

**Министерство науки и высшего образования Российской Федерации**  
федеральное государственное автономное образовательное учреждение высшего  
образования  
**«НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ ИТМО»**

**Отчет**

по лабораторной работе № 3 «Создание таблиц базы данных PostgreSQL. Заполнение  
таблиц рабочими данными»

по дисциплине «**Проектирование и реализация баз данных**»

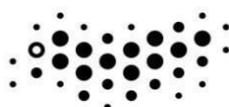
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**УНИВЕРСИТЕТ ИТМО**

Санкт-Петербург, 2021

**Цель работы:** овладеть практическими навыками создания таблиц базы данных PostgreSQL 1X, заполнения их рабочими данными, резервного копирования и восстановления БД.

**Практическое задание:**

1. Создать базу данных с использованием pgAdmin 4 (согласно индивидуальному заданию).
2. Создать схему в составе базы данных.
3. Создать таблицы базы данных.
4. Установить ограничения на данные: *Primary Key, Unique, Check, Foreign Key*.
5. Заполнить таблицы БД рабочими данными.
6. Создать резервную копию БД.

Указание:

Создать две резервные копии:

– с расширением *CUSTOM* для восстановления БД;

– с расширением *PLAIN* для листинга (в отчете);

– при создании резервных копий БД настроить параметры *Dump options* для

*Type of objects* и *Queries* .

7. Восстановить БД.

**Вариант 7. БД «Курсы»**

Описание предметной области: Подразделение занимается организацией внебюджетного образования. Имеется несколько типов краткосрочных курсов, предназначенных для определенных специальностей, связанных с программным обеспечением ИТ. Каждый тип курсов имеет определенную длительность и свой перечень изучаемых дисциплин. На каждую программу может быть набрано несколько групп. По каждой дисциплине могут проводиться лекционные и лабораторные занятия. Подразделение обеспечивает следующие ресурсы: учебные классы, лекционные аудитории и преподавателей. Необходимо составить расписание занятий.

БД должна содержать следующий минимальный набор сведений: Фамилия слушателя. Имя слушателя. Паспортные данные. Контакты. Код программы. Программа. Тип программы. Объем часов. Номер группы. Количество человек в группе. Дата начала обучения. Дата окончания обучения. Название дисциплины. Количество часов. Дата занятий. Номер пары. Номер аудитории. Тип аудитории. Адрес площадки. Вид занятий (лекционные или практические). Фамилия преподавателя. Имя и отчество преподавателя. Должность преподавателя.

Название БД - courses



```

33. SET default_table_access_method = heap;
34.
35. --
36. -- TOC entry 213 (class 1259 OID 16463)
37. -- Name: building; Type: TABLE; Schema: public; Owner: postgres
38. --
39.
40. -- Создаём таблицу building
41. CREATE TABLE public.building (
42.     id_building INTEGER NOT NULL,
43.     address CHARACTER varying(50) NOT NULL
44. );
45.
46.
47. -- Назначаем владельца таблицы
48. ALTER TABLE public.building OWNER TO postgres;
49.
50. --
51. -- TOC entry 212 (class 1259 OID 16461)
52. -- Name: building_id_building_seq; Type: SEQUENCE; Schema: public; Owner:
    postgres
53. --
54.
55. -- Добавляем AUTO_INCREMENT к первичному ключу таблицы
56. ALTER TABLE public.building ALTER COLUMN id_building ADD GENERATED ALWAYS AS
    IDENTITY (
57.     SEQUENCE NAME public.building_id_building_seq
58.     START WITH 1
59.     INCREMENT BY 1
60.     NO MINVALUE
61.     NO MAXVALUE
62.     CACHE 1
63. );
64.
65.
66. --
67. -- TOC entry 215 (class 1259 OID 16470)
68. -- Name: classroom; Type: TABLE; Schema: public; Owner: postgres
69. --
70.
71. -- Аналогично создаём другие таблицы
72. CREATE TABLE public.classroom (
73.     id_classroom INTEGER NOT NULL,
74.     id_building INTEGER NOT NULL,
75.     number INTEGER NOT NULL,
76.     TYPE CHARACTER varying(30) NOT NULL
77. );
78.
79.
80. ALTER TABLE public.classroom OWNER TO postgres;
81.
82. --
83. -- TOC entry 214 (class 1259 OID 16468)
84. -- Name: classroom_id_classroom_seq; Type: SEQUENCE; Schema: public; Owner:
    postgres
85. --
86.
87. ALTER TABLE public.classroom ALTER COLUMN id_classroom ADD GENERATED ALWAYS AS
    IDENTITY (
88.     SEQUENCE NAME public.classroom_id_classroom_seq
89.     START WITH 1
90.     INCREMENT BY 1
91.     NO MINVALUE
92.     NO MAXVALUE
93.     CACHE 1
94. );
95.
96.
97. --
98. -- TOC entry 207 (class 1259 OID 16432)
99. -- Name: course; Type: TABLE; Schema: public; Owner: postgres

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100.  --
101.
102.  CREATE TABLE public.course (
103.      id_course INTEGER NOT NULL,
104.      id_program INTEGER NOT NULL,
105.      start_date DATE NOT NULL,
106.      graduation_date DATE NOT NULL
107.  );
108.
109.
110.  ALTER TABLE public.course OWNER TO postgres;
111.
112.  --
113.  -- TOC entry 206 (class 1259 OID 16430)
114.  -- Name: course_id_course_seq; Type: SEQUENCE; Schema: public; Owner:
postgres
115.  --
116.
117.  ALTER TABLE public.course ALTER COLUMN id_course ADD GENERATED ALWAYS AS
IDENTITY (
118.      SEQUENCE NAME public.course_id_course_seq
119.      START WITH 1
120.      INCREMENT BY 1
121.      NO MINVALUE
122.      NO MAXVALUE
123.      CACHE 1
124.  );
125.
126.
127.  --
128.  -- TOC entry 200 (class 1259 OID 16397)
129.  -- Name: course_listener; Type: TABLE; Schema: public; Owner: postgres
130.  --
131.
132.  CREATE TABLE public.course_listener (
133.      id_listener INTEGER NOT NULL,
134.      surname CHARACTER varying(30) NOT NULL,
135.      NAME CHARACTER varying(30) NOT NULL,
136.      passport INTEGER NOT NULL,
137.      contact CHARACTER varying(50)
138.  );
139.
140.
141.  ALTER TABLE public.course_listener OWNER TO postgres;
142.
143.  --
144.  -- TOC entry 201 (class 1259 OID 16402)
145.  -- Name: course_listener_id_listener_seq; Type: SEQUENCE; Schema: public;
Owner: postgres
146.  --
147.
148.  ALTER TABLE public.course_listener ALTER COLUMN id_listener ADD GENERATED
ALWAYS AS IDENTITY (
149.      SEQUENCE NAME public.course_listener_id_listener_seq
150.      START WITH 1
151.      INCREMENT BY 1
152.      NO MINVALUE
153.      NO MAXVALUE
154.      CACHE 1
155.  );
156.
157.
158.  --
159.  -- TOC entry 211 (class 1259 OID 16456)
160.  -- Name: discipline; Type: TABLE; Schema: public; Owner: postgres
161.  --
162.
163.  CREATE TABLE public.discipline (
164.      id_discipline INTEGER NOT NULL,
165.      NAME CHARACTER varying(50) NOT NULL,
166.      hours INTEGER NOT NULL

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167. );
168.
169.
170. ALTER TABLE public.discipline OWNER TO postgres;
171.
172. --
173. -- TOC entry 210 (class 1259 OID 16454)
174. -- Name: discipline_id_discipline_seq; Type: SEQUENCE; Schema: public; Owner:
    postgres
175. --
176.
177. ALTER TABLE public.discipline ALTER COLUMN id_discipline ADD GENERATED ALWAYS
    AS IDENTITY (
178.     SEQUENCE NAME public.discipline_id_discipline_seq
179.     START WITH 1
180.     INCREMENT BY 1
181.     NO MINVALUE
182.     NO MAXVALUE
183.     CACHE 1
184. );
185.
186.
187. --
188. -- TOC entry 218 (class 1259 OID 16506)
189. -- Name: discipline_teacher; Type: TABLE; Schema: public; Owner: postgres
190. --
191.
192. CREATE TABLE public.discipline_teacher (
193.     id_discipline INTEGER NOT NULL,
194.     id_teacher INTEGER NOT NULL,
195.     id INTEGER NOT NULL
196. );
197.
198.
199. ALTER TABLE public.discipline_teacher OWNER TO postgres;
200.
201. --
202. -- TOC entry 220 (class 1259 OID 16559)
203. -- Name: discipline_teacher_id_seq; Type: SEQUENCE; Schema: public; Owner:
    postgres
204. --
205.
206. ALTER TABLE public.discipline_teacher ALTER COLUMN id ADD GENERATED ALWAYS AS
    IDENTITY (
207.     SEQUENCE NAME public.discipline_teacher_id_seq
208.     START WITH 1
209.     INCREMENT BY 1
210.     NO MINVALUE
211.     NO MAXVALUE
212.     CACHE 1
213. );
214.
215.
216. --
217. -- TOC entry 209 (class 1259 OID 16444)
218. -- Name: group; Type: TABLE; Schema: public; Owner: postgres
219. --
220.
221. -- Имя данной таблицы берём в двойные кавычки, так как существует ключевое
    слово GROUP
222. CREATE TABLE public."group" (
223.     id_group INTEGER NOT NULL,
224.     id_course INTEGER NOT NULL,
225.     members INTEGER NOT NULL
226. );
227.
228.
229. ALTER TABLE public."group" OWNER TO postgres;
230.
231. --
232. -- TOC entry 216 (class 1259 OID 16480)

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233.  -- Name: group_enrollment; Type: TABLE; Schema: public; Owner: postgres
234.  --
235.
236.  CREATE TABLE public.group_enrollment (
237.      id_listener INTEGER NOT NULL,
238.      id_group INTEGER NOT NULL,
239.      id INTEGER NOT NULL
240.  );
241.
242.
243.  ALTER TABLE public.group_enrollment OWNER TO postgres;
244.
245.  --
246.  -- TOC entry 221 (class 1259 OID 16566)
247.  -- Name: group_enrollment_id_seq; Type: SEQUENCE; Schema: public; Owner:
postgres
248.  --
249.
250.  ALTER TABLE public.group_enrollment ALTER COLUMN id ADD GENERATED ALWAYS AS
IDENTITY (
251.      SEQUENCE NAME public.group_enrollment_id_seq
252.      START WITH 1
253.      INCREMENT BY 1
254.      NO MINVALUE
255.      NO MAXVALUE
256.      CACHE 1
257.  );
258.
259.
260.  --
261.  -- TOC entry 208 (class 1259 OID 16442)
262.  -- Name: group_id_group_seq; Type: SEQUENCE; Schema: public; Owner: postgres
263.  --
264.
265.  ALTER TABLE public."group" ALTER COLUMN id_group ADD GENERATED ALWAYS AS
IDENTITY (
266.      SEQUENCE NAME public.group_id_group_seq
267.      START WITH 1
268.      INCREMENT BY 1
269.      NO MINVALUE
270.      NO MAXVALUE
271.      CACHE 1
272.  );
273.
274.
275.  --
276.  -- TOC entry 205 (class 1259 OID 16413)
277.  -- Name: program; Type: TABLE; Schema: public; Owner: postgres
278.  --
279.
280.  CREATE TABLE public.program (
281.      id_program INTEGER NOT NULL,
282.      NAME CHARACTER varying(50) NOT NULL,
283.      TYPE CHARACTER varying(30) NOT NULL,
284.      hours INTEGER NOT NULL
285.  );
286.
287.
288.  ALTER TABLE public.program OWNER TO postgres;
289.
290.  --
291.  -- TOC entry 217 (class 1259 OID 16493)
292.  -- Name: program_discipline; Type: TABLE; Schema: public; Owner: postgres
293.  --
294.
295.  CREATE TABLE public.program_discipline (
296.      id_program INTEGER NOT NULL,
297.      id_discipline INTEGER NOT NULL,
298.      id INTEGER NOT NULL
299.  );
300.

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301.
302.  ALTER TABLE public.program_discipline OWNER TO postgres;
303.
304.  --
305.  -- TOC entry 222 (class 1259 OID 16573)
306.  -- Name: program_discipline_id_seq; Type: SEQUENCE; Schema: public; Owner:
postgres
307.  --
308.
309.  ALTER TABLE public.program_discipline ALTER COLUMN id ADD GENERATED ALWAYS AS
IDENTITY (
310.      SEQUENCE NAME public.program_discipline_id_seq
311.      START WITH 1
312.      INCREMENT BY 1
313.      NO MINVALUE
314.      NO MAXVALUE
315.      CACHE 1
316.  );
317.
318.
319.  --
320.  -- TOC entry 204 (class 1259 OID 16411)
321.  -- Name: program_id_program_seq; Type: SEQUENCE; Schema: public; Owner:
postgres
322.  --
323.
324.  ALTER TABLE public.program ALTER COLUMN id_program ADD GENERATED ALWAYS AS
IDENTITY (
325.      SEQUENCE NAME public.program_id_program_seq
326.      START WITH 1
327.      INCREMENT BY 1
328.      NO MINVALUE
329.      NO MAXVALUE
330.      CACHE 1
331.  );
332.
333.
334.  --
335.  -- TOC entry 203 (class 1259 OID 16406)
336.  -- Name: teacher; Type: TABLE; Schema: public; Owner: postgres
337.  --
338.
339.  CREATE TABLE public.teacher (
340.      id_teacher INTEGER NOT NULL,
341.      surname CHARACTER varying(30) NOT NULL,
342.      NAME CHARACTER varying(30) NOT NULL,
343.      "position" CHARACTER varying(30) NOT NULL
344.  );
345.
346.
347.  ALTER TABLE public.teacher OWNER TO postgres;
348.
349.  --
350.  -- TOC entry 202 (class 1259 OID 16404)
351.  -- Name: teacher_id_teacher_seq; Type: SEQUENCE; Schema: public; Owner:
postgres
352.  --
353.
354.  ALTER TABLE public.teacher ALTER COLUMN id_teacher ADD GENERATED ALWAYS AS
IDENTITY (
355.      SEQUENCE NAME public.teacher_id_teacher_seq
356.      START WITH 1
357.      INCREMENT BY 1
358.      NO MINVALUE
359.      NO MAXVALUE
360.      CACHE 1
361.  );
362.
363.
364.  --
365.  -- TOC entry 219 (class 1259 OID 16519)

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366. -- Name: timetable_creation; Type: TABLE; Schema: public; Owner: postgres
367. --
368.
369. CREATE TABLE public.timetable_creation (
370.     id_group INTEGER NOT NULL,
371.     id_discipline INTEGER NOT NULL,
372.     id_teacher INTEGER NOT NULL,
373.     id_classroom INTEGER NOT NULL,
374.     class_type CHARACTER varying(30) NOT NULL,
375.     DATE DATE NOT NULL,
376.     "time" TIME WITHOUT TIME ZONE NOT NULL,
377.     id INTEGER NOT NULL
378. );
379.
380.
381. ALTER TABLE public.timetable_creation OWNER TO postgres;
382.
383. --
384. -- TOC entry 223 (class 1259 OID 16580)
385. -- Name: timetable_creation_id_seq; Type: SEQUENCE; Schema: public; Owner:
postgres
386. --
387.
388. ALTER TABLE public.timetable_creation ALTER COLUMN id ADD GENERATED ALWAYS AS
IDENTITY (
389.     SEQUENCE NAME public.timetable_creation_id_seq
390.     START WITH 1
391.     INCREMENT BY 1
392.     NO MINVALUE
393.     NO MAXVALUE
394.     CACHE 1
395. );
396.
397.
398. --
399. -- TOC entry 3111 (class 0 OID 16463)
400. -- Dependencies: 213
401. -- Data for Name: building; Type: TABLE DATA; Schema: public; Owner: postgres
402. --
403.
404. -- Заполняем данными созданные таблицы
405. INSERT INTO public.building OVERRIDING SYSTEM VALUE VALUES (1, 'Prospekt
Kosygina, 28, St Petersburg, 195298');
406.
407.
408. --
409. -- TOC entry 3113 (class 0 OID 16470)
410. -- Dependencies: 215
411. -- Data for Name: classroom; Type: TABLE DATA; Schema: public; Owner:
postgres
412. --
413.
414. INSERT INTO public.classroom OVERRIDING SYSTEM VALUE VALUES (1, 1, 100,
'Lecture');
415. INSERT INTO public.classroom OVERRIDING SYSTEM VALUE VALUES (2, 1, 101,
'Practice');
416. INSERT INTO public.classroom OVERRIDING SYSTEM VALUE VALUES (3, 1, 102,
'Practice');
417. INSERT INTO public.classroom OVERRIDING SYSTEM VALUE VALUES (4, 1, 103,
'Practice');
418.
419.
420. --
421. -- TOC entry 3105 (class 0 OID 16432)
422. -- Dependencies: 207
423. -- Data for Name: course; Type: TABLE DATA; Schema: public; Owner: postgres
424. --
425.
426. INSERT INTO public.course OVERRIDING SYSTEM VALUE VALUES (1, 1, '2021-01-25',
'2021-05-30');

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427.  INSERT INTO public.course OVERRIDING SYSTEM VALUE VALUES (2, 2, '2021-01-25',
    '2021-06-13');
428.
429.
430.  --
431.  -- TOC entry 3098 (class 0 OID 16397)
432.  -- Dependencies: 200
433.  -- Data for Name: course_listener; Type: TABLE DATA; Schema: public; Owner:
    postgres
434.  --
435.
436.  INSERT INTO public.course_listener OVERRIDING SYSTEM VALUE VALUES (1,
    'Ivanov', 'Ivan', 1913865025, 'ivan029@gmail.com');
437.  INSERT INTO public.course_listener OVERRIDING SYSTEM VALUE VALUES (2,
    'Petrov', 'Egor', 1918312987, 'petrov_egor@mail.ru');
438.  INSERT INTO public.course_listener OVERRIDING SYSTEM VALUE VALUES (3,
    'Varlamov', 'Ilya', 1910312478, NULL);
439.  INSERT INTO public.course_listener OVERRIDING SYSTEM VALUE VALUES (4,
    'Medvedeva', 'Anna', 1912712433, 'medanna@mail.ru');
440.  INSERT INTO public.course_listener OVERRIDING SYSTEM VALUE VALUES (5, 'Kolk',
    'Nadia', 1913610395, 'nakolk@gmail.com');
441.  INSERT INTO public.course_listener OVERRIDING SYSTEM VALUE VALUES (6,
    'Grygoriev', 'Andrey', 1887235040, 'itsmeandrey@gmail.com');
442.  INSERT INTO public.course_listener OVERRIDING SYSTEM VALUE VALUES (7,
    'Kolesnikova', 'Maria', 1888666555, 'kolesnikova24041982@gmail.com');
443.  INSERT INTO public.course_listener OVERRIDING SYSTEM VALUE VALUES (8,
    'Lukashenko', 'Alexander', 1613863095, 'patient090820@mentalhealth.by');
444.
445.
446.  --
447.  -- TOC entry 3109 (class 0 OID 16456)
448.  -- Dependencies: 211
449.  -- Data for Name: discipline; Type: TABLE DATA; Schema: public; Owner:
    postgres
450.  --
451.
452.  INSERT INTO public.discipline OVERRIDING SYSTEM VALUE VALUES (1,
    'Introduction to Python', 32);
453.  INSERT INTO public.discipline OVERRIDING SYSTEM VALUE VALUES (2, 'Deep
    Learning', 128);
454.  INSERT INTO public.discipline OVERRIDING SYSTEM VALUE VALUES (3, 'Machine
    Learning: Regression', 48);
455.  INSERT INTO public.discipline OVERRIDING SYSTEM VALUE VALUES (4, 'Machine
    Learning: Clustering & Retrieval', 48);
456.  INSERT INTO public.discipline OVERRIDING SYSTEM VALUE VALUES (5, 'Web
    Application Technologies and Django', 96);
457.  INSERT INTO public.discipline OVERRIDING SYSTEM VALUE VALUES (6, 'Android App
    Development with Kotlin', 96);
458.  INSERT INTO public.discipline OVERRIDING SYSTEM VALUE VALUES (7, 'iOS App
    Development with Swift', 96);
459.
460.
461.  --
462.  -- TOC entry 3116 (class 0 OID 16506)
463.  -- Dependencies: 218
464.  -- Data for Name: discipline_teacher; Type: TABLE DATA; Schema: public;
    Owner: postgres
465.  --
466.
467.  INSERT INTO public.discipline_teacher OVERRIDING SYSTEM VALUE VALUES (1, 2,
    1);
468.  INSERT INTO public.discipline_teacher OVERRIDING SYSTEM VALUE VALUES (2, 3,
    2);
469.  INSERT INTO public.discipline_teacher OVERRIDING SYSTEM VALUE VALUES (3, 4,
    3);
470.  INSERT INTO public.discipline_teacher OVERRIDING SYSTEM VALUE VALUES (4, 4,
    4);
471.  INSERT INTO public.discipline_teacher OVERRIDING SYSTEM VALUE VALUES (5, 5,
    5);
472.  INSERT INTO public.discipline_teacher OVERRIDING SYSTEM VALUE VALUES (6, 6,
    6);

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473.  INSERT INTO public.discipline_teacher OVERRIDING SYSTEM VALUE VALUES (7, 6,
474.  7);
475.
476.  --
477.  -- TOC entry 3107 (class 0 OID 16444)
478.  -- Dependencies: 209
479.  -- Data for Name: group; Type: TABLE DATA; Schema: public; Owner: postgres
480.  --
481.
482.  INSERT INTO public."group" OVERRIDING SYSTEM VALUE VALUES (1, 1, 4);
483.  INSERT INTO public."group" OVERRIDING SYSTEM VALUE VALUES (2, 2, 4);
484.
485.
486.  --
487.  -- TOC entry 3114 (class 0 OID 16480)
488.  -- Dependencies: 216
489.  -- Data for Name: group_enrollment; Type: TABLE DATA; Schema: public; Owner:
postgres
490.  --
491.
492.  INSERT INTO public.group_enrollment OVERRIDING SYSTEM VALUE VALUES (2, 1, 5);
493.  INSERT INTO public.group_enrollment OVERRIDING SYSTEM VALUE VALUES (3, 1, 6);
494.  INSERT INTO public.group_enrollment OVERRIDING SYSTEM VALUE VALUES (5, 1, 7);
495.  INSERT INTO public.group_enrollment OVERRIDING SYSTEM VALUE VALUES (7, 1, 8);
496.  INSERT INTO public.group_enrollment OVERRIDING SYSTEM VALUE VALUES (1, 2, 9);
497.  INSERT INTO public.group_enrollment OVERRIDING SYSTEM VALUE VALUES (4, 2,
498.  10);
498.  INSERT INTO public.group_enrollment OVERRIDING SYSTEM VALUE VALUES (6, 2,
499.  11);
499.  INSERT INTO public.group_enrollment OVERRIDING SYSTEM VALUE VALUES (8, 2,
500.  12);
501.
502.  --
503.  -- TOC entry 3103 (class 0 OID 16413)
504.  -- Dependencies: 205
505.  -- Data for Name: program; Type: TABLE DATA; Schema: public; Owner: postgres
506.  --
507.
508.  INSERT INTO public.program OVERRIDING SYSTEM VALUE VALUES (1, 'Data Science',
'semester-long', 256);
509.  INSERT INTO public.program OVERRIDING SYSTEM VALUE VALUES (2, 'Mobile and Web
Development', 'semester-long', 288);
510.
511.
512.  --
513.  -- TOC entry 3115 (class 0 OID 16493)
514.  -- Dependencies: 217
515.  -- Data for Name: program_discipline; Type: TABLE DATA; Schema: public;
Owner: postgres
516.  --
517.
518.  INSERT INTO public.program_discipline OVERRIDING SYSTEM VALUE VALUES (1, 1,
519.  1);
519.  INSERT INTO public.program_discipline OVERRIDING SYSTEM VALUE VALUES (1, 2,
520.  2);
520.  INSERT INTO public.program_discipline OVERRIDING SYSTEM VALUE VALUES (1, 3,
521.  3);
521.  INSERT INTO public.program_discipline OVERRIDING SYSTEM VALUE VALUES (1, 4,
522.  4);
522.  INSERT INTO public.program_discipline OVERRIDING SYSTEM VALUE VALUES (2, 5,
523.  5);
523.  INSERT INTO public.program_discipline OVERRIDING SYSTEM VALUE VALUES (2, 6,
524.  6);
524.  INSERT INTO public.program_discipline OVERRIDING SYSTEM VALUE VALUES (2, 7,
525.  7);
525.
526.
527.  --
528.  -- TOC entry 3101 (class 0 OID 16406)

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529. -- Dependencies: 203
530. -- Data for Name: teacher; Type: TABLE DATA; Schema: public; Owner: postgres
531. --
532.
533. INSERT INTO public.teacher OVERRIDING SYSTEM VALUE VALUES (2, 'Sorokin',
'Dmitry', 'teacher');
534. INSERT INTO public.teacher OVERRIDING SYSTEM VALUE VALUES (3, 'Vasilyev',
'Maxim', 'teacher');
535. INSERT INTO public.teacher OVERRIDING SYSTEM VALUE VALUES (4, 'Belova',
'Elena', 'senior teacher');
536. INSERT INTO public.teacher OVERRIDING SYSTEM VALUE VALUES (5, 'Krylov',
'Alexey', 'teacher');
537. INSERT INTO public.teacher OVERRIDING SYSTEM VALUE VALUES (6, 'Bondarenko',
'Roman', 'senior teacher');
538.
539.
540. --
541. -- TOC entry 3117 (class 0 OID 16519)
542. -- Dependencies: 219
543. -- Data for Name: timetable_creation; Type: TABLE DATA; Schema: public;
Owner: postgres
544. --
545.
546. INSERT INTO public.timetable_creation OVERRIDING SYSTEM VALUE VALUES (1, 1,
2, 1, 'Lecture', '2021-01-25', '18:30:00', 1);
547. INSERT INTO public.timetable_creation OVERRIDING SYSTEM VALUE VALUES (1, 1,
2, 2, 'Practice', '2021-01-25', '20:00:00', 2);
548. INSERT INTO public.timetable_creation OVERRIDING SYSTEM VALUE VALUES (2, 5,
5, 1, 'Lecture', '2021-01-25', '20:00:00', 3);
549. INSERT INTO public.timetable_creation OVERRIDING SYSTEM VALUE VALUES (2, 5,
5, 3, 'Practice', '2021-01-27', '18:30:00', 4);
550. INSERT INTO public.timetable_creation OVERRIDING SYSTEM VALUE VALUES (2, 5,
5, 3, 'Practice', '2021-01-27', '20:00:00', 5);
551.
552.
553. --
554. -- TOC entry 3128 (class 0 OID 0)
555. -- Dependencies: 212
556. -- Name: building_id_building_seq; Type: SEQUENCE SET; Schema: public; Owner:
postgres
557. --
558.
559. -- Обновление значений первичных ключей
560. SELECT pg_catalog.SETVAL('public.building_id_building_seq', 1, TRUE);
561.
562.
563. --
564. -- TOC entry 3129 (class 0 OID 0)
565. -- Dependencies: 214
566. -- Name: classroom_id_classroom_seq; Type: SEQUENCE SET; Schema: public;
Owner: postgres
567. --
568.
569. SELECT pg_catalog.SETVAL('public.classroom_id_classroom_seq', 4, TRUE);
570.
571.
572. --
573. -- TOC entry 3130 (class 0 OID 0)
574. -- Dependencies: 206
575. -- Name: course_id_course_seq; Type: SEQUENCE SET; Schema: public; Owner:
postgres
576. --
577.
578. SELECT pg_catalog.SETVAL('public.course_id_course_seq', 2, TRUE);
579.
580.
581. --
582. -- TOC entry 3131 (class 0 OID 0)
583. -- Dependencies: 201
584. -- Name: course_listener_id_listener_seq; Type: SEQUENCE SET; Schema: public;
Owner: postgres

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585.  --
586.
587.  SELECT pg_catalog.SETVAL('public.course_listener_id_listener_seq', 8, TRUE);
588.
589.
590.  --
591.  -- TOC entry 3132 (class 0 OID 0)
592.  -- Dependencies: 210
593.  -- Name: discipline_id_discipline_seq; Type: SEQUENCE SET; Schema: public;
    Owner: postgres
594.  --
595.
596.  SELECT pg_catalog.SETVAL('public.discipline_id_discipline_seq', 7, TRUE);
597.
598.
599.  --
600.  -- TOC entry 3133 (class 0 OID 0)
601.  -- Dependencies: 220
602.  -- Name: discipline_teacher_id_seq; Type: SEQUENCE SET; Schema: public;
    Owner: postgres
603.  --
604.
605.  SELECT pg_catalog.SETVAL('public.discipline_teacher_id_seq', 7, TRUE);
606.
607.
608.  --
609.  -- TOC entry 3134 (class 0 OID 0)
610.  -- Dependencies: 221
611.  -- Name: group_enrollment_id_seq; Type: SEQUENCE SET; Schema: public; Owner:
    postgres
612.  --
613.
614.  SELECT pg_catalog.SETVAL('public.group_enrollment_id_seq', 12, TRUE);
615.
616.
617.  --
618.  -- TOC entry 3135 (class 0 OID 0)
619.  -- Dependencies: 208
620.  -- Name: group_id_group_seq; Type: SEQUENCE SET; Schema: public; Owner:
    postgres
621.  --
622.
623.  SELECT pg_catalog.SETVAL('public.group_id_group_seq', 2, TRUE);
624.
625.
626.  --
627.  -- TOC entry 3136 (class 0 OID 0)
628.  -- Dependencies: 222
629.  -- Name: program_discipline_id_seq; Type: SEQUENCE SET; Schema: public;
    Owner: postgres
630.  --
631.
632.  SELECT pg_catalog.SETVAL('public.program_discipline_id_seq', 7, TRUE);
633.
634.
635.  --
636.  -- TOC entry 3137 (class 0 OID 0)
637.  -- Dependencies: 204
638.  -- Name: program_id_program_seq; Type: SEQUENCE SET; Schema: public; Owner:
    postgres
639.  --
640.
641.  SELECT pg_catalog.SETVAL('public.program_id_program_seq', 2, TRUE);
642.
643.
644.  --
645.  -- TOC entry 3138 (class 0 OID 0)
646.  -- Dependencies: 202
647.  -- Name: teacher_id_teacher_seq; Type: SEQUENCE SET; Schema: public; Owner:
    postgres
648.  --

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649.
650. SELECT pg_catalog.SETVAL('public.teacher_id_teacher_seq', 6, TRUE);
651.
652.
653. --
654. -- TOC entry 3139 (class 0 OID 0)
655. -- Dependencies: 223
656. -- Name: timetable_creation_id_seq; Type: SEQUENCE SET; Schema: public;
    Owner: postgres
657. --
658.
659. SELECT pg_catalog.SETVAL('public.timetable_creation_id_seq', 5, TRUE);
660.
661.
662. --
663. -- TOC entry 2944 (class 2606 OID 16467)
664. -- Name: building building_pkey; Type: CONSTRAINT; Schema: public; Owner:
    postgres
665. --
666.
667. -- Добавление первичных ключей в таблицы
668. ALTER TABLE ONLY public.building
669.     ADD CONSTRAINT building_pkey PRIMARY KEY (id_building);
670.
671.
672. --
673. -- TOC entry 2946 (class 2606 OID 16474)
674. -- Name: classroom classroom_pkey; Type: CONSTRAINT; Schema: public; Owner:
    postgres
675. --
676.
677. ALTER TABLE ONLY public.classroom
678.     ADD CONSTRAINT classroom_pkey PRIMARY KEY (id_classroom);
679.
680.
681. --
682. -- TOC entry 2930 (class 2606 OID 16401)
683. -- Name: course_listener course_listener_pkey; Type: CONSTRAINT; Schema:
    public; Owner: postgres
684. --
685.
686. ALTER TABLE ONLY public.course_listener
687.     ADD CONSTRAINT course_listener_pkey PRIMARY KEY (id_listener);
688.
689.
690. --
691. -- TOC entry 2938 (class 2606 OID 16436)
692. -- Name: course course_pkey; Type: CONSTRAINT; Schema: public; Owner:
    postgres
693. --
694.
695. ALTER TABLE ONLY public.course
696.     ADD CONSTRAINT course_pkey PRIMARY KEY (id_course);
697.
698.
699. --
700. -- TOC entry 2942 (class 2606 OID 16460)
701. -- Name: discipline discipline_pkey; Type: CONSTRAINT; Schema: public; Owner:
    postgres
702. --
703.
704. ALTER TABLE ONLY public.discipline
705.     ADD CONSTRAINT discipline_pkey PRIMARY KEY (id_discipline);
706.
707.
708. --
709. -- TOC entry 2952 (class 2606 OID 16565)
710. -- Name: discipline_teacher discipline_teacher_pkey; Type: CONSTRAINT;
    Schema: public; Owner: postgres
711. --
712.

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713.  ALTER TABLE ONLY public.discipline_teacher
714.      ADD CONSTRAINT discipline_teacher_pkey PRIMARY KEY (id);
715.
716.
717.  --
718.  -- TOC entry 2925 (class 2606 OID 16588)
719.  -- Name: course graduation_date; Type: CHECK CONSTRAINT; Schema: public;
    Owner: postgres
720.  --
721.
722.  -- Добавление проверки на дату окончания курса, которая должна быть не меньше
    даты начала
723.  ALTER TABLE public.course
724.      ADD CONSTRAINT graduation_date CHECK ((graduation_date >= start_date))
    NOT VALID;
725.
726.
727.  --
728.  -- TOC entry 2948 (class 2606 OID 16572)
729.  -- Name: group_enrollment group_enrollment_pkey; Type: CONSTRAINT; Schema:
    public; Owner: postgres
730.  --
731.
732.  ALTER TABLE ONLY public.group_enrollment
733.      ADD CONSTRAINT group_enrollment_pkey PRIMARY KEY (id);
734.
735.
736.  --
737.  -- TOC entry 2940 (class 2606 OID 16448)
738.  -- Name: group group_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres
739.  --
740.
741.  ALTER TABLE ONLY public."group"
742.      ADD CONSTRAINT group_pkey PRIMARY KEY (id_group);
743.
744.
745.  --
746.  -- TOC entry 2924 (class 2606 OID 16542)
747.  -- Name: program hours; Type: CHECK CONSTRAINT; Schema: public; Owner:
    postgres
748.  --
749.
750.  -- Проверяем, что все вводимые числа положительные
751.  ALTER TABLE public.program
752.      ADD CONSTRAINT hours CHECK ((hours > 0)) NOT VALID;
753.
754.
755.  --
756.  -- TOC entry 2927 (class 2606 OID 16590)
757.  -- Name: discipline hours; Type: CHECK CONSTRAINT; Schema: public; Owner:
    postgres
758.  --
759.
760.  ALTER TABLE public.discipline
761.      ADD CONSTRAINT hours CHECK ((hours > 0)) NOT VALID;
762.
763.
764.  --
765.  -- TOC entry 2926 (class 2606 OID 16589)
766.  -- Name: group members; Type: CHECK CONSTRAINT; Schema: public; Owner:
    postgres
767.  --
768.
769.  ALTER TABLE public."group"
770.      ADD CONSTRAINT members CHECK ((members >= 0)) NOT VALID;
771.
772.
773.  --
774.  -- TOC entry 2928 (class 2606 OID 16591)
775.  -- Name: classroom number; Type: CHECK CONSTRAINT; Schema: public; Owner:
    postgres

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776.  --
777.
778.  ALTER TABLE public.classroom
779.      ADD CONSTRAINT number CHECK ((number > 0)) NOT VALID;
780.
781.
782.  --
783.  -- TOC entry 2932 (class 2606 OID 16544)
784.  -- Name: course_listener passport; Type: CONSTRAINT; Schema: public; Owner:
    postgres
785.  --
786.
787.  -- Делаем поле паспорта уникальным
788.  ALTER TABLE ONLY public.course_listener
789.      ADD CONSTRAINT passport UNIQUE (passport);
790.
791.
792.  --
793.  -- TOC entry 2950 (class 2606 OID 16579)
794.  -- Name: program_discipline program_discipline_pkey; Type: CONSTRAINT;
    Schema: public; Owner: postgres
795.  --
796.
797.  ALTER TABLE ONLY public.program_discipline
798.      ADD CONSTRAINT program_discipline_pkey PRIMARY KEY (id);
799.
800.
801.  --
802.  -- TOC entry 2936 (class 2606 OID 16417)
803.  -- Name: program program_pkey; Type: CONSTRAINT; Schema: public; Owner:
    postgres
804.  --
805.
806.  ALTER TABLE ONLY public.program
807.      ADD CONSTRAINT program_pkey PRIMARY KEY (id_program);
808.
809.
810.  --
811.  -- TOC entry 2934 (class 2606 OID 16410)
812.  -- Name: teacher teacher_pkey; Type: CONSTRAINT; Schema: public; Owner:
    postgres
813.  --
814.
815.  ALTER TABLE ONLY public.teacher
816.      ADD CONSTRAINT teacher_pkey PRIMARY KEY (id_teacher);
817.
818.
819.  --
820.  -- TOC entry 2954 (class 2606 OID 16586)
821.  -- Name: timetable_creation timetable_creation_pkey; Type: CONSTRAINT;
    Schema: public; Owner: postgres
822.  --
823.
824.  ALTER TABLE ONLY public.timetable_creation
825.      ADD CONSTRAINT timetable_creation_pkey PRIMARY KEY (id);
826.
827.
828.  --
829.  -- TOC entry 2957 (class 2606 OID 16475)
830.  -- Name: classroom id_building; Type: FK CONSTRAINT; Schema: public; Owner:
    postgres
831.  --
832.
833.  -- Добавляем первичные ключи
834.  ALTER TABLE ONLY public.classroom
835.      ADD CONSTRAINT id_building FOREIGN KEY (id_building) REFERENCES
    public.building(id_building) NOT VALID;
836.
837.
838.  --
839.  -- TOC entry 2967 (class 2606 OID 16537)

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840.  -- Name: timetable_creation id_classroom; Type: FK CONSTRAINT; Schema:
      public; Owner: postgres
841.  --
842.
843.  ALTER TABLE ONLY public.timetable_creation
844.  ADD CONSTRAINT id_classroom FOREIGN KEY (id_classroom) REFERENCES
      public.classroom(id_classroom) NOT VALID;
845.
846.
847.  --
848.  -- TOC entry 2956 (class 2606 OID 16449)
849.  -- Name: group id_course; Type: FK CONSTRAINT; Schema: public; Owner:
      postgres
850.  --
851.
852.  ALTER TABLE ONLY public."group"
853.  ADD CONSTRAINT id_course FOREIGN KEY (id_course) REFERENCES
      public.course(id_course) NOT VALID;
854.
855.
856.  --
857.  -- TOC entry 2961 (class 2606 OID 16501)
858.  -- Name: program_discipline id_discipline; Type: FK CONSTRAINT; Schema:
      public; Owner: postgres
859.  --
860.
861.  ALTER TABLE ONLY public.program_discipline
862.  ADD CONSTRAINT id_discipline FOREIGN KEY (id_discipline) REFERENCES
      public.discipline(id_discipline) NOT VALID;
863.
864.
865.  --
866.  -- TOC entry 2962 (class 2606 OID 16509)
867.  -- Name: discipline_teacher id_discipline; Type: FK CONSTRAINT; Schema:
      public; Owner: postgres
868.  --
869.
870.  ALTER TABLE ONLY public.discipline_teacher
871.  ADD CONSTRAINT id_discipline FOREIGN KEY (id_discipline) REFERENCES
      public.discipline(id_discipline) NOT VALID;
872.
873.
874.  --
875.  -- TOC entry 2965 (class 2606 OID 16527)
876.  -- Name: timetable_creation id_discipline; Type: FK CONSTRAINT; Schema:
      public; Owner: postgres
877.  --
878.
879.  ALTER TABLE ONLY public.timetable_creation
880.  ADD CONSTRAINT id_discipline FOREIGN KEY (id_discipline) REFERENCES
      public.discipline(id_discipline) NOT VALID;
881.
882.
883.  --
884.  -- TOC entry 2964 (class 2606 OID 16522)
885.  -- Name: timetable_creation id_group; Type: FK CONSTRAINT; Schema: public;
      Owner: postgres
886.  --
887.
888.  ALTER TABLE ONLY public.timetable_creation
889.  ADD CONSTRAINT id_group FOREIGN KEY (id_group) REFERENCES
      public."group"(id_group) NOT VALID;
890.
891.
892.  --
893.  -- TOC entry 2959 (class 2606 OID 16686)
894.  -- Name: group_enrollment id_group; Type: FK CONSTRAINT; Schema: public;
      Owner: postgres
895.  --
896.
897.  ALTER TABLE ONLY public.group_enrollment

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898.      ADD CONSTRAINT id_group FOREIGN KEY (id_group) REFERENCES
      public."group"(id_group) NOT VALID;
899.
900.
901.  --
902.  -- TOC entry 2958 (class 2606 OID 16483)
903.  -- Name: group_enrollment id_listener; Type: FK CONSTRAINT; Schema: public;
      Owner: postgres
904.  --
905.
906.  ALTER TABLE ONLY public.group_enrollment
907.      ADD CONSTRAINT id_listener FOREIGN KEY (id_listener) REFERENCES
      public.course_listener(id_listener) NOT VALID;
908.
909.
910.  --
911.  -- TOC entry 2955 (class 2606 OID 16437)
912.  -- Name: course_id_program; Type: FK CONSTRAINT; Schema: public; Owner:
      postgres
913.  --
914.
915.  ALTER TABLE ONLY public.course
916.      ADD CONSTRAINT id_program FOREIGN KEY (id_program) REFERENCES
      public.program(id_program) NOT VALID;
917.
918.
919.  --
920.  -- TOC entry 2960 (class 2606 OID 16496)
921.  -- Name: program_discipline id_program; Type: FK CONSTRAINT; Schema: public;
      Owner: postgres
922.  --
923.
924.  ALTER TABLE ONLY public.program_discipline
925.      ADD CONSTRAINT id_program FOREIGN KEY (id_program) REFERENCES
      public.program(id_program) NOT VALID;
926.
927.
928.  --
929.  -- TOC entry 2963 (class 2606 OID 16514)
930.  -- Name: discipline_teacher id_teacher; Type: FK CONSTRAINT; Schema: public;
      Owner: postgres
931.  --
932.
933.  ALTER TABLE ONLY public.discipline_teacher
934.      ADD CONSTRAINT id_teacher FOREIGN KEY (id_teacher) REFERENCES
      public.teacher(id_teacher) NOT VALID;
935.
936.
937.  --
938.  -- TOC entry 2966 (class 2606 OID 16532)
939.  -- Name: timetable_creation id_teacher; Type: FK CONSTRAINT; Schema: public;
      Owner: postgres
940.  --
941.
942.  ALTER TABLE ONLY public.timetable_creation
943.      ADD CONSTRAINT id_teacher FOREIGN KEY (id_teacher) REFERENCES
      public.teacher(id_teacher) NOT VALID;
944.
945.
946.  -- Completed on 2021-04-25 14:32:30 MSK
947.
948.  --
949.  -- PostgreSQL database dump complete
950.  --

```

Вывод: в ходе лабораторной работы мы овладели практическими навыками создания таблицы базы данных PostgreSQL с помощью pgAdmin4. Так, мы научились создавать таблицы, добавлять в них данные, копировать и восстанавливать базу данных.