

# ЛАБОРАТОРНАЯ РАБОТА №3

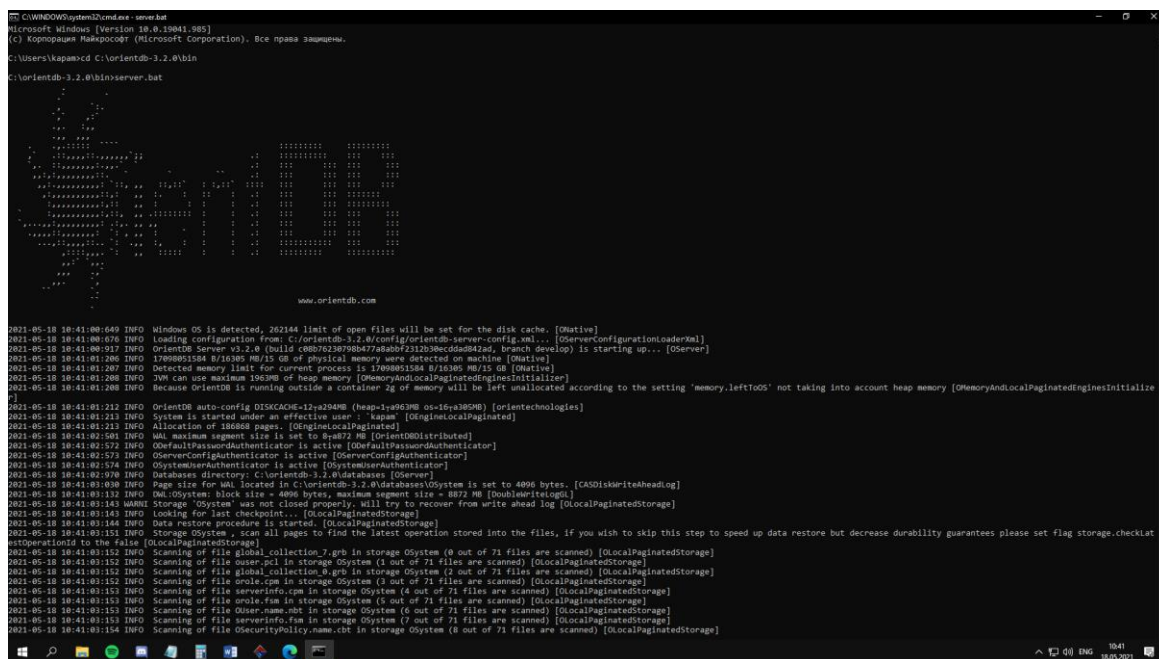
## OrientDB

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Цель работы: Изучить основы СУБД OrientDB

Ход работы:

1) Включаем сервер на своем ПК (рисунок 1)



```
C:\Users\Karpov>cd C:\orientdb-3.2.0\bin
C:\orientdb-3.2.0\bin>server.bat

...
www.orientdb.com

2021-05-18 18:41:00:649 INFO Windows OS is detected, 262144 limit of open files will be set for the disk cache. [Native]
2021-05-18 18:41:00:676 INFO Loading configuration from: C:\orientdb-3.2.0\config\orientdb-server-config.xml... [ServerConfigurationLoader]
2021-05-18 18:41:00:917 INFO OrientDB Server v3.2.0 (build c8b07238f9b8a7f8ab0b2313b3ec6cda8242d, branch develop) is starting up... [Server]
2021-05-18 18:41:01:206 INFO 17898905184 B/16385 MB/15 GB of physical memory were detected on machine [Native]
2021-05-18 18:41:01:207 INFO Detected memory limit for current process is 17898905184 B/16385 MB/15 GB [Native]
2021-05-18 18:41:01:208 INFO JVM can use maximum 1963MB of heap memory [MemoryAndLocalPaginatedEnginesInitializer]
2021-05-18 18:41:01:208 INFO Because OrientDB is running outside a container 2g of memory will be left unallocated according to the setting 'memory.leftToOS' not taking into account heap memory [MemoryAndLocalPaginatedEnginesInitializer]
2021-05-18 18:41:01:212 INFO OrientDB auto-config OISKACHE-12x2048MB (heap-1963MB os-16385MB) [orienttechnologies]
2021-05-18 18:41:01:213 INFO System is started under an effective user: 'Karpov' [OrientLocalPaginated]
2021-05-18 18:41:01:213 INFO Allocation of 186888 pages. [OrientLocalPaginated]
2021-05-18 18:41:02:501 INFO WAL maximum segment size is set to 8x872 MB [OrientDistributed]
2021-05-18 18:41:02:572 INFO OAuth2PasswordAuthenticator is active [OAuth2PasswordAuthenticator]
2021-05-18 18:41:02:573 INFO OAuth2ConfigAuthenticator is active [OAuth2ConfigAuthenticator]
2021-05-18 18:41:02:574 INFO OAuth2TokenAuthenticator is active [OAuth2TokenAuthenticator]
2021-05-18 18:41:02:574 INFO Databases directory: C:\orientdb-3.2.0\databases [Server]
2021-05-18 18:41:03:038 INFO Page size for WAL located in C:\orientdb-3.2.0\databases\OSystem is set to 4096 bytes. [CASDiskWriteAheadLog]
2021-05-18 18:41:03:132 INFO DB OSystem block size = 4096 bytes, maximum segment size = 8872 MB [DoubleWriteLog]
2021-05-18 18:41:03:143 WARNING Storage 'OSystem' was not closed properly. Will try to recover from write ahead log [LocalPaginatedStorage]
2021-05-18 18:41:03:145 INFO Looking for last checkpoint... [LocalPaginatedStorage]
2021-05-18 18:41:03:144 INFO Data restore procedure is started. [LocalPaginatedStorage]
2021-05-18 18:41:03:151 INFO Storage OSystem , scan all pages to find the latest operation stored into the files, if you wish to skip this step to speed up data restore but decrease durability guarantees please set flag storage.checklat
estSuspensionToFalse to false [LocalPaginatedStorage]
2021-05-18 18:41:03:152 INFO Scanning of file global.collection.7.grb in storage OSystem (8 out of 71 files are scanned) [LocalPaginatedStorage]
2021-05-18 18:41:03:152 INFO Scanning of file user.pcl in storage OSystem (1 out of 71 files are scanned) [LocalPaginatedStorage]
2021-05-18 18:41:03:152 INFO Scanning of file global.collection.8.grb in storage OSystem (2 out of 71 files are scanned) [LocalPaginatedStorage]
2021-05-18 18:41:03:152 INFO Scanning of file orole.cpm in storage OSystem (3 out of 71 files are scanned) [LocalPaginatedStorage]
2021-05-18 18:41:03:152 INFO Scanning of file serverinfo.cpm in storage OSystem (4 out of 71 files are scanned) [LocalPaginatedStorage]
2021-05-18 18:41:03:153 INFO Scanning of file orole.rsm in storage OSystem (5 out of 71 files are scanned) [LocalPaginatedStorage]
2021-05-18 18:41:03:153 INFO Scanning of file User.name not in storage OSystem (6 out of 71 files are scanned) [LocalPaginatedStorage]
2021-05-18 18:41:03:153 INFO Scanning of file serverinfo.rsm in storage OSystem (7 out of 71 files are scanned) [LocalPaginatedStorage]
2021-05-18 18:41:03:154 INFO Scanning of file OSecurityPolicy.name.cbt in storage OSystem (8 out of 71 files are scanned) [LocalPaginatedStorage]
```

Рисунок 1 – Включение сервера

2) Переходим на сайт localhost:2480 и создаем свою базу данных (рисунок 2)

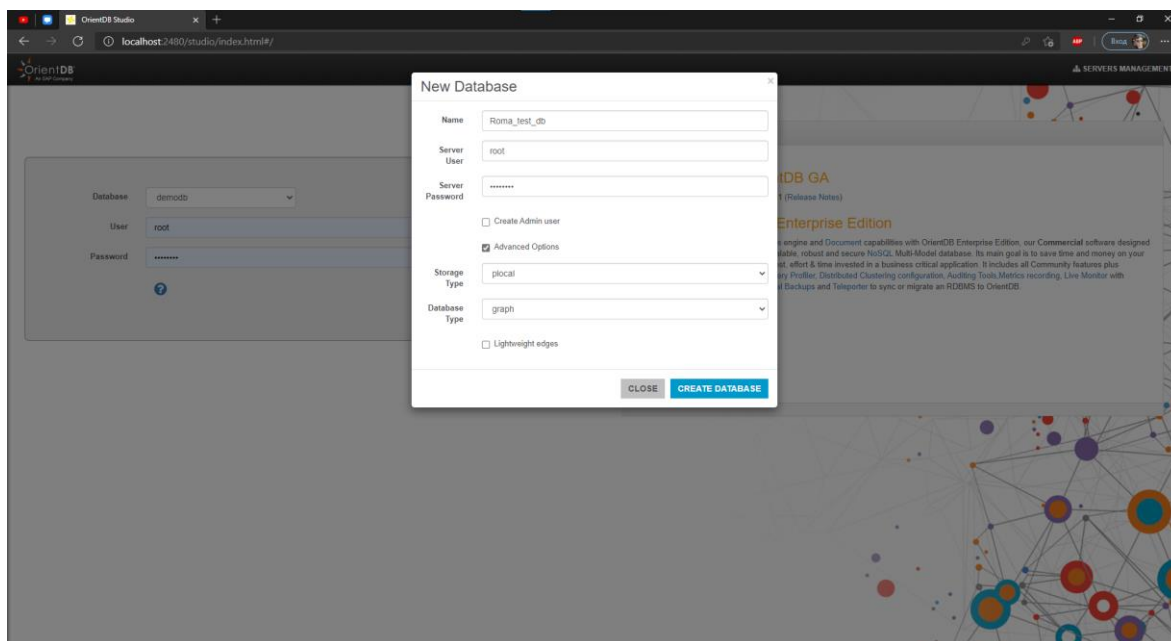


Рисунок 2 – Создание БД

### 3) Создаем 2 класса publisher и article (рисунок 3)

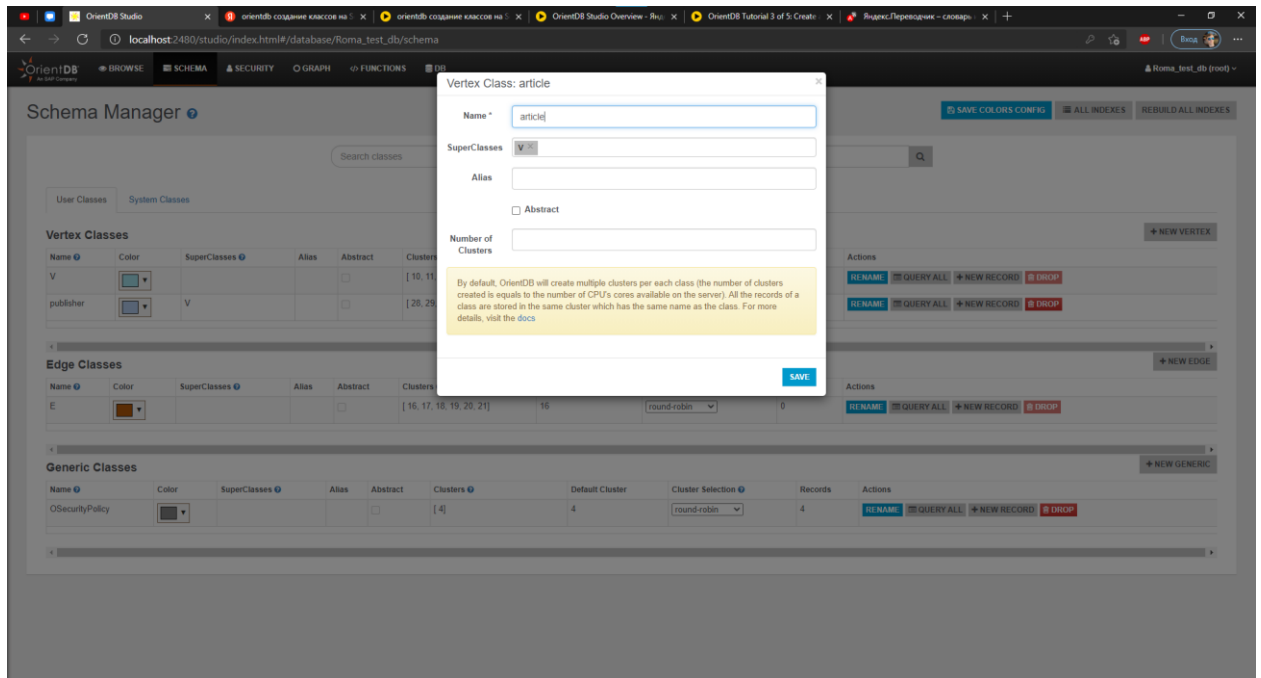


Рисунок 3 – Создание классов

### 4) Создаем свойства для класса publisher (рисунок 4) и для класса article (рисунок 5)

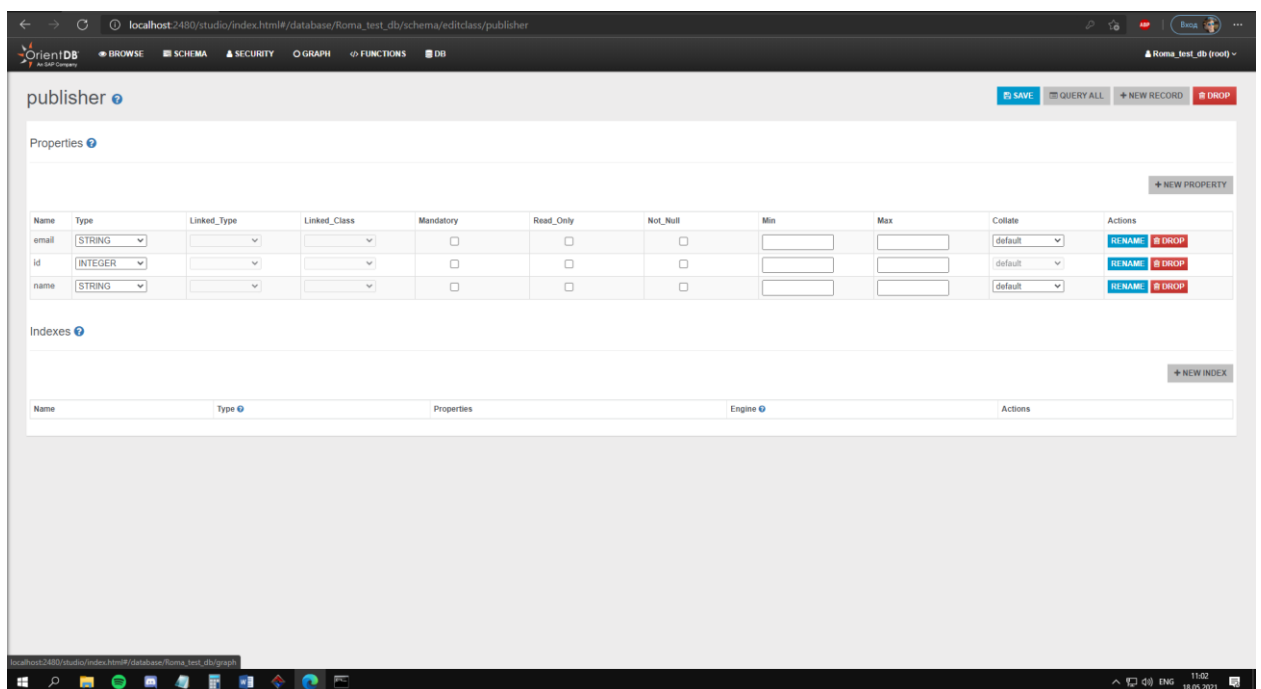


Рисунок 4 – Создание свойств для класса publisher

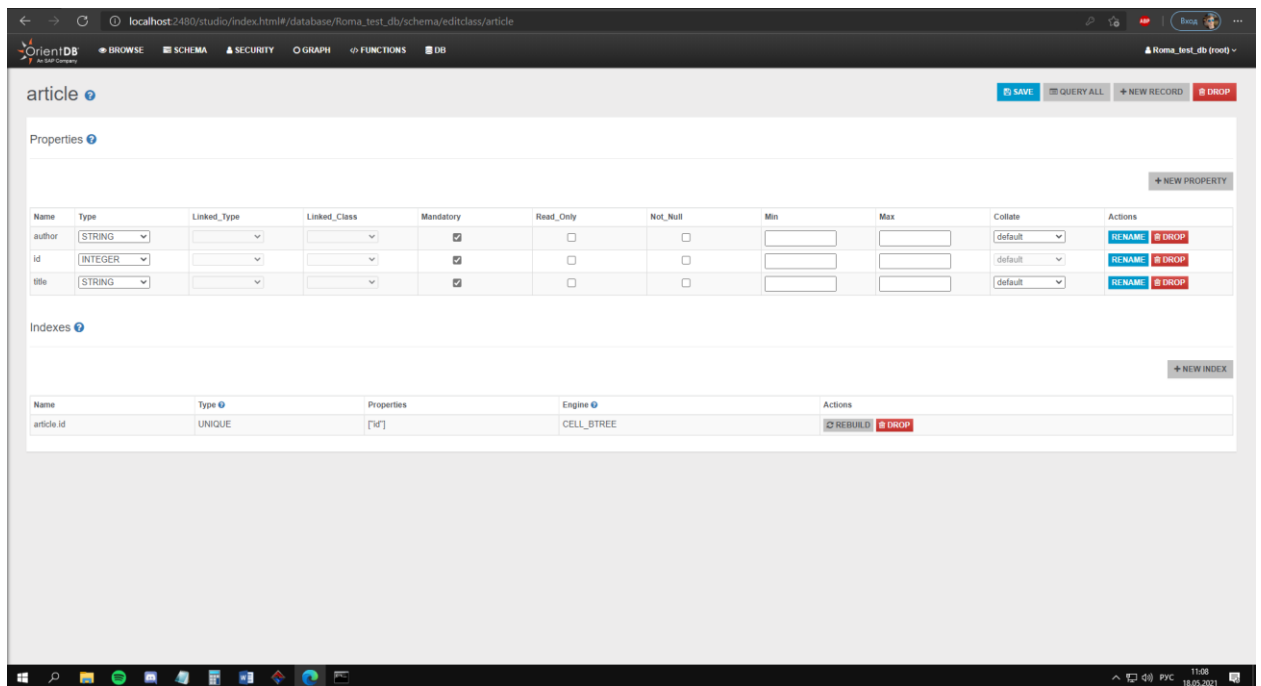


Рисунок 5 – Создание свойств для класса article

5) Вносим записи в класс publisher (рисунок 6) и в класс article (рисунок 7)

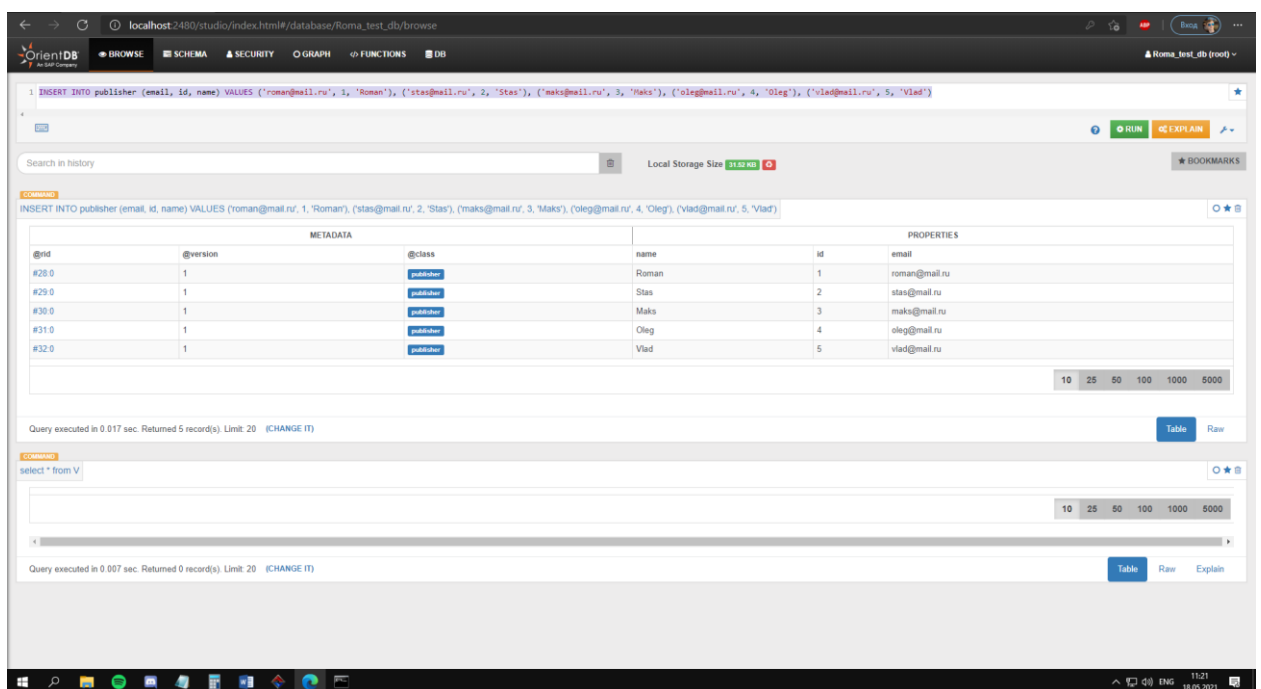


Рисунок 6 – Внесение записей в класс publisher

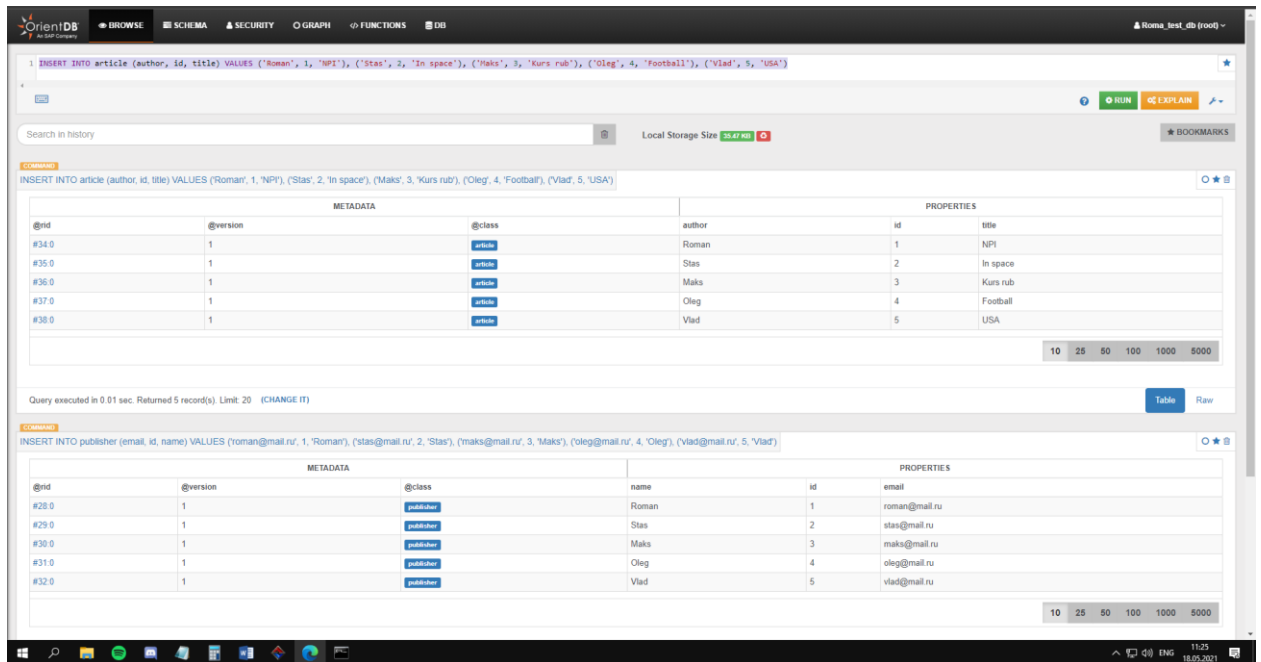


Рисунок 7 – Внесение записей в класс article

6) Создадим связь между 2 записями по их @rid (рисунок 8)

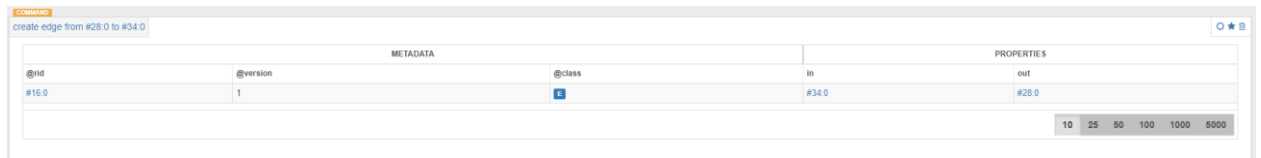


Рисунок 8 – Создание связи

7) Заходим в запись publisher (рисунок 9), переходим по ссылке справа и попадаем в связанную запись article (рисунок 10)

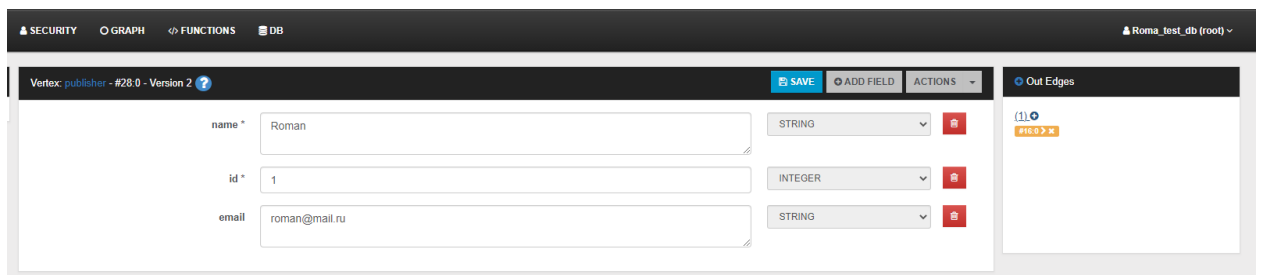


Рисунок 9 – Запись в publisher

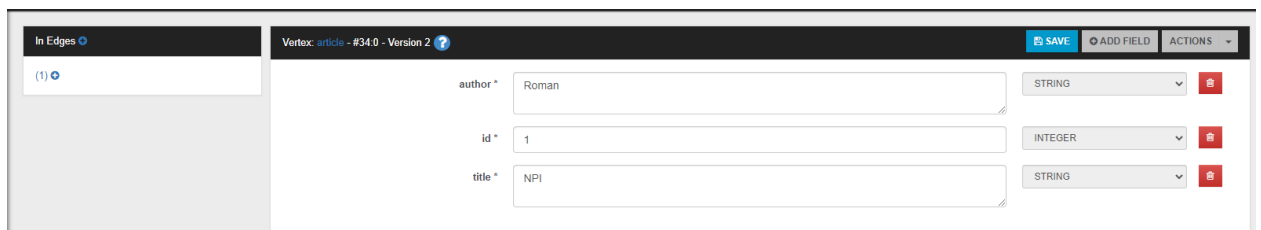


Рисунок 10 – Запись в article

8) Выводим всю информацию о классе V, содержащий классы publisher и article (рисунок 11)

Search in history Local Storage Size 25.56 MB

select \* from V

METADATA			PROPERTIES						
@rid	@version	@class	name	id	email	author	title	IN	OUT
#28.0	2	publisher	Roman	1	roman@mail.ru				#15.0
#29.0	1	publisher	Stas	2	stas@mail.ru				
#30.0	1	publisher	Maks	3	maks@mail.ru				
#31.0	1	publisher	Oleg	4	oleg@mail.ru				
#32.0	1	publisher	Vlad	5	vlad@mail.ru				
#34.0	2	article		1		Roman	NPI	#16.0	
#35.0	1	article		2		Stas	In space		
#36.0	1	article		3		Maks	Kurs rub		
#37.0	1	article		4		Oleg	Football		
#38.0	1	article		5		Vlad	USA		

Query executed in 0.18 sec. Returned 10 record(s). Limit: 20 (CHANGE IT)

create edge from #28.0 to #34.0

METADATA			PROPERTIES	
@rid	@version	@class	in	out
#16.0	1	E	#34.0	#28.0

Рисунок 11 – Вывод информации о классе V

Вывод: Изучил основы СУБД OrientDB