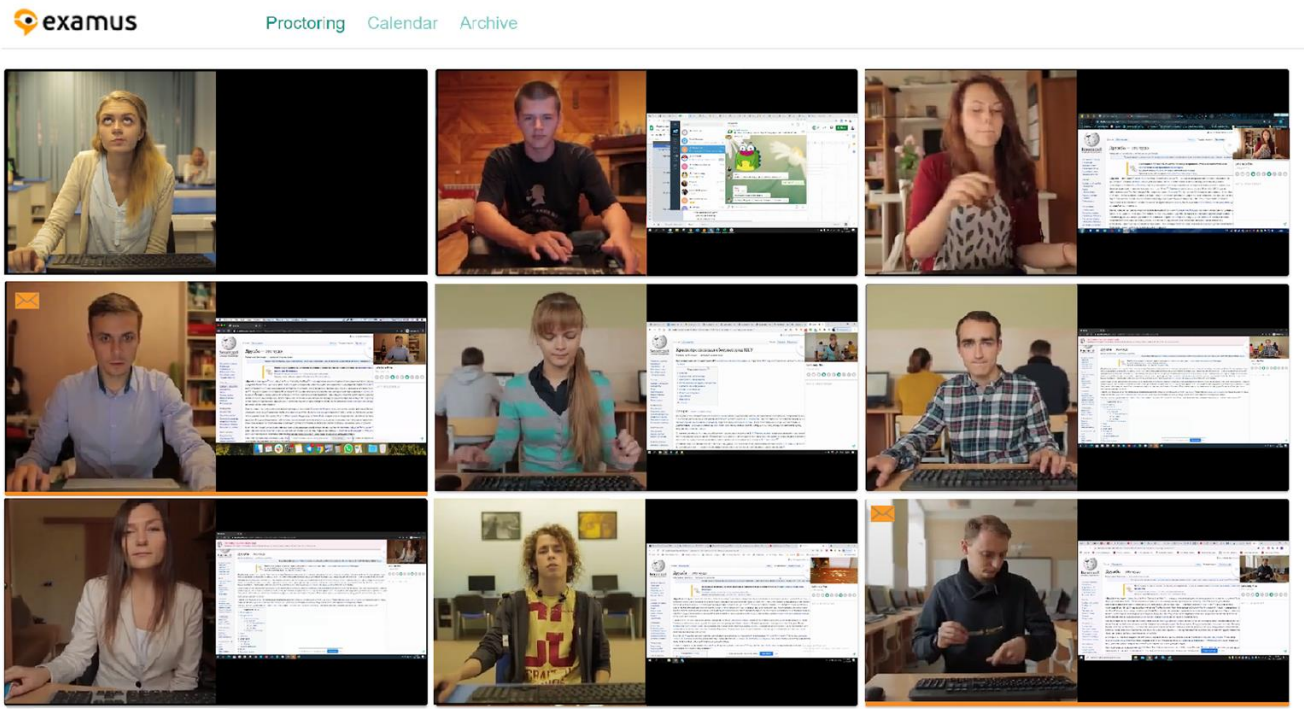
Pan Africa Skills & Consulting Ltd

New generation AI proctoring solution

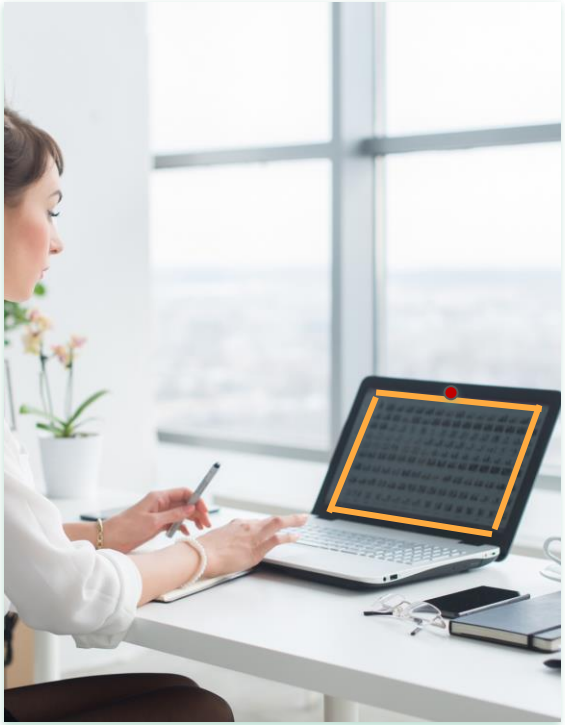
The tool to monitor students behavior in online education

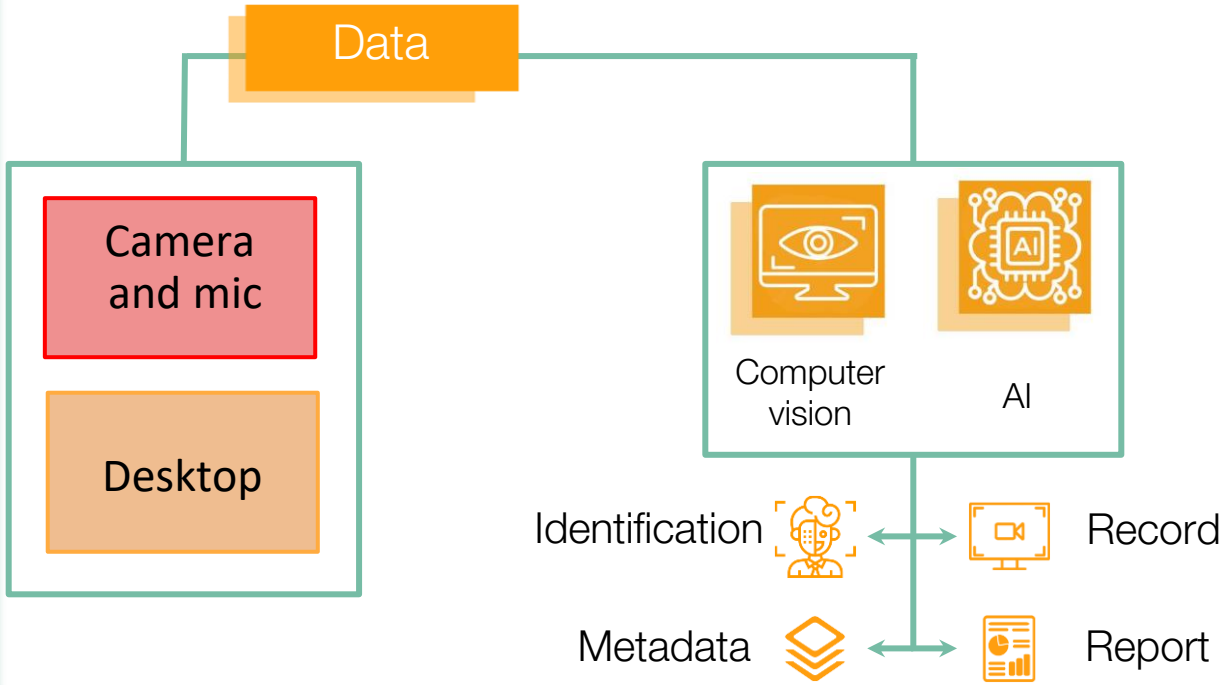
examus

What is proctoring?



How Examus works





Examus cluster and OpenAPI give absolute flexibility

Works with

examus

Works on

Market segments Examus deals with

- Universities and schools
- MOOC platforms
- Educational companies that have their own platform for online learning and testing
- Testing centers
- Certification centers (issuing language, medical, etc. professional certificates and permits for hazardous production levels)
- Corporate customers who conduct internal employee training and evaluation
- Companies that conduct assessment by order of corporate clients
- HR agencies that conduct mass online testing of candidates

Features

AI proctoring features

Face recognition

Person identification

Gaze detection

Speech detection

Absence of the person

Unauthorized person

Tab change

Secondary monitor

Smartphone usage*

Earphones usage*

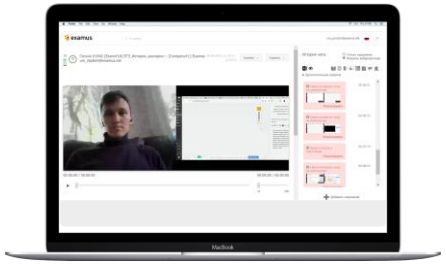
** for exams of long duration may require additional time for post-processing (due to significant server load)*

Three proctoring options

1. Automated

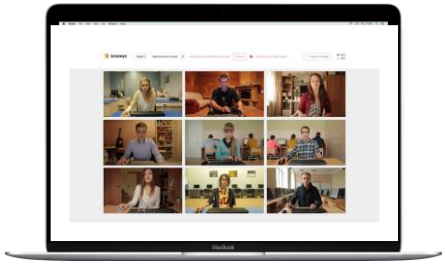
- Test-taker identification
- Recording audio, video and desktop
- Detailed report on violations
- Violation probability calculation

2. Post-review



Automated PLUS post-review exam recording by proctor

3. Real-time



Automated PLUS real-time monitoring and exam control by proctor

Different working modes

Parameter	Link generator (without integration)	Examus App	API - integration
Usage case	Small-scale assessment projects to be run without LMS or based on a custom testing system	Assessment projects that require maximum control over test-takers' behavior	Long-term assessment projects with maximum usability and ease of exam set up
Implementation time	Immediately (or after checking the systems' compatibility, if required)	Within 1-2 days (after checking the systems' compatibility and linking the app to be installed by the users)	Within 2-4 weeks (depending on the particular LMS / testing system)
Advantages	Customer has full control over the exam set up, scheduling and procedure with Examus providing support and service	Additional lockdown features to the proctoring functionality	One-stop solution with full Examus functionality available within the Customer's LMS

Mobile App

Examus

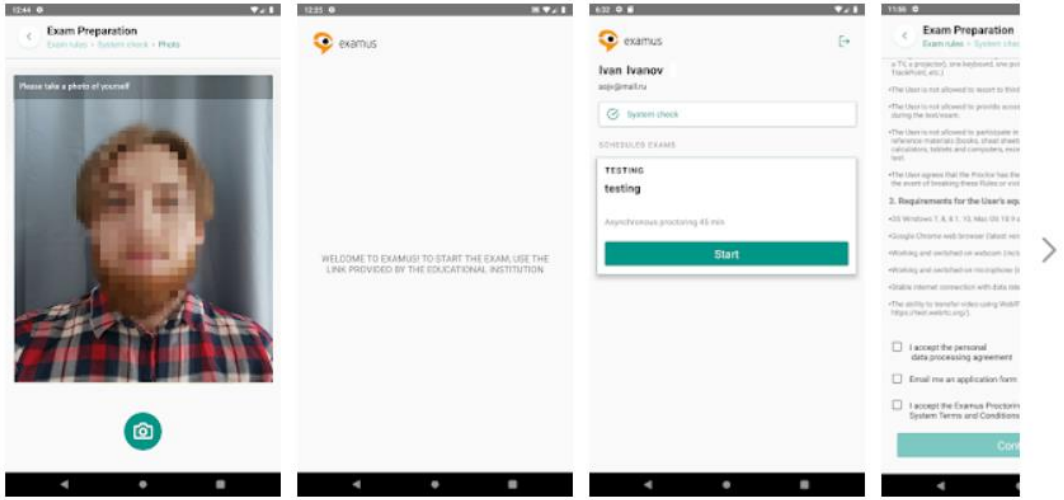
Examus Education

PEGI 3

This app is available for your device

Add to Wishlist

Install



Examus Mobile App

- webcam video / desktop recording
- lockdown features
- post-exam review of recordings by a human proctor

Mobile App Features

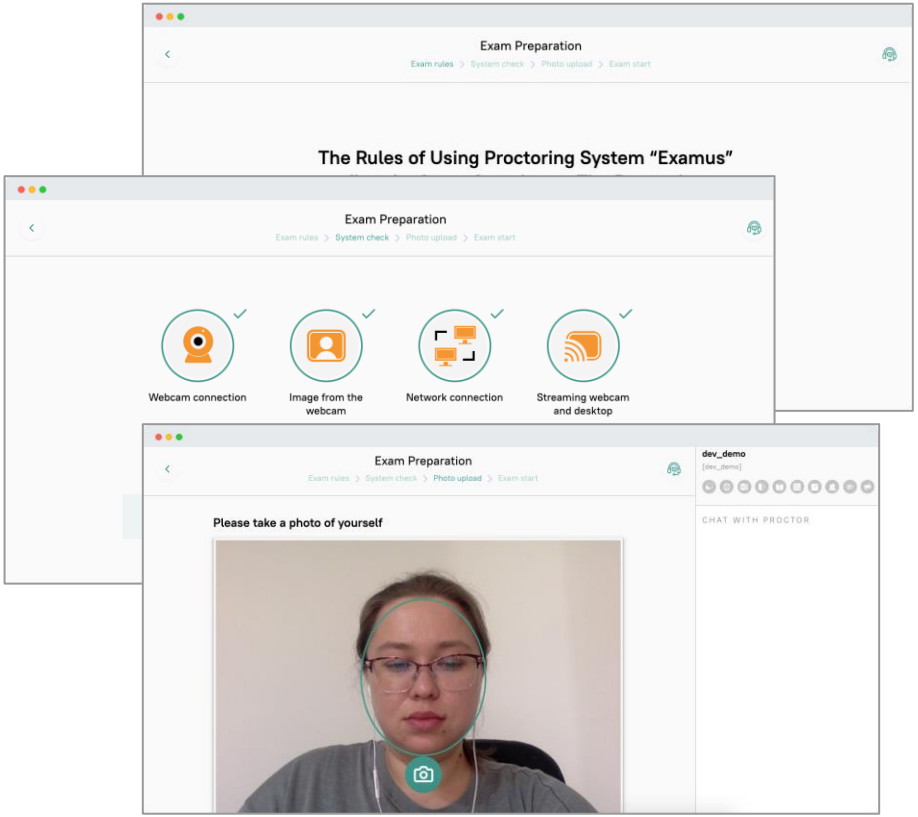
Mobile app feature	iOS app	Android app
Proctoring mode	Post-review	Post-review
Special lockdown regime	Yes *(special approval from Apple was received)*	Yes
Web camera video recording	Yes	Yes
Desktop recording	-	Yes

User Interfaces

Proctored exam for students

Seamless procedure for students:

- Log in to their usual platform
- Find a test and click a link to Examus
- Read exam rules
- Go through system check
- Take photo (+photo of ID)
- Show working area
- Take exam



3 types of user identification

Identification by human

- student's webcam photo
- student's ID webcam photo
- human proctor compares 2 images

Identification by AI

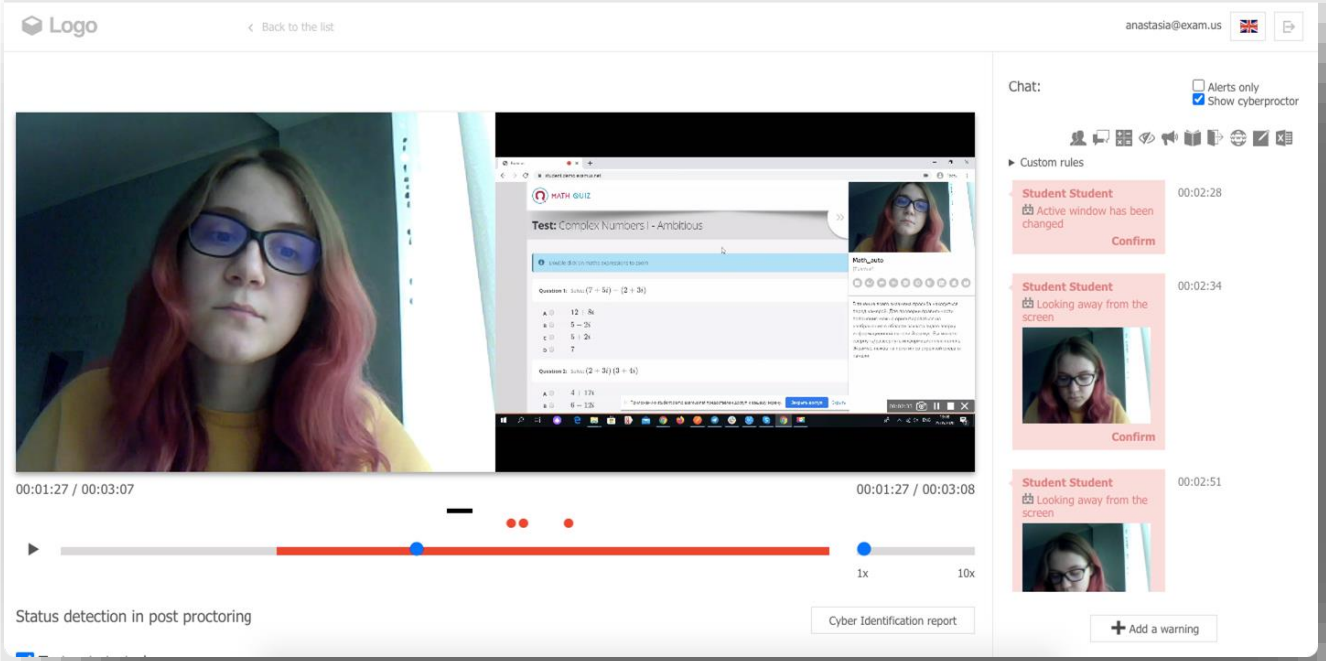
- student's webcam photo
- student's profile photo (received from LMS)
- AI compares 2 images

Biometric identification*

- ID verification
- liveness check
- optional check via external biometric provider

** an extra fee will apply due to the use of a 3rd party solution*

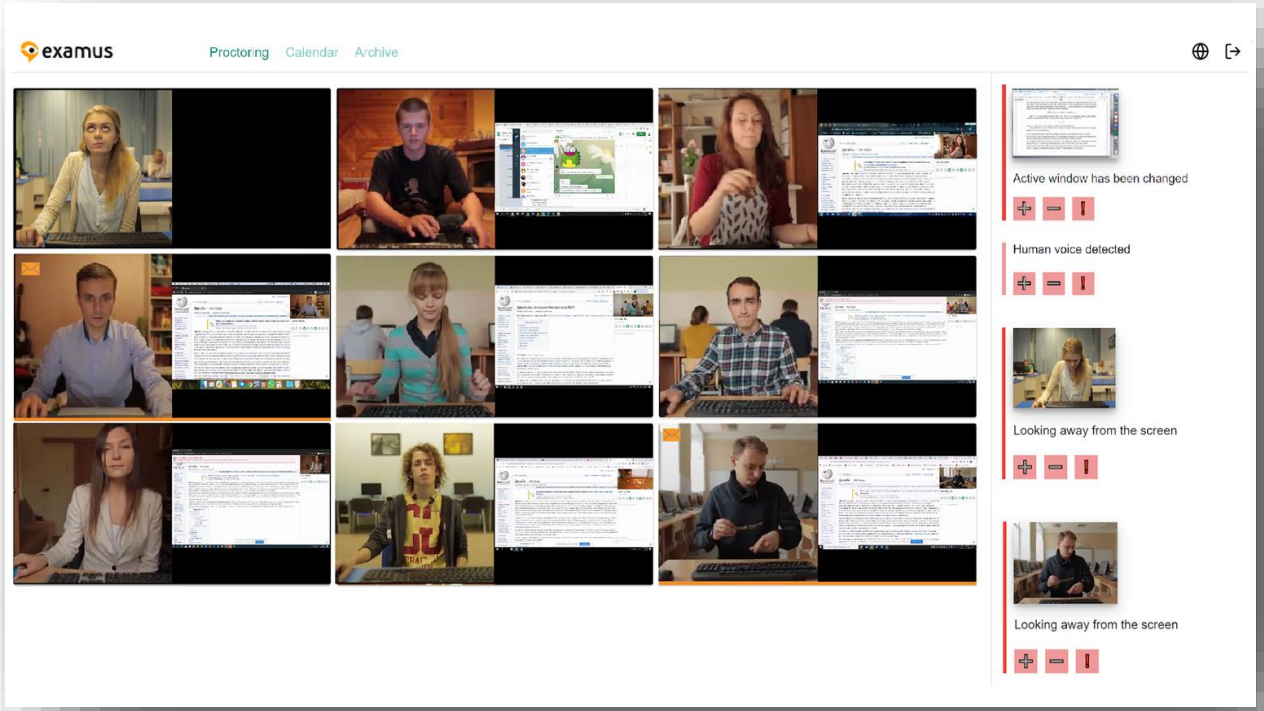
Interface for post-review proctoring



Features for post-review proctoring

- browsing videos in video archive
- filtering videos in video archive
- verifying student's photo and ID
- viewing synchronized videos from student's webcam and desktop
- playback of sound from student's microphone, synchronized with video
- reviewing alerts about possible cheating attempts from AI algorithms, confirming violations or deleting alerts
- adding violations
- setting exam status

Interface for real-time proctoring



Features for real-time proctoring

- monitoring several students simultaneously by one proctor
- receiving and verifying student's photo and ID
- admitting students to the exam
- viewing videos from student's webcam and desktop
- hearing sound from student's microphone
- receiving alerts about possible cheating attempts from AI algorithm
- messaging students
- stopping exam
- setting exam status

Post-review vs. Real-time

Parameter	Post-review mode	Real-time mode
Human proctor	Reviews the recording in video-archive	Monitors students in real-time during the exam
Time allocation	1 hour long exam recording can be reviewed in 6-10 minutes	Proctor monitors up to 10 students simultaneously, but should do it during the whole exam
Cyber-proctor performance	• most of violations are detected during the exam, • smartphone/headphones are detected on the server-side in post-processing*	• most of violations are detected during the exam, • smartphone/headphones are detected by human proctor
Limitations by number of simultaneous exam takers (per server)**	10,000 (up to 25,000 according to the load testing)	500

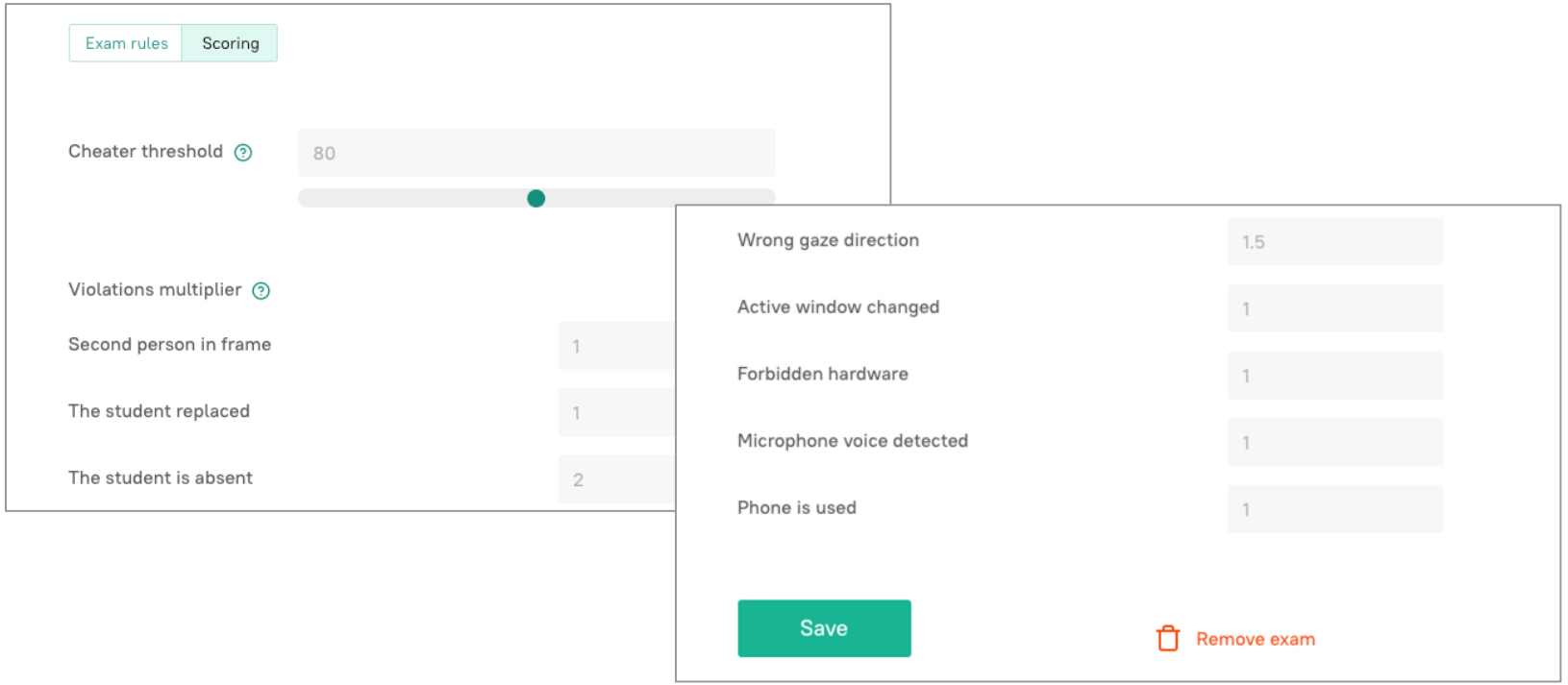
** for exams of long duration may require additional time for post-processing and additional fee (due to significant server load)*
***the required load should be specified in a Work Order and may require Examus team some time to scale the server*

Administrative features

- managing exam sessions
- managing exam parameters*
- managing students*
- managing proctors
- managing cheating score calculation parameters
- viewing scheduled exam sessions
- setting up and exporting reports with stats on violations

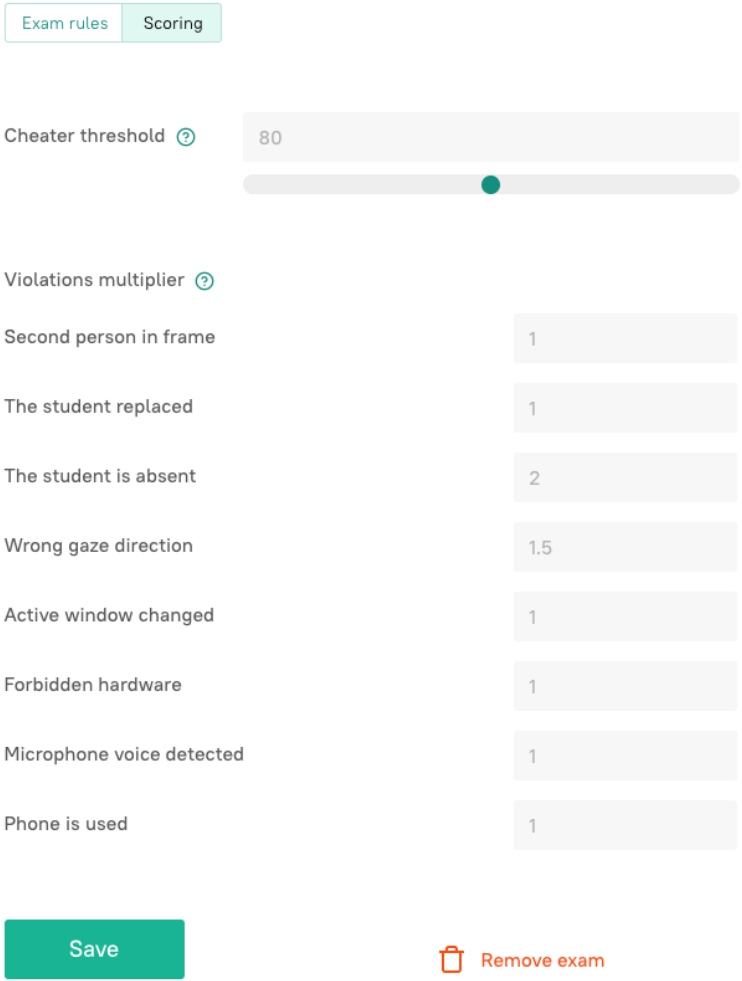
**in the case of integration with LMS it can be managed in LMS*

Exam settings



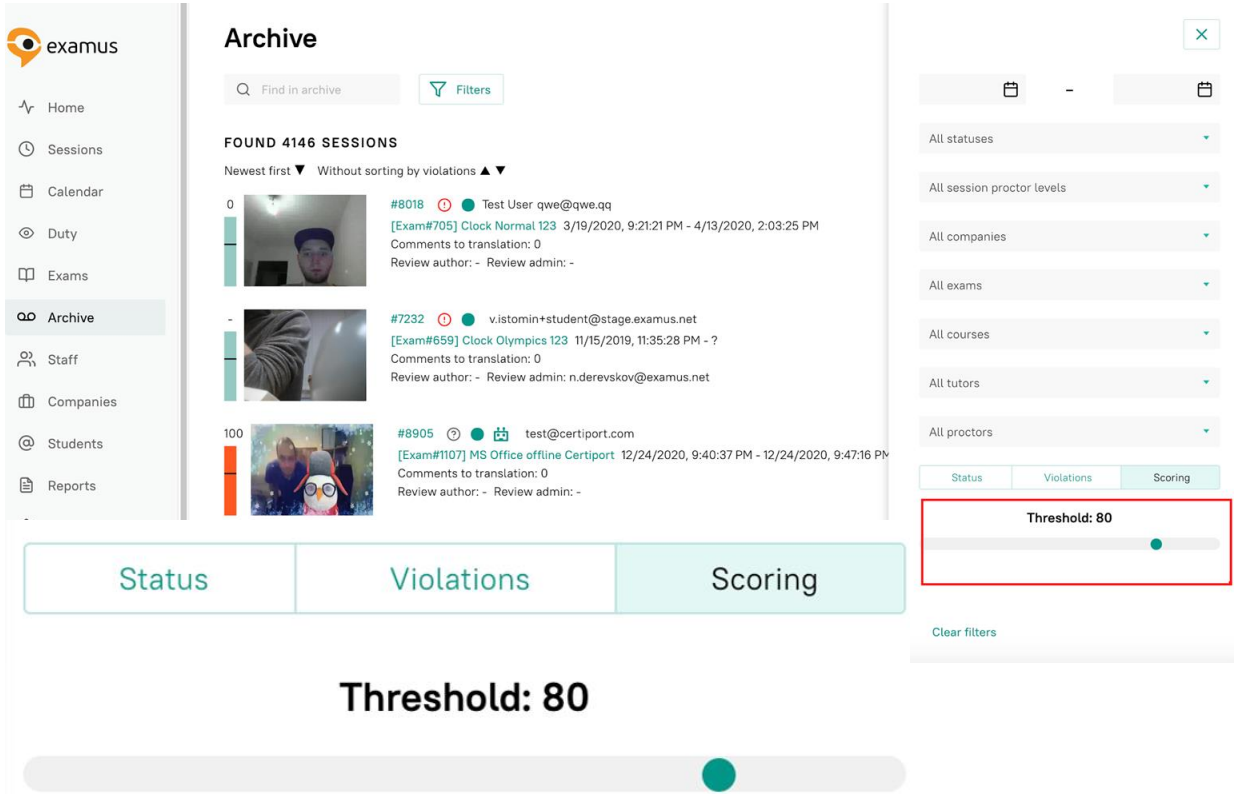
Step 1

Set the multiplier for each type of violation: which behaviors matter more to you?



Step 2

Set the cheating indicator threshold; you can play around with trigger points for past sessions to find suitable values



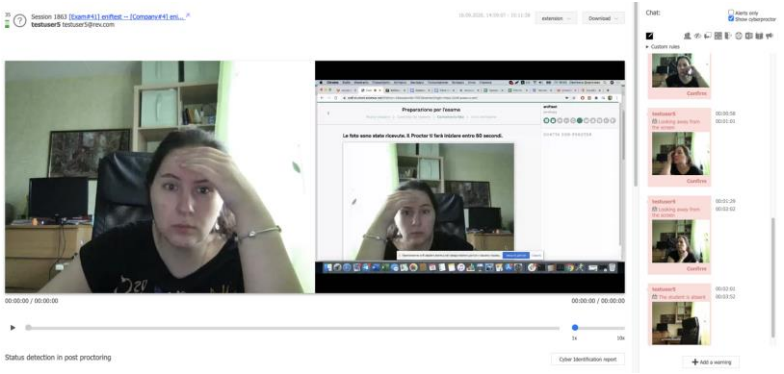
Step 3

Once the exam has passed, you can inspect a few sessions and verify that the cheating indicator shows accurate results.

At that point, you can make changes to the multipliers and the threshold if you need better precision.

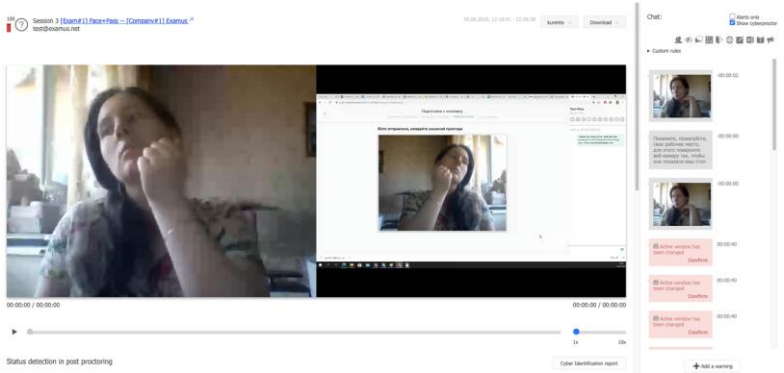
✓

This session should pass



☐

This session should NOT pass

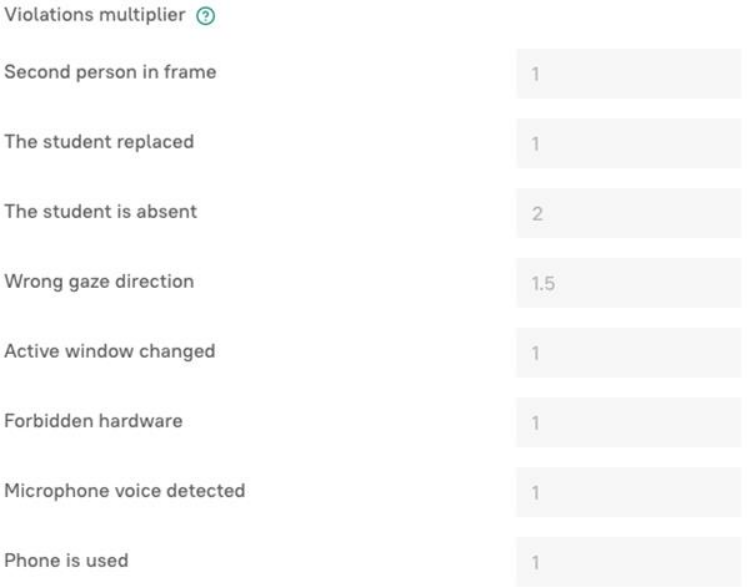


Step 4

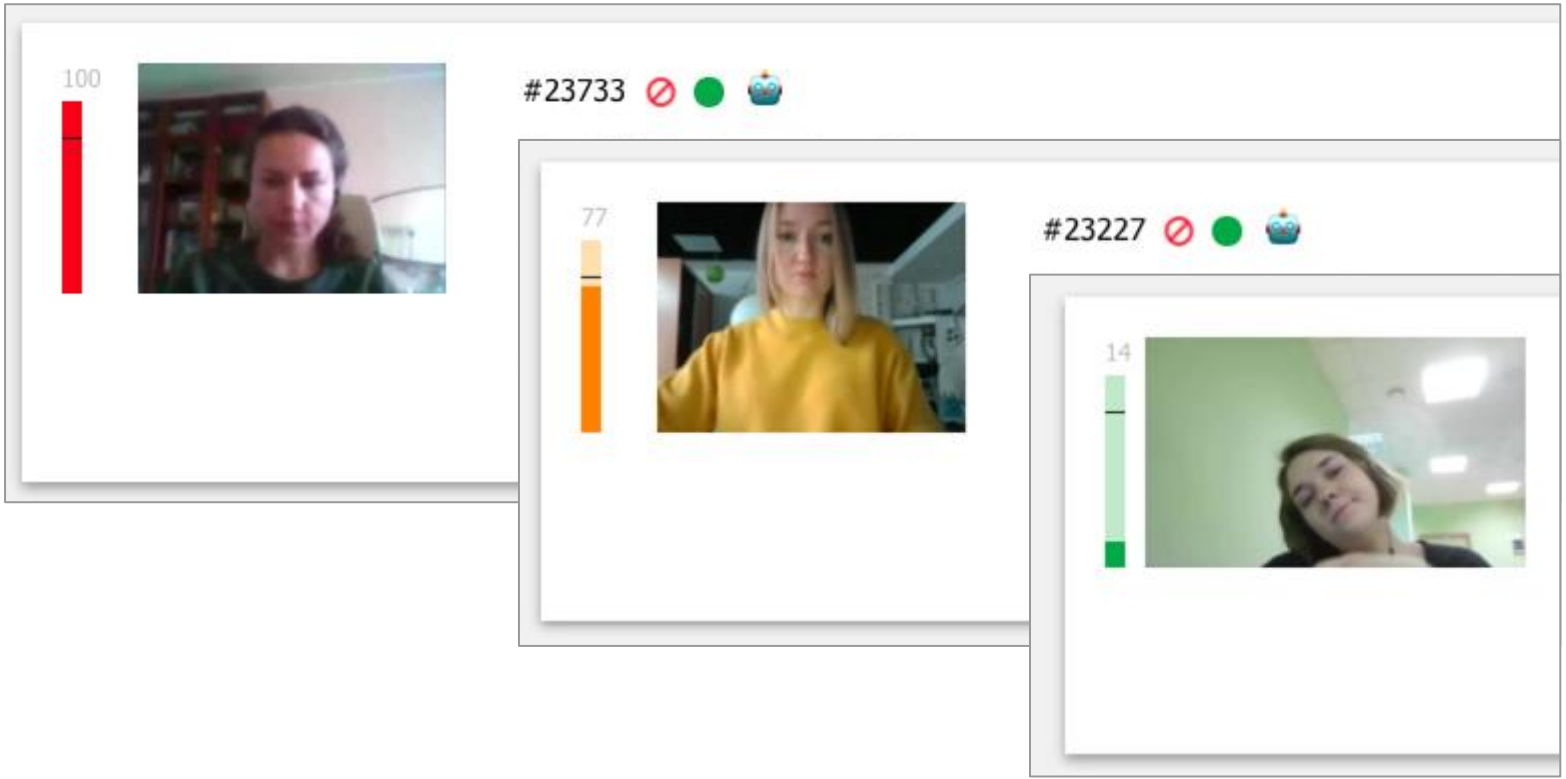
Go to the exam configuration and try different settings

Threshold

Violations multiplier



Cheating score calculation



Reports: exam statistics and per session reports

	A	B	C	D	E	F	G	H
1	Session ID	Session proctor level	Status	Status is correct	Available from	Exam date range	Exam start time	Exam end time
2	Session#132920	Normal	not inited	none	2020.07.23 18:00	-	-	-
3	Session#132921	Normal	not inited	none	2020.07.23 18:00	-	-	-
4	Session#132922	Normal	not inited	none	2020.07.23 18:00	-	-	-
5	Session#132925	Normal	not inited	none	2020.07.23 18:00	-	-	-
6	Session#132929	Normal	closed by timeout	none	2020.07.23 18:00	2020-07-23	18:26:01.471142	19:20:25.797562
7	Session#132930	Normal	not inited	none	2020.07.23 18:00	-	-	-
8	Session#132932	Normal	not inited	none	2020.07.23 18:00	-	-	-
9	Session#132934	Normal	closed by remote system	yes	2020.07.23 18:00	2020-07-23	18:01:28.668556	19:33:53.414892
10	Session#132935	Normal	closed by remote system	yes	2020.07.23 18:00	2020-07-23	17:59:31.828711	19:19:54.842049
11	Session#132936	Normal	not inited	none	2020.07.23 18:00	-	-	-
12	Session#132937	Normal	not inited	none	2020.07.23 18:00	-	-	-
13	Session#132938	Normal	not inited	none	2020.07.23 18:00	-	-	-
14	Session#132940	Normal	not inited	none	2020.07.23 18:00	-	-	-
15	Session#132941	Normal	not inited	none	2020.07.23 18:00	-	-	-
16	Session#132942	Normal	closed by proctor	yes	2020.07.23 18:00	2020-07-23	17:58:30.803401	20:11:53.369157
17	Session#132943	Normal	closed by timeout	none	2020.07.23 18:00	-	-	19:55:52.150291
18	Session#132944	Normal	not inited	none	2020.07.23 18:00	-	-	-
19	Session#132945	Normal	not inited	none	2020.07.23 18:00	-	-	-
20	Session#132946	Normal	closed by remote system	yes	2020.07.23 18:00	2020-07-23	18:00:40.798696	19:31:54.500189
21	Session#132949	Normal	not inited	none	2020.07.23 18:00	-	-	-
22	Session#132950	Normal	closed by remote system	yes	2020.07.23 18:00	2020-07-23	17:57:19.637995	19:49:52.169025
23	Session#132953	Normal	closed by remote system	yes	2020.07.23 18:00	2020-07-23	18:01:32.131584	20:03:52.078600
24	Session#132954	Normal	closed by remote system	yes	2020.07.23 18:00	2020-07-23	17:58:19.457599	19:35:53.182122
25	Session#132955	Normal	closed by timeout	none	2020.07.23 18:00	2020-07-23	18:06:07.240139	19:38:19.509054
26	Session#132956	Normal	not inited	none	2020.07.23 18:00	-	-	-
27	Session#132958	Normal	not inited	none	2020.07.23 18:00	-	-	-
28	Session#132959	Normal	closed by remote system	yes	2020.07.23 18:00	2020-07-23	18:49:31.201610	20:09:53.771577

examus

Session report #8905

test@certiport.com

Session

ID	8905
Course	Certiport
Exam	MS Office offline
Start	Dec. 24, 2020, 19:40
End	Dec. 24, 2020, 19:47
Score / Threshold	100 /
Proctoring status	Unknown

Tutor review

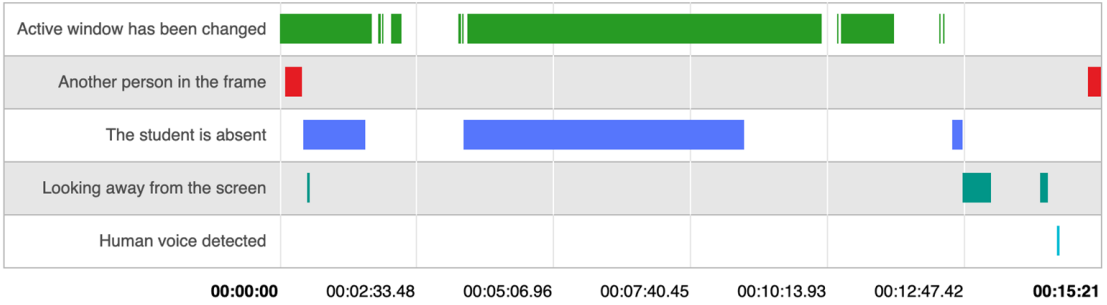
The tutor review is empty

Events

Name	Start	End	Duration
1. Active window has been changed	00:00:00.00	00:00:55.00	00:00:55.00
2. Another person in the frame	00:00:06.08	00:00:26.08	00:00:20.00
3. The student is absent	00:00:26.36	00:01:36.36	00:01:10.00
4. Looking away from the screen	00:00:31.37	00:00:34.37	00:00:03.00
5. Active window has been changed	00:00:37.03	00:01:43.03	00:01:06.00
6. Active window has been changed	00:01:51.30	00:01:54.30	00:00:03.00
7. Active window has been changed	00:01:55.04	00:01:56.04	00:00:01.00
8. Active window has been changed	00:02:04.57	00:02:05.57	00:00:01.00
9. Active window has been changed	00:02:04.75	00:02:05.75	00:00:01.00
10. Active window has been changed	00:02:04.93	00:02:15.93	00:00:11.00

Session score sample

Session report: Timeline ↴ Violations table →



Now it's clear from the chart how often and for how long test taker was violating the rules

We can see that the total violations' duration may outrange the session's duration (because violations can be simultaneous, for example, a student looking aside while using his phone), so the **final score is limited to 100%**

Events

Name	Start	End	Duration
1. Active window has been changed	00:00:00.00	00:00:55.00	00:00:55.00
2. Another person in the frame	00:00:06.08	00:00:26.08	00:00:20.00
3. The student is absent	00:00:26.36	00:01:36.36	00:01:10.00
4. Looking away from the screen	00:00:31.37	00:00:34.37	00:00:03.00
5. Active window has been changed	00:00:37.03	00:01:43.03	00:01:06.00
6. Active window has been changed	00:01:51.30	00:01:54.30	00:00:03.00
7. Active window has been changed	00:01:55.04	00:01:56.04	00:00:01.00
8. Active window has been changed	00:02:04.57	00:02:05.57	00:00:01.00
9. Active window has been changed	00:02:04.75	00:02:05.75	00:00:01.00
10. Active window has been changed	00:02:04.93	00:02:15.93	00:00:11.00
11. Active window has been changed	00:02:05.18	00:02:07.18	00:00:02.00
12. Active window has been changed	00:02:11.38	00:02:12.38	00:00:01.00
13. Active window has been changed	00:02:12.51	00:02:14.51	00:00:02.00
14. Active window has been changed	00:02:15.05	00:02:16.05	00:00:01.00
15. Active window has been changed	00:03:19.91	00:03:20.91	00:00:01.00
16. Active window has been changed	00:03:21.57	00:03:22.57	00:00:01.00
17. Active window has been changed	00:03:25.22	00:03:26.22	00:00:01.00
18. The student is absent	00:03:25.69	00:08:40.69	00:05:15.00
19. Active window has been changed	00:03:30.41	00:03:31.41	00:00:01.00
20. Active window has been changed	00:03:32.59	00:08:56.59	00:05:24.00
21. Active window has been changed	00:08:55.03	00:08:56.03	00:00:01.00
22. Active window has been changed	00:08:56.82	00:10:06.82	00:01:10.00
23. Active window has been changed	00:10:25.28	00:10:26.28	00:00:01.00
24. Active window has been changed	00:10:28.98	00:10:29.98	00:00:01.00
25. Active window has been changed	00:10:30.99	00:10:42.99	00:00:12.00
26. Active window has been changed	00:10:38.27	00:10:39.27	00:00:01.00
27. Active window has been changed	00:10:38.55	00:10:39.55	00:00:01.00
28. Active window has been changed	00:10:39.54	00:11:16.54	00:00:37.00
29. Active window has been changed	00:11:07.56	00:11:08.56	00:00:01.00
30. Active window has been changed	00:11:16.71	00:11:28.71	00:00:12.00
31. Active window has been changed	00:11:25.84	00:11:27.84	00:00:02.00
32. Active window has been changed	00:12:18.50	00:12:19.50	00:00:01.00
33. Active window has been changed	00:12:22.97	00:12:23.97	00:00:01.00
34. Active window has been changed	00:12:23.59	00:12:25.59	00:00:02.00
35. The student is absent	00:12:34.26	00:12:45.26	00:00:11.00
36. Looking away from the screen	00:12:45.74	00:13:17.74	00:00:32.00
37. Looking away from the screen	00:14:11.75	00:14:20.75	00:00:09.00
38. Human voice detected	00:14:30.22	00:14:34.22	00:00:04.00
39. Another person in the frame	00:15:06.33	00:15:20.90	00:00:14.57

Why Examus?

Examus Product Policies

- “try-before-buy” (trial exams and pilot projects)
- everyone deserves a second chance (exam retakes and second tries uncharged)
- scalability works both ways: running projects from 25 to 25k exam-takers
- flexible pricing options
- allocated Customer support team and guidance during exams
- respect and account for culture-sensitive aspects

Examus advantages

Patented AI technology

User-friendly interfaces

Multilingual interface

Protection from passing exam without proctoring

Training and support from Examus team

Deployment to customer's infrastructure (optional)

Functionality for proctoring oral exams

Open API for integration with LMS

Team of experienced proctors (optional)

Supports international acts on data privacy and accessibility of service

General Data Protection Regulation

FERPA
Family Educational Rights & Privacy Act

examus

ADA Compliant

ISO
International Organization for Standardization

Examus Support

	Automated 24/7	Response time - 5-10 min Resolution time - up to 1 hour	Self-service 24/7
Server Support	Monitoring	Examus DevOps Team	Session View in Dashboard
Student Support	Chatbot	Examus Student Support Team OR Partner/Customer Student Support **by** ✉	FAQ and knowledge base for students
Customer/Partner Support		Examus Customer/Partner Support Team **by** ✉ ✈ 🖥	- Knowledge base for Customers - Instructions for users / proctors / admins - Video tutorials and screencasts

Examus numbers

>200,000 exams per month

5 years market experience

More than 100 customers

Students from over 120 countries

FINANCIAL UNIVERSITY
UNDER THE GOVERNMENT OF THE RUSSIAN FEDERATION

Ural Federal University

eCAMPUS UNIVERSITÀ

Linguaskill from Cambridge

SBERBANK

Berkeley UNIVERSITY OF CALIFORNIA

St Petersburg University

MIPT

Ford

OpenEDU

voxy

MISIS National University of Science and Technology

TOP TELECOM

UNIVERSIDAD La Gran Colombia

POLYTECH Peter the Great St.Petersburg Polytechnic University

HIGHER SCHOOL OF ECONOMICS NATIONAL RESEARCH UNIVERSITY

Microsoft Co-Sell Partner

RANEPA

Insurance INSTITUTE OF EAST AFRICA e-learning

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Thanks for the attention

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