虚拟实训考核平台优化表

优化需求

前端题库管理的表格增加一列题库总分

BUG记录

1. 工序管理删除工序报错

```
INFO:      10.92.45.25:60475 - "DELETE /api/v1/question-banks/1/procedures/20
HTTP/1.1" 500 Internal Server Error
ERROR:     Exception in ASGI application
Traceback (most recent call last):
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\engine\base.py", line 1967, in _exec_single_context
    self.dialect.do_execute(
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\engine\default.py", line 951, in do_execute
    cursor.execute(statement, parameters)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\pymysql\cursors.py",
line 153, in execute
    result = self._query(query)
             ^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\pymysql\cursors.py",
line 322, in _query
    conn.query(q)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\pymysql\connections.py", line 575, in query
    self._affected_rows = self._read_query_result(unbuffered=unbuffered)
                          ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\pymysql\connections.py", line 826, in _read_query_result
    result.read()
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\pymysql\connections.py", line 1203, in read
    first_packet = self.connection._read_packet()
                   ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\pymysql\connections.py", line 782, in _read_packet
    packet.raise_for_error()
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\pymysql\protocol.py",
line 219, in raise_for_error
```

```
      err.raise_mysql_exception(self._data)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\pymysql\err.py", line
150, in raise_mysql_exception
    raise errorclass(errno, errval)
pymysql.err.IntegrityError: (1451, 'Cannot delete or update a parent row: a
foreign key constraint fails (`unity_assessment_v1.0`.`answer_logs`,
CONSTRAINT `fk_logs_question` FOREIGN KEY (`question_id`) REFERENCES
`questions` (`id`))')

The above exception was the direct cause of the following exception:

Traceback (most recent call last):
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\uvicorn\protocols\http\httptools_impl.py", line 409, in run_asgi
    result = await app(  # type: ignore[func-returns-value]
             ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\uvicorn\middleware\proxy_headers.py", line 60, in __call__
    return await self.app(scope, receive, send)
           ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\fastapi\applications.py", line 1134, in __call__
    await super().__call__(scope, receive, send)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\starlette\applications.py", line 113, in __call__
    await self.middleware_stack(scope, receive, send)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\starlette\middleware\errors.py", line 186, in __call__
    raise exc
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\starlette\middleware\errors.py", line 164, in __call__
    await self.app(scope, receive, _send)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\starlette\middleware\cors.py", line 93, in __call__
    await self.simple_response(scope, receive, send, request_headers=headers)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\starlette\middleware\cors.py", line 144, in simple_response
    await self.app(scope, receive, send)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\starlette\middleware\exceptions.py", line 63, in __call__
    await wrap_app_handling_exceptions(self.app, conn)(scope, receive, send)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\starlette\_exception_handler.py", line 53, in wrapped_app
    raise exc
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\starlette\_exception_handler.py", line 42, in wrapped_app
    await app(scope, receive, sender)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\fastapi\middleware\asyncexitstack.py", line 18, in __call__
    await self.app(scope, receive, send)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\starlette\routing.py",
line 716, in __call__
    await self.middleware_stack(scope, receive, send)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\starlette\routing.py",
line 736, in app
    await route.handle(scope, receive, send)
```

```
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\starlette\routing.py",
line 290, in handle
    await self.app(scope, receive, send)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\fastapi\routing.py",
line 125, in app
    await wrap_app_handling_exceptions(app, request)(scope, receive, send)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\starlette\_exception_handler.py", line 53, in wrapped_app
    raise exc
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\starlette\_exception_handler.py", line 42, in wrapped_app
    await app(scope, receive, sender)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\fastapi\routing.py",
line 111, in app
    response = await f(request)
               ^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\fastapi\routing.py",
line 391, in app
    raw_response = await run_endpoint_function(
                   ^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\fastapi\routing.py",
line 292, in run_endpoint_function
    return await run_in_threadpool(dependant.call, **values)
           ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\starlette\concurrency.py", line 38, in run_in_threadpool
    return await anyio.to_thread.run_sync(func)
           ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\anyio\to_thread.py",
line 56, in run_sync
    return await get_async_backend().run_sync_in_worker_thread(
           ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\anyio\_backends\_asyncio.py", line 2485, in
run_sync_in_worker_thread
    return await future
           ^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\anyio\_backends\_asyncio.py", line 976, in run
    result = context.run(func, *args)
             ^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\app\api\endpoints\procedures.py", line 90, in
delete_procedure
    crud_procedure.remove(db=db, id=procedure_id)
  File "F:\PythonProjects\xnfz\app\crud\base.py", line 66, in remove
    db.commit()
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\orm\session.py", line 2030, in commit
    trans.commit(_to_root=True)
  File "<string>", line 2, in commit
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\orm\state_changes.py", line 137, in _go
    ret_value = fn(self, *arg, **kw)
                ^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\orm\session.py", line 1311, in commit
```
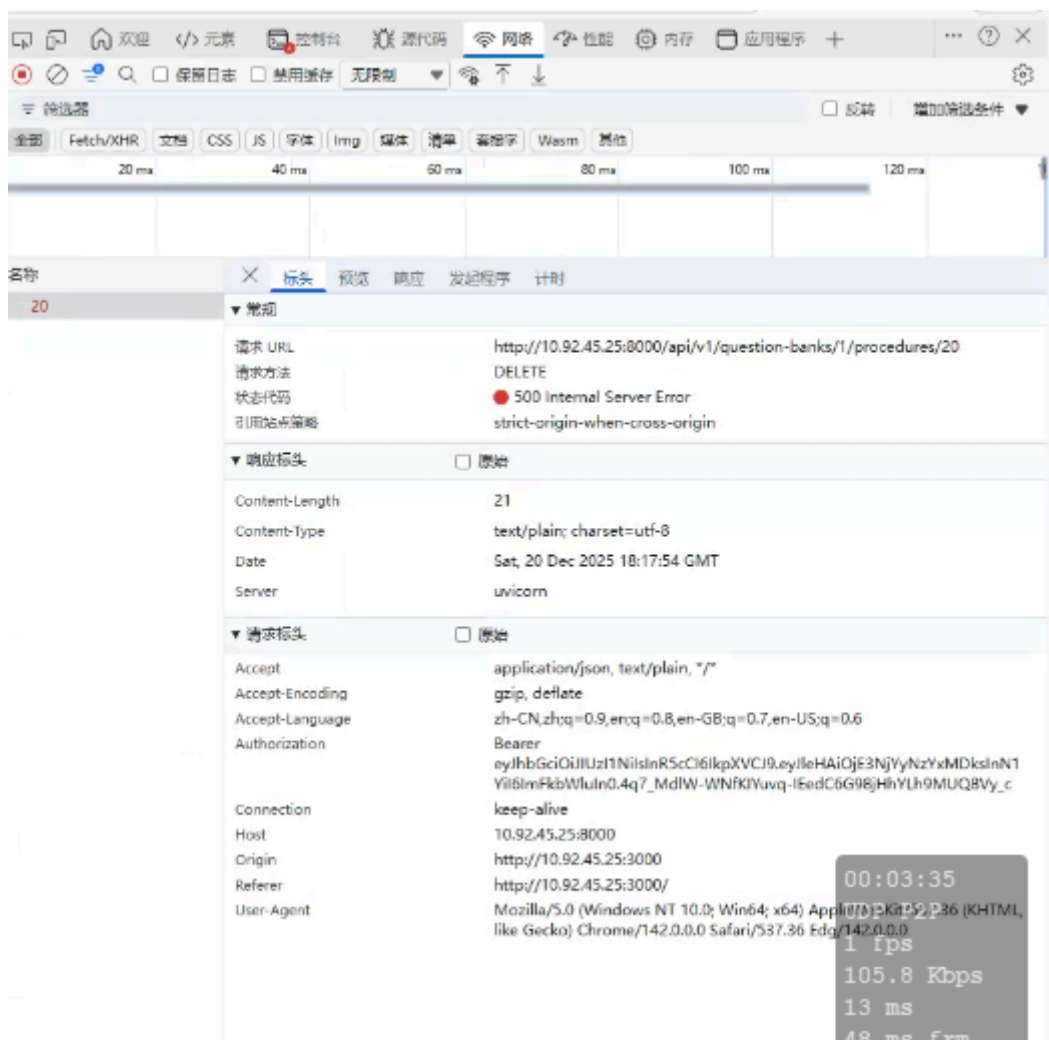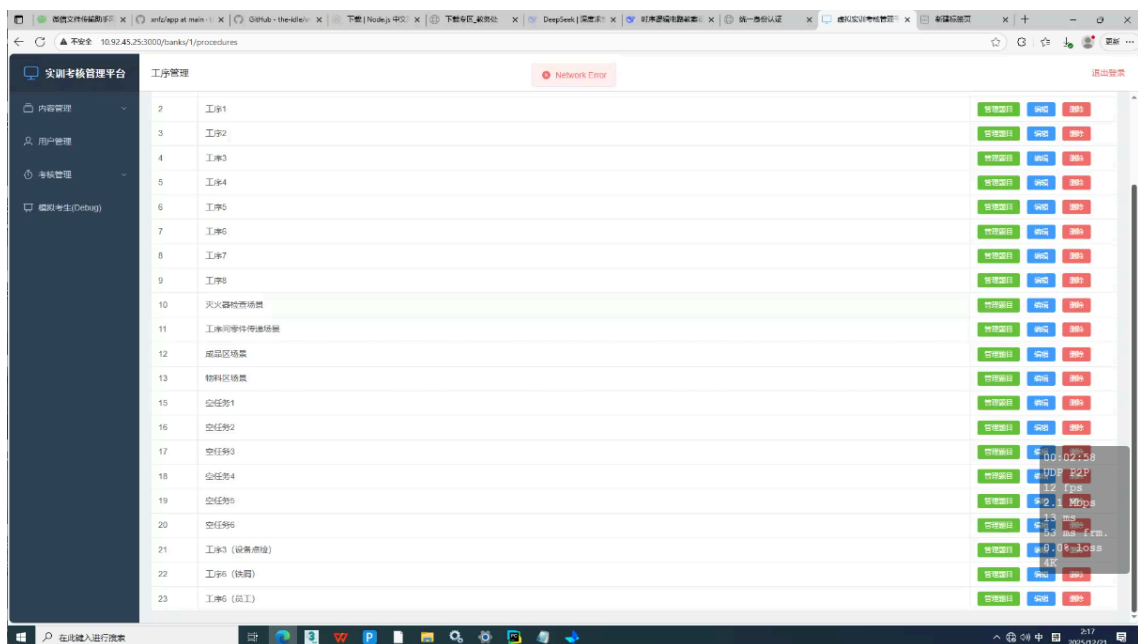
```
        self._prepare_impl()
  File "<string>", line 2, in _prepare_impl
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\orm\state_changes.py", line 137, in _go
    ret_value = fn(self, *arg, **kw)
                ^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\orm\session.py", line 1286, in _prepare_impl
    self.session.flush()
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\orm\session.py", line 4331, in flush
    self._flush(objects)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\orm\session.py", line 4466, in _flush
    with util.safe_reraise():
         ^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\util\langhelpers.py", line 224, in __exit__
    raise exc_value.with_traceback(exc_tb)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\orm\session.py", line 4427, in _flush
    flush_context.execute()
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\orm\unitofwork.py", line 466, in execute
    rec.execute(self)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\orm\unitofwork.py", line 679, in execute
    util.preloaded.orm_persistence.delete_obj(
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\orm\persistence.py", line 193, in delete_obj
    _emit_delete_statements(
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\orm\persistence.py", line 1471, in
_emit_delete_statements
    c = connection.execute(
        ^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\engine\base.py", line 1419, in execute
    return meth(
           ^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\sql\elements.py", line 526, in _execute_on_connection
    return connection._execute_clauseelement(
           ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\engine\base.py", line 1641, in _execute_clauseelement
    ret = self._execute_context(
          ^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\engine\base.py", line 1846, in _execute_context
    return self._exec_single_context(
           ^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\engine\base.py", line 1986, in _exec_single_context
    self._handle_dbapi_exception(
```

```
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\engine\base.py", line 2355, in _handle_dbapi_exception
    raise sqlalchemy_exception.with_traceback(exc_info[2]) from e
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\engine\base.py", line 1967, in _exec_single_context
    self.dialect.do_execute(
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\sqlalchemy\engine\default.py", line 951, in do_execute
    cursor.execute(statement, parameters)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\pymysql\cursors.py",
line 153, in execute
    result = self._query(query)
             ^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\pymysql\cursors.py",
line 322, in _query
    conn.query(q)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\pymysql\connections.py", line 575, in query
    self._affected_rows = self._read_query_result(unbuffered=unbuffered)
                          ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\pymysql\connections.py", line 826, in _read_query_result
    result.read()
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\pymysql\connections.py", line 1203, in read
    first_packet = self.connection._read_packet()
                   ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "F:\PythonProjects\xnfz\.venv\Lib\site-
packages\pymysql\connections.py", line 782, in _read_packet
    packet.raise_for_error()
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\pymysql\protocol.py",
line 219, in raise_for_error
    err.raise_mysql_exception(self._data)
  File "F:\PythonProjects\xnfz\.venv\Lib\site-packages\pymysql\err.py", line
150, in raise_mysql_exception
    raise errorclass(errno, errval)
sqlalchemy.exc.IntegrityError: (pymysql.err.IntegrityError) (1451, 'Cannot
delete or update a parent row: a foreign key constraint fails
(`unity_assessment_v1.0`.`answer_logs`, CONSTRAINT `fk_logs_question` FOREIGN
KEY (`question_id`) REFERENCES `questions` (`id`))')
[SQL: DELETE FROM questions WHERE questions.id = %(id)s]
[parameters: {'id': 45}]
```

实训考核管理平台　　　工序管理　　　　　　　　　　Network Error　　　　　　退出登录

内容管理

用户管理

考核管理

模拟考生(Debug)

2	工序1	管理题目 编辑 删除
3	工序2	管理题目 编辑 删除
4	工序3	管理题目 编辑 删除
5	工序4	管理题目 编辑 删除
6	工序5	管理题目 编辑 删除
7	工序6	管理题目 编辑 删除
8	工序7	管理题目 编辑 删除
9	工序8	管理题目 编辑 删除
10	灭火器检查场景	管理题目 编辑 删除
11	工序间零件传递场景	管理题目 编辑 删除
12	成品区场景	管理题目 编辑 删除
13	物料区场景	管理题目 编辑 删除
15	空任务1	管理题目 编辑 删除
16	空任务2	管理题目 编辑 删除
17	空任务3	管理题目 编辑 删除
18	空任务4	管理题目 编辑 删除
19	空任务5	管理题目 编辑 删除
20	空任务6	管理题目 编辑 删除
21	工序3（设备点检）	管理题目 编辑 删除
22	工序6（铁屑）	管理题目 编辑 删除
23	工序6（员工）	管理题目 编辑 删除

▼ 常规

请求 URL　　　http://10.92.45.25:8000/api/v1/question-banks/1/procedures/20
请求方法　　　DELETE
状态代码　　　🔴 500 Internal Server Error
引用站点策略　strict-origin-when-cross-origin

▼ 响应标头　　　□ 原始

Content-Length　21
Content-Type　text/plain; charset=utf-8
Date　Sat, 20 Dec 2025 18:17:54 GMT
Server　uvicorn

▼ 请求标头　　　□ 原始

Accept　application/json, text/plain, */*
Accept-Encoding　gzip, deflate
Accept-Language　zh-CN,zh;q=0.9,en;q=0.8,en-GB;q=0.7,en-US;q=0.6
Authorization　Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJleHAiOjE3NjYyNzYxMDksInN1YiI6ImFkbWluIn0.4q7_MdlW-WNfKJYuvq-IEedC6G98jHhYLh9MUQ8Vy_c
Connection　keep-alive
Host　10.92.45.25:8000
Origin　http://10.92.45.25:3000
Referer　http://10.92.45.25:3000/
User-Agent　Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/142.0.0.0 Safari/537.36 Edg/142.0.0.0

2. 成绩记录显示不完全，只显示了99条数据，数据库里面已经有1000条数据了

实训考核管理平台　成绩记录　退出登录

内容管理
用户管理
考核管理
　场次发布
　成绩记录
模拟考生(Debug)

91	500060		进行中	-	查看详情
92	500061		进行中	-	查看详情
93	500062		进行中	-	查看详情
94	500063		进行中	-	查看详情
95	500064		进行中	-	查看详情
96	500065		进行中	-	查看详情
97	500066		进行中	-	查看详情
98	500067		进行中	-	查看详情
99	500069		进行中	-	查看详情
100	500068		进行中	-	查看详情
101	500070		进行中	-	查看详情
102	500071		进行中	-	查看详情
103	500072		进行中	-	查看详情
104	500073		进行中	-	查看详情
105	500074		进行中	-	查看详情
106	500075		进行中	-	查看详情
107	500076		进行中	-	查看详情
108	500077		进行中	-	查看详情
109	500078		进行中	-	查看详情
110	500079		进行中	-	查看详情
111	500080		进行中	-	查看详情

对象　assessment_results @unity_assessm...

表配置文件　开始事务　单元格编辑器　筛选 & 排序　列　数据分析　工具

id #int(11)	assessment_id #int(11)	examinee_id #int(11)	total_score #int(11)	start_time datetime	end_time datetime
974	7	973	(Null)	2025-12-20 22:05:23	(Null)
975	7	972	(Null)	2025-12-20 22:05:23	(Null)
976	7	974	(Null)	2025-12-20 22:05:23	(Null)
977	7	976	(Null)	2025-12-20 22:05:23	(Null)
978	7	975	(Null)	2025-12-20 22:05:23	(Null)
979	7	977	(Null)	2025-12-20 22:05:23	(Null)
980	7	978	(Null)	2025-12-20 22:05:23	(Null)
981	7	979	(Null)	2025-12-20 22:05:23	(Null)
982	7	980	(Null)	2025-12-20 22:05:23	(Null)
983	7	982	(Null)	2025-12-20 22:05:23	(Null)
984	7	983	(Null)	2025-12-20 22:05:23	(Null)
985	7	981	(Null)	2025-12-20 22:05:23	(Null)
986	7	985	(Null)	2025-12-20 22:05:23	(Null)
987	7	984	(Null)	2025-12-20 22:05:23	(Null)
988	7	986	(Null)	2025-12-20 22:05:23	(Null)
989	7	988	(Null)	2025-12-20 22:05:24	(Null)
990	7	987	(Null)	2025-12-20 22:05:24	(Null)
991	7	989	(Null)	2025-12-20 22:05:24	(Null)
992	7	990	(Null)	2025-12-20 22:05:24	(Null)
993	7	991	(Null)	2025-12-20 22:05:24	(Null)
994	7	992	(Null)	2025-12-20 22:05:24	(Null)
995	7	993	(Null)	2025-12-20 22:05:24	(Null)
996	7	994	(Null)	2025-12-20 22:05:24	(Null)
997	7	995	(Null)	2025-12-20 22:05:24	(Null)
998	7	996	(Null)	2025-12-20 22:05:24	(Null)
999	7	997	(Null)	2025-12-20 22:05:24	(Null)
1000	7	998	(Null)	2025-12-20 22:05:24	2025-12-20 22:26:18

接口压测报告

地址：/api/v1/client/platforms/1/assessments/upcoming

线程数量为300，并发数量为5时，并发正常

Label	#样本	平均值	中位数	90%百分位	95%百分位	99%百分位	最小值	最大值	异常 %	吞吐量	接收 KB/sec	发送 KB/sec
HTTP请求	1500	3	3	6	6	8	2	9	0.00%	294.1/sec	99.95	45.38
总体	1500	3	3	6	6	8	2	9	0.00%	294.1/sec	99.95	45.38

线程数量为400，并发数量为4时，并发概率异常

Label	#样本	平均值	中位数	90%百分位	95%百分位	99%百分位	最小值	最大值	异常 %	吞吐量	接收 KB/sec	发送 KB/sec
HTTP请求	1601	2423	90	208	30051	59997	1	60049	5.18%	24.9/sec	9.35	3.77
总体	1601	2423	90	208	30051	59997	1	60049	5.18%	24.9/sec	9.35	3.77

故障详情:

错误信息核心：

```
sqlalchemy.exc.TimeoutError:
QueuePool limit of size 5 overflow 10 reached, connection timed out, timeout
30.00
```

地址：/api/v1/client/assessments/{assessments_result_id}/session

线程数量为100，并发数量为1时，并发概率异常

Label	#样本	平均值	中位数	90%百分位	95%百分位	99%百分位	最小值	最大值	异常 %	吞吐量	接收 KB/sec	发送 KB/sec
开始(继续)...	100	22	16	18	66	126	14	188	1.00%	20.1/sec	492.64	4.76
总体	100	22	16	18	66	126	14	188	1.00%	20.1/sec	492.64	4.76

线程数量为300，并发数量为3时，并发异常

Label	#样本	平均值	中位数	90%百分位	95%百分位	99%百分位	最小值	最大值	异常 %	吞吐量	接收 KB/sec	发送 KB/sec
开始(继续)...	900	51551	16446	162788	163551	166188	0	166637	89.44%	5.4/sec	23.87	0.38
总体	900	51551	16446	162788	163551	166188	0	166637	89.44%	5.4/sec	23.87	0.38

线程属性	
线程数：	300
Ramp-Up时间（秒）：	5
循环次数 ☐ 永远	3

问题目前有两种：

1. 有多个线程同时并发传入了相同的examinee_identifier值，导致服务器报错

```
sqlalchemy.exc.IntegrityError: (pymysql.err.IntegrityError) (1062, "Duplicate
entry 'user318117' for key 'ix_examinees_identifier'")
```

2. 数据库连接池资源不足

```
sqlalchemy.exc.TimeoutError:
QueuePool limit of size 5 overflow 10 reached, connection timed out, timeout
30.00
```

地址：所有图片资源访问

线程数量为400，并发数量为1时，并发正常

线程数量为500，并发数量为1时，并发异常