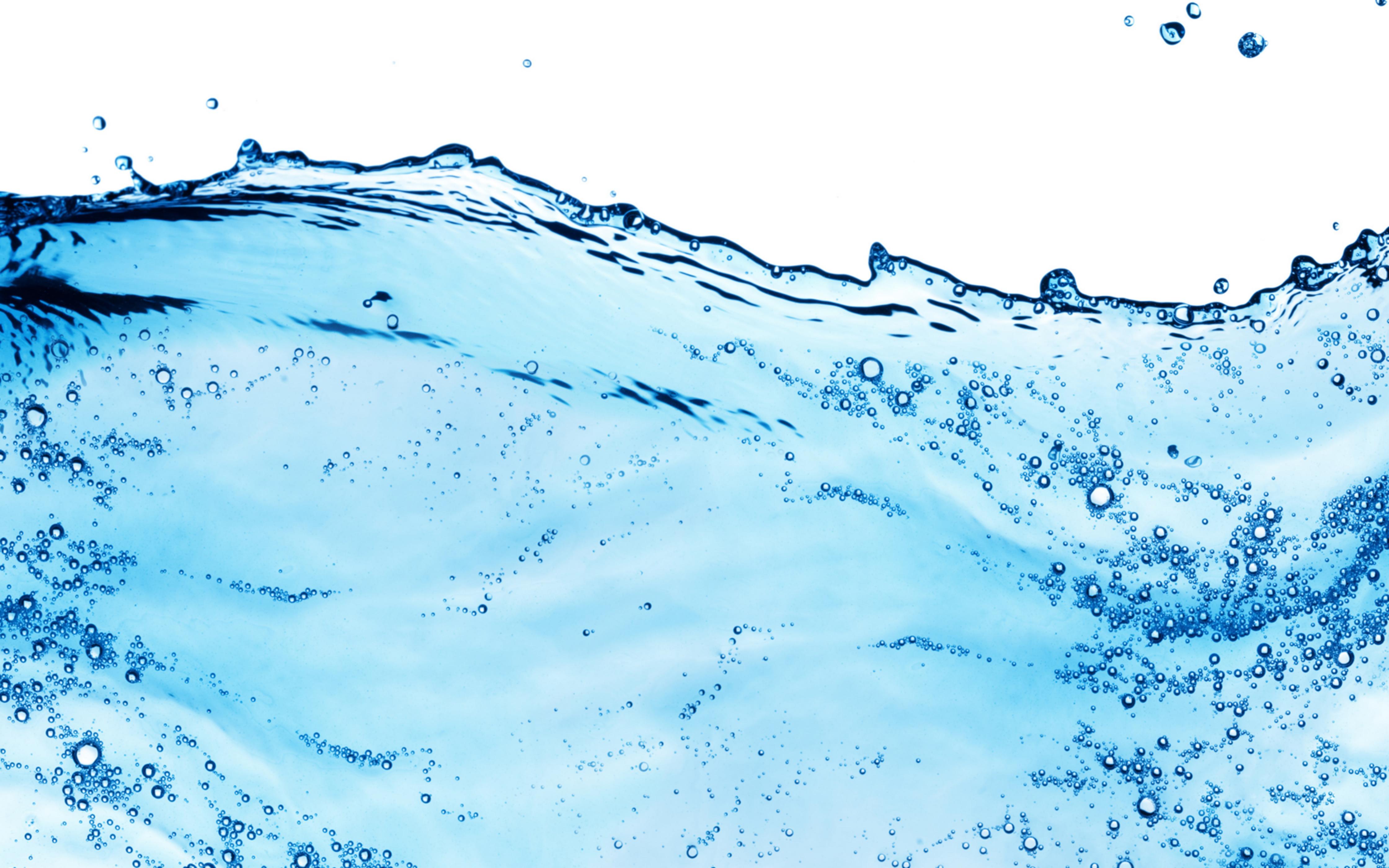
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# IS USING INTERNET IN STUDIO COMFORTABLE?

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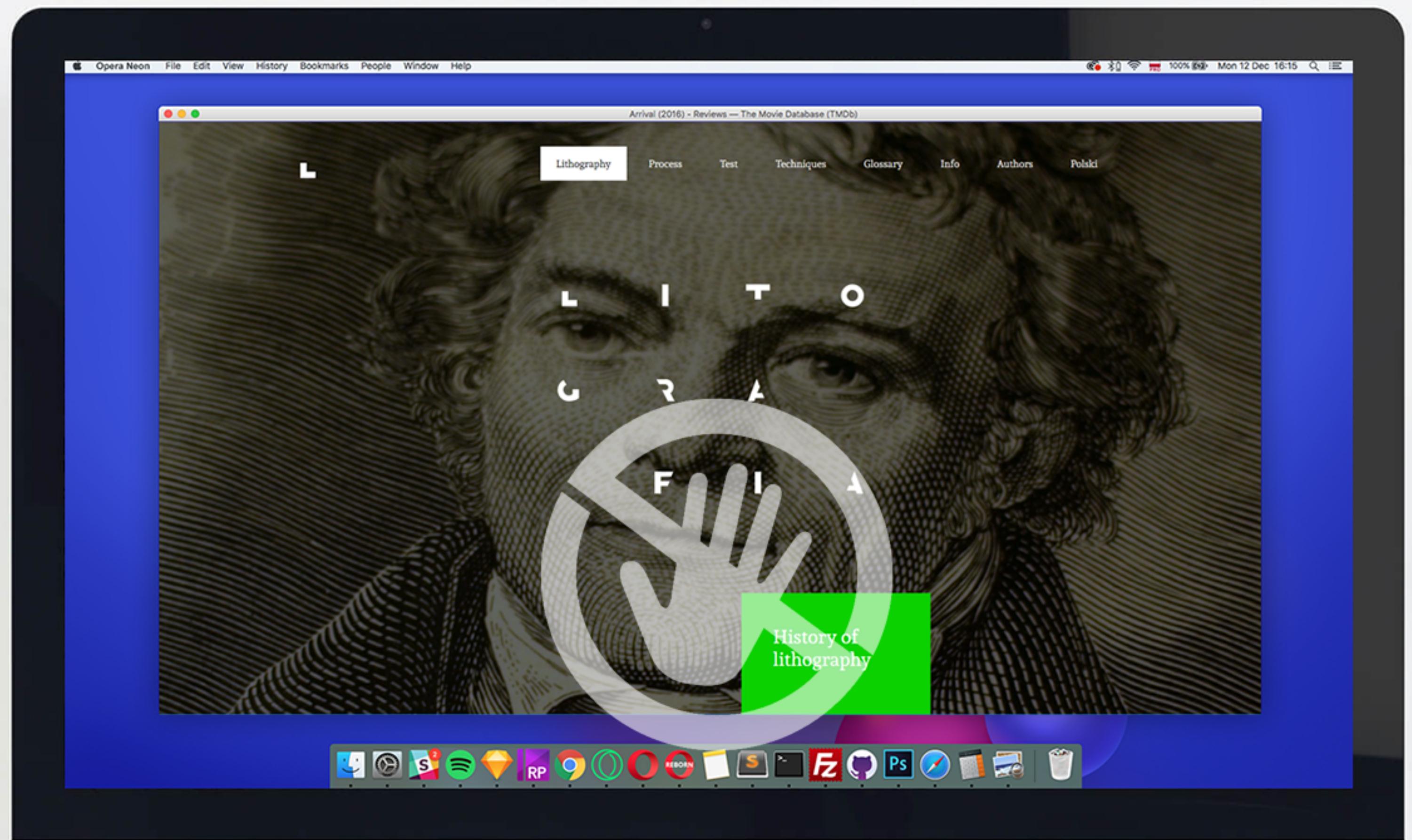
....how about ink and water?

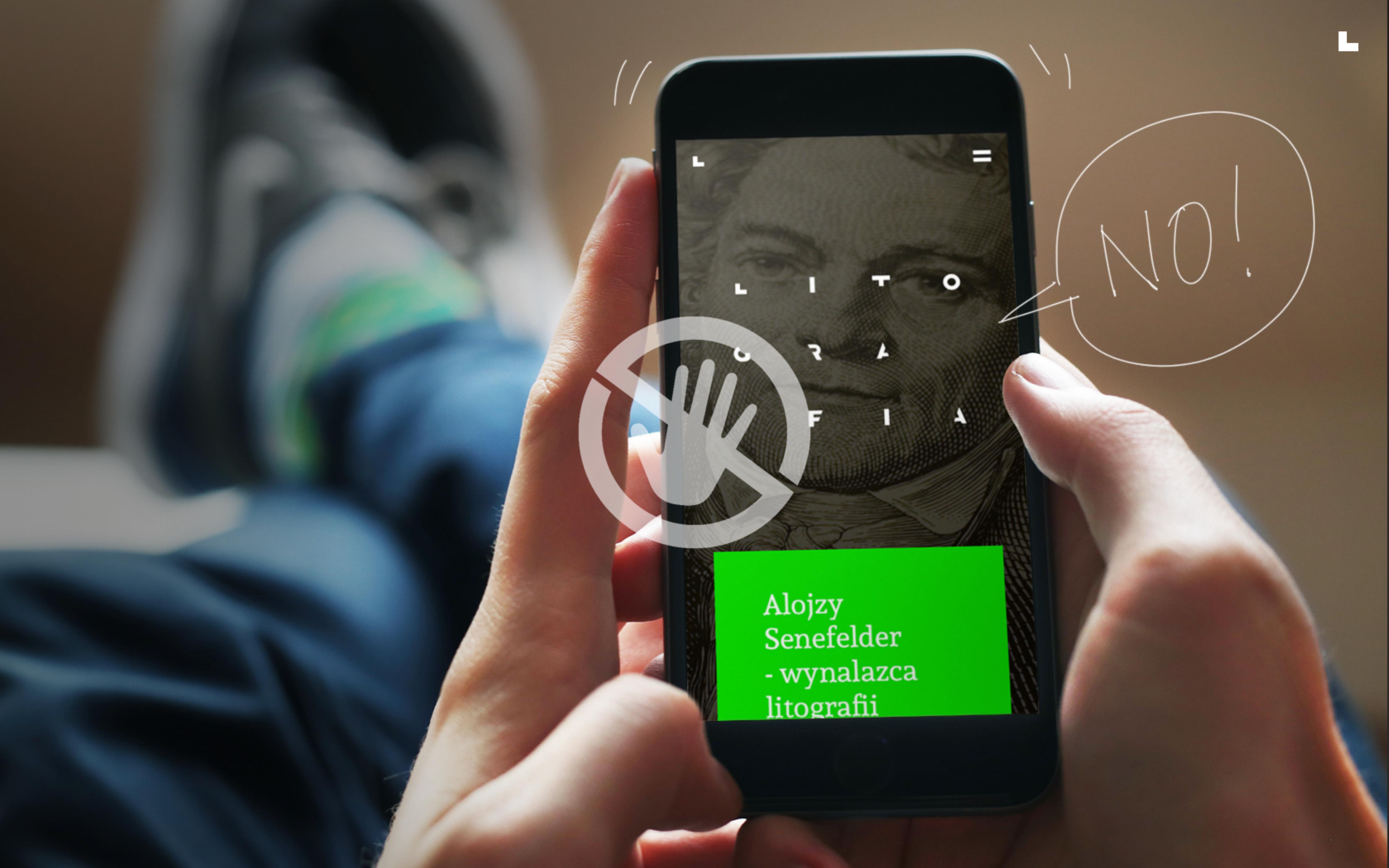












Alojzy  
Senefelder  
- wynalazca  
litografii

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# AN ASSISTANT IN WORKSHOP?

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L



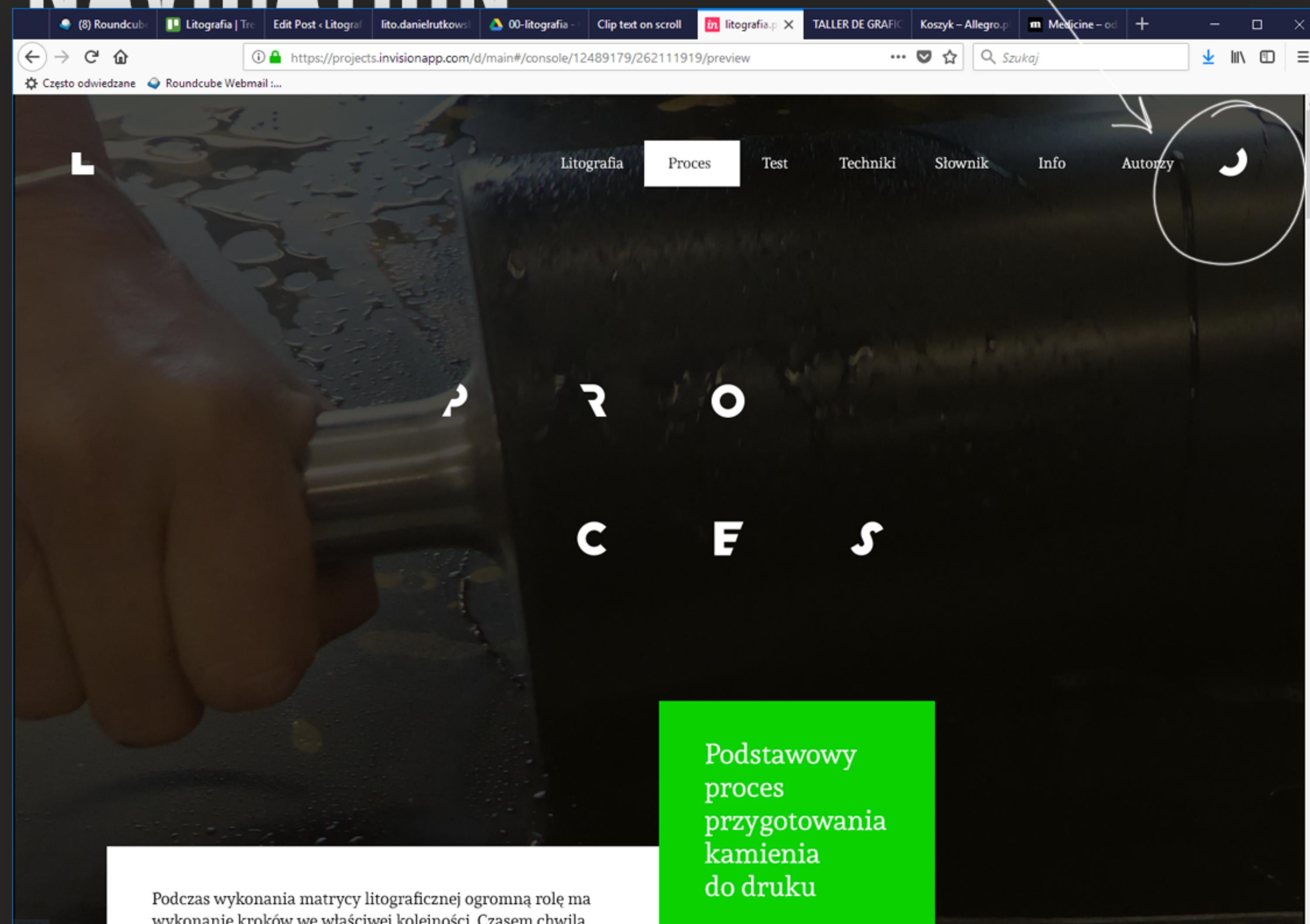
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# VOICE NAVIGATION

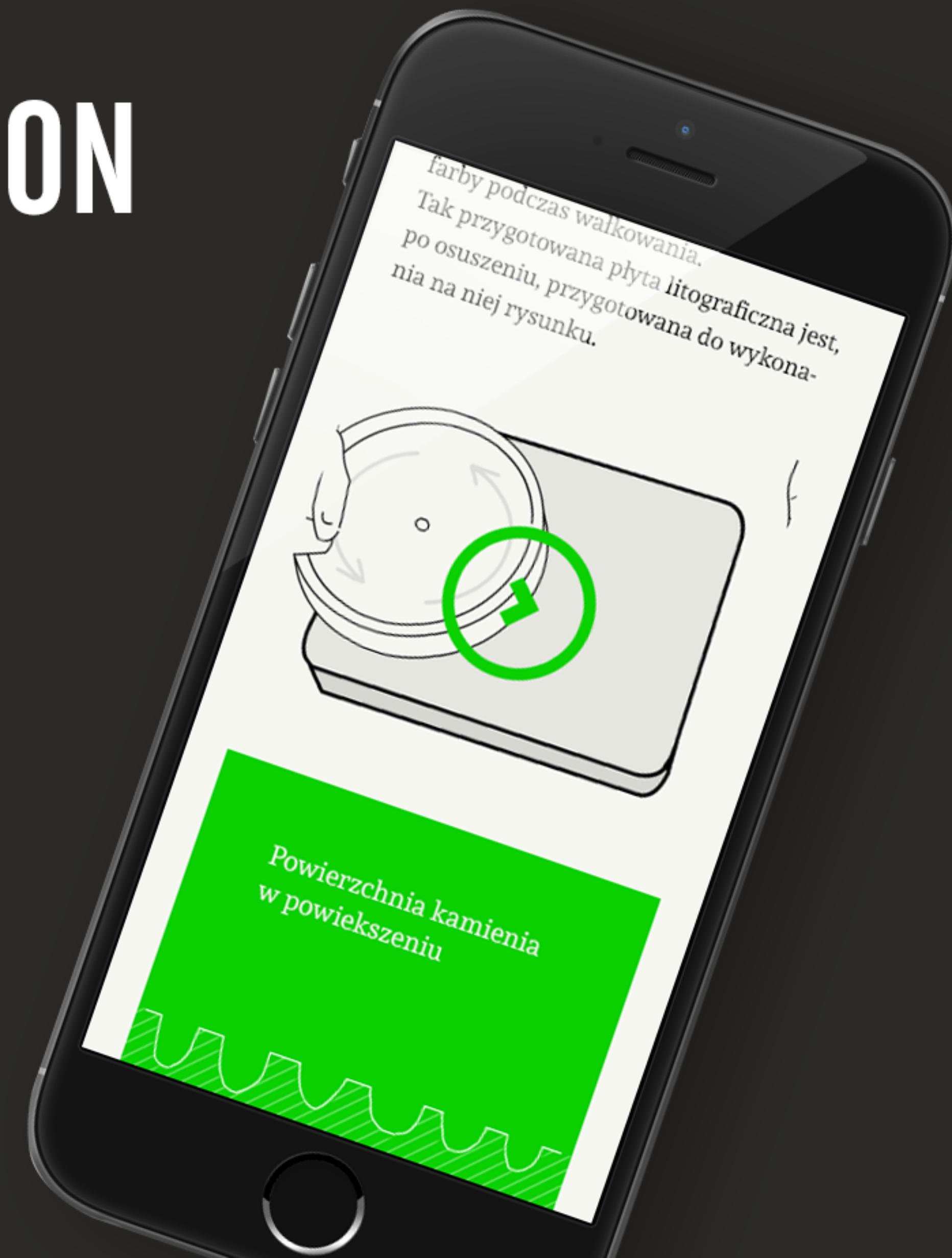
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huh?

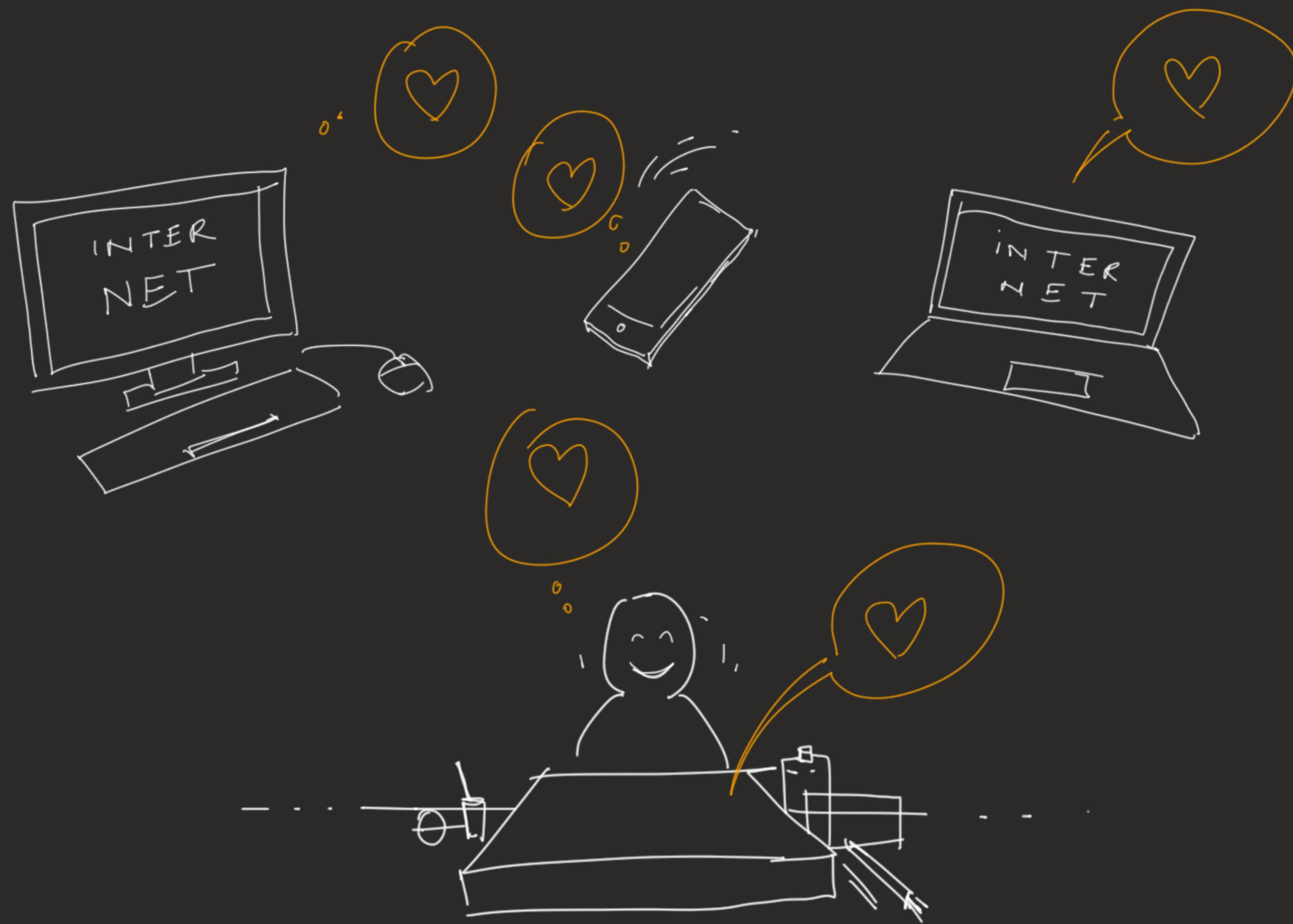
# VOICE NAVIGATION



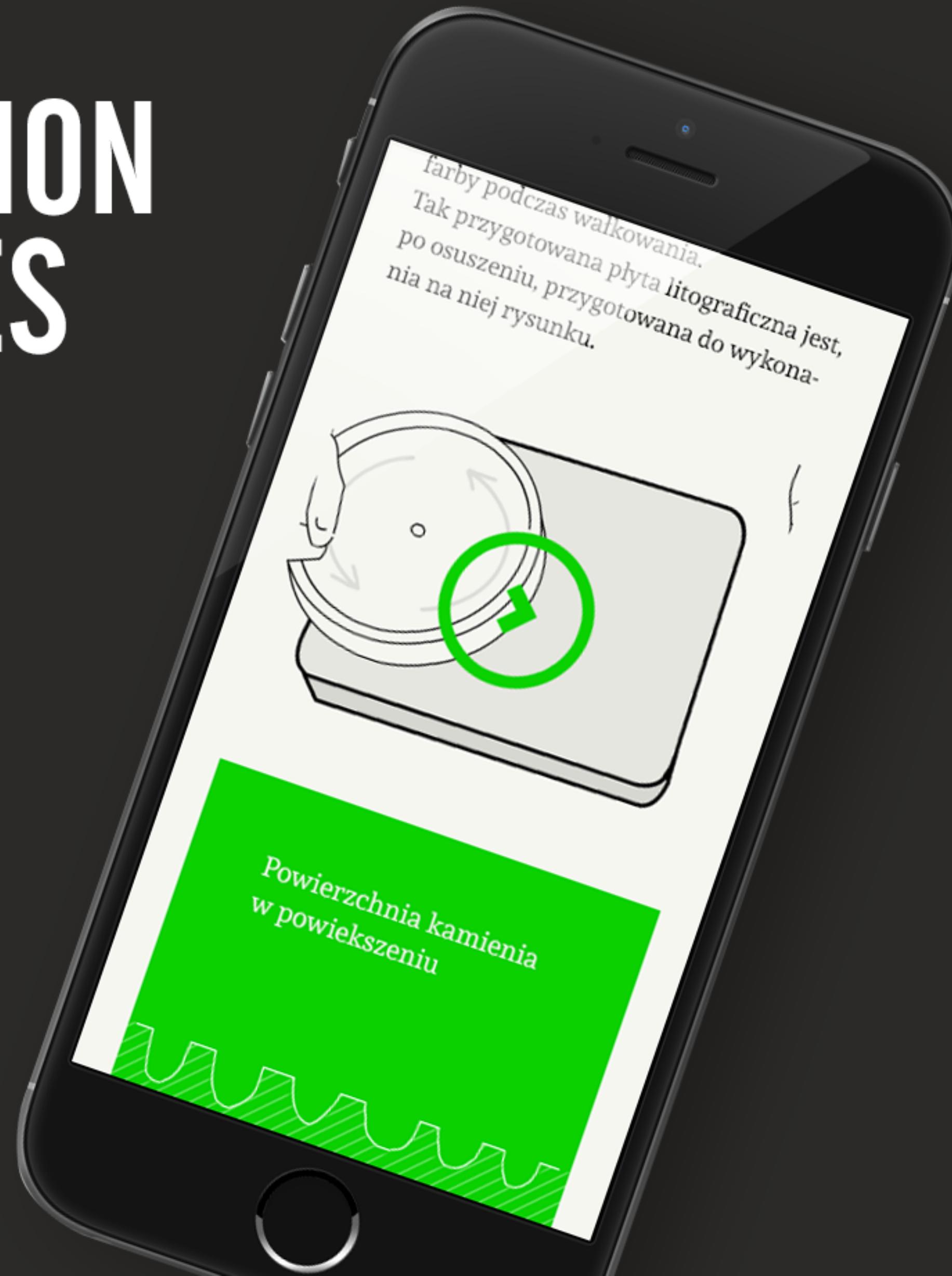
# VOICE NAVIGATION



L



# THE PRESENTATION OF POSSIBILITIES OF VOICE NAVIGATION



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# THANK YOU

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Anna Trojanowska  
aniat@litografia.pl  
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