

A6 – Integrity constraints. Indexes, triggers, user functions and database populated with data

This artefact contains the physical schema of the database necessary for the Project Management website. It contains the characterisation of the indexes, the support of data integrity rules with triggers and the definition of the database user-defined functions. In addition, the code necessary for the above-mentioned indexes, queries and triggers, and all the inserts made.

1. Database workload

1.1. Estimate of tuples

Relation reference	Relation name	Order of magnitude	Estimated growth
R01	User	Dozens	Units per week
R02	Project	Hundreds	Dozens per month
R03	Board	Hundreds	Dozens per month
R04	Task	Thousands	Dozens per week
R05	Meeting	Hundreds	Units per week
R06	Personal_event	Hundreds	Units per week
R07	Comment	Dozens	Units per week
R08	File	Dozens	Units per week
R09	Notification	Thousands	Units per day
R10	Progress_update	Thousands	Units per day
R11	Message	Hundreds	Units per week
R12	Project_team	Hundreds	Dozens per month
R13	Board_team	Hundreds	Dozens per month
R14	Profile_picture	Dozens	No growth
R15	Project_picture	Hundreds	No growth
R16	Contact	Dozens	Units per month
R17	Ban_user	Units	Units per year
R18	Archive_project	Dozens	Units per month

1.2. Most frequent queries

Query reference	SELECT01
Query description	All emails
<pre>SELECT e_mail FROM "User"</pre>	

Query reference	SELECT02
Query description	Email's password
<pre>SELECT password FROM "User" WHERE user.e_mail = \$userEmail</pre>	

Query reference	SELECT03
Query description	All public projects
<pre>SELECT name FROM Project WHERE Project.privacy=1</pre>	

Query reference	SELECT04
Query description	All user's projects
<pre>SELECT * FROM Project INNER JOIN Project_team ON Project.id=Project_team.id_project WHERE Project.id_coordinator=\$user OR Project_team.id_user=\$user</pre>	

Query reference	SELECT05
Query description	All user's personal events
<pre>SELECT * FROM Personal_event WHERE Personal_event.id_user=\$user</pre>	

Query reference	SELECT06
Query description	All users board's meetings
<pre>SELECT * FROM Meeting INNER JOIN Board_team ON Meeting.id_board=Board_team.id_board WHERE Board_team.id_worker=\$user</pre>	

Query reference	SELECT07
Query description	User's personal info
<pre>SELECT * FROM "User" WHERE User.id=\$user</pre>	

Query reference	SELECT08
Query description	User's notifications
<pre>SELECT * FROM Notification WHERE Notification.id_user=\$user</pre>	

Query reference	SELECT09
Query description	User's number of unread notifications
<pre>SELECT COUNT id FROM Notification WHERE Notification.id_user=\$user AND Notification.read=0</pre>	

Query reference	SELECT10
Query description	Project's boards
<pre>SELECT * FROM Board WHERE Board.id_project=\$projectId</pre>	

Query reference	SELECT11
Query description	Project's info
<pre>SELECT * FROM Project WHERE Project.id=\$projectId</pre>	

Query reference	SELECT12
Query description	Project worker's info
<pre>SELECT User.full_name, Profile_picture.path, User.e_mail FROM "User"</pre>	

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INNER JOIN Profile_picture ON Profile_picture.id_user=$user
WHERE Project.id=$projectId AND
Profile_picture.path=SELECT(MAX(Profile_picture.id))
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Query reference	SELECT13
Query description	Project's events
<pre>SELECT * FROM Meeting INNER JOIN Board ON Board.id=Meeting.id_board WHERE Board.id_project=\$projectId</pre>	

Query reference	SELECT14
Query description	Last week project's messages
<pre>SELECT * FROM Message WHERE Message.id_project=\$projectId AND Message.date >= DATEADD(day, -7, GETDATE())</pre>	

Query reference	SELECT15
Query description	Board's tasks
<pre>SELECT Task.id FROM Task WHERE Task.id_board=\$boardId</pre>	

Query reference	SELECT16
Query description	Task's info
<pre>SELECT * FROM Task WHERE Task.id=\$taskId</pre>	

Query reference	SELECT15
Query description	Last 5 task's updates
<pre>SELECT TOP 5 Comment.id, File.id, Progress_update.id FROM Task INNER JOIN Comment ON Task.id=Comment.id_task INNER JOIN File ON Task.id=File.id_task INNER JOIN Task.id=Progress_update.id_task WHERE Task.id=\$taskId</pre>	

Query reference	SELECT16
Query description	Search project
<pre>SELECT description, start_date, name FROM Project WHERE description LIKE '%\$search%' OR title LIKE '%\$search%' AND privacy=false; ORDER BY title;</pre>	

Query reference	SELECT17
Query description	Search user
<pre>SELECT username, full_name, e_mail FROM User WHERE username LIKE '%\$search%' OR full_name LIKE '%\$search%'; ORDER BY username;</pre>	

1.3. Most frequent modifications

Query reference	UPDATE01
Query description	Insert new progress update
INSERT INTO Progress_update (new_value, id_user, id_task) VALUES (\$new_value, \$id_user, \$id_task)	

Query reference	UPDATE02
Query description	Update task progress
UPDATE Task SET progress = \$progress	

Query reference	UPDATE03
Query description	Upload new file
INSERT INTO File (path, description, id_user, id_task) VALUES (\$path, \$description, \$id_user, \$id_task)	

Query reference	UPDATE04
Query description	Comment task
INSERT INTO Comment (comment, id_user, id_task) VALUES (\$comment, \$id_user, \$id_task)	

Query reference	UPDATE05
Query description	Add personal event
INSERT INTO Personal_event (date, place, name, id_user) VALUES (\$date, \$place, \$name, \$id_user)	

Query reference	UPDATE06
Query description	Add board meeting
INSERT INTO Meeting (date, name, place, id_board) VALUES (\$date, \$name, \$place, \$id_board)	

Query reference	UPDATE07
Query description	Add new project
INSERT INTO Project (description, name, id_coordinator, privacy) VALUES (\$description, \$name, \$id_coordinator, \$privacy)	

Query reference	UPDATE08
Query description	Add new board to existing project
INSERT INTO Board (description, name, id_creator, id_project) VALUES (\$description, \$name, \$id_creator, \$id_project)	

Query reference	UPDATE09
Query description	Archive or close task
UPDATE Task SET task_state=\$task_state	
Query reference	UPDATE10
Query description	Archive or close project
UPDATE Project	

SET project_state=\$project_state
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Query reference	UPDATE11
Query description	Add new worker to project
INSERT INTO Project_team (id_user, id_project) VALUES (\$id_user, \$id_project)	

Query reference	UPDATE12
Query description	Add new worker to board
INSERT INTO Board_team (id_board, id_user) VALUES (\$id_board, \$id_user)	

Query reference	UPDATE13
Query description	Add new user
INSERT INTO User (e_mail, password, URL, username) VALUES (\$e_mail, \$password, \$URL, \$username)	

Query reference	UPDATE14
Query description	Update user's full name
Query frequency	
UPDATE User SET full_name=\$full_name	

Query reference	UPDATE15
Query description	Change password
UPDATE User SET password=\$password	

Query reference	UPDATE16
Query description	Set user as administrator
UPDATE User SET administrator=\$administrator	

Query reference	UPDATE17
Query description	Change profile picture
Query frequency	
INSERT INTO Profile_picture (id_user, path) VALUES (\$id_user, \$path)	

Query reference	UPDATE18
Query description	Change project description
UPDATE Project SET description=\$description	

Query reference	UPDATE19
Query description	Add project end date
UPDATE Project SET end_date=\$end_date	

Query reference	UPDATE20
Query description	Change project picture
INSERT INTO Project_picture (id_project, path) VALUES (\$id_project, \$path)	

Query reference	UPDATE21
Query description	Add user to contacts
INSERT INTO Contact (id_user, id_contact) VALUES (\$id_user, \$id_contact)	

Query reference	UPDATE22
Query description	Send messages to project forum
INSERT INTO Message (message, id_user, id_project) VALUES (\$message, \$id_user, \$id_project)	

Query reference	UPDATE23
Query description	Create new notification
INSERT INTO Notification (id_user, notification) VALUES (\$id_user, \$notification)	

Query reference	UPDATE24
Query description	Mark notification as read or unread
Query frequency	
UPDATE Notification SET read=\$read	

2. Proposed Indexes

2.1. Performance indexes

Index reference	INDEX01
Related queries	SELECT07
Index relation	User
Index attribute	e_mail
Index type	Hash
Cardinality	High
Clustering	No
Justification	Query needs to be executed many times and has to be fast; cardinality is high because the e_mail is a unique key; not a good candidate for clustering.
CREATE INDEX email_user ON User USING hash(e_mail)	

Index reference	INDEX02
Related queries	SELECT03
Index relation	Project
Index attribute	id
Index type	Hash
Cardinality	High
Clustering	No
Justification	Query needs to be executed many times and has to be fast; cardinality is high because the id is a unique key; not a good candidate for clustering.
CREATE INDEX id_project ON Project USING hash(id)	

Index reference	INDEX03
Related queries	SELECT04
Index relation	Project_team
Index attribute	id_user
Index type	Hash
Cardinality	Medium
Clustering	Yes
Justification	Query needs to be executed many times and table is very large, so it has to be fast; cardinality is medium so it's a good candidate for clustering.
CREATE INDEX user_project ON Project_team USING hash(id_user)	

Index reference	INDEX04
Related queries	SELECT10
Index relation	Board
Index attribute	id_project
Index type	Hash
Cardinality	Medium
Clustering	Yes
Justification	Query needs to be executed many times and has to be fast because it is executed many times; cardinality is medium so it's a good candidate for clustering.
CREATE INDEX project_boards ON Board USING hash(id_project)	

Index reference	INDEX05
Related queries	SELECT14
Index relation	Message
Index attribute	date, project
Index type	B-tree
Cardinality	Medium
Clustering	Yes
Justification	Query needs to be executed many times and table is very large; cardinality is medium so it's a good candidate for clustering.
CREATE INDEX message_date ON Message USING btree(date, id_project)	

2.2. Full-text Search indexes

Index reference	INDEX06
Related queries	SELECT16
Index relation	Project
Index attribute	title
Index type	GiST
Clustering	No
Justification	To improve the performance of full text searches while searching for projects by their titles; GiST because it's better for dynamic data.
<pre>CREATE INDEX search_project ON Project USING GIST(title)</pre>	

Index reference	INDEX07
Related queries	SELECT17
Index relation	User
Index attribute	username
Index type	GiST
Clustering	No
Justification	To improve the performance of full text searches while searching for users by their username; GiST because it's better for dynamic data.
<pre>CREATE INDEX search_user ON User USING GIST(username)</pre>	

3. Triggers

Trigger reference	TRIGGER01
Trigger description	An e-mail can only be registered once
<pre>CREATE FUNCTION check_exist_email() RETURNS TRIGGER AS \$BODY\$ BEGIN IF EXISTS (SELECT e_mail FROM "User" WHERE NEW.e_mail = e_mail) THEN RAISE EXCEPTION 'The e-mail you are trying to use is already registred' END IF; RETURN NEW; END \$BODY\$ LANGUAGE plpgsql; CREATE TRIGGER check_exist_email</pre>	


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BEFORE INSERT ON "User"
FOR EACH ROW
EXECUTE PROCEDURE check_exist_user();

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Trigger reference	TRIGGER02
Trigger description	An username can only be registered once
<pre> CREATE FUNCTION check_exist_username() RETURNS TRIGGER AS \$BODY\$ BEGIN IF EXISTS (SELECT username FROM "User" WHERE NEW.username = username) THEN RAISE EXCEPTION 'The username you are trying to use is already in use' END IF; RETURN NEW; END \$BODY\$ LANGUAGE plpgsql; CREATE TRIGGER check_exist_username BEFORE INSERT ON "User" FOR EACH ROW EXECUTE PROCEDURE check_exist_username(); </pre>	

Trigger reference	TRIGGER03
Trigger description	Two boards of the same project can't have the same name
<pre> CREATE FUNCTION check_exist_board() RETURNS TRIGGER AS \$BODY\$ BEGIN IF EXISTS (SELECT name FROM Board WHERE Board.id_project=\$projectId AND NEW.name=name) THEN RAISE EXCEPTION 'This project already has a board with that name' END IF; RETURN NEW; END \$BODY\$ LANGUAGE plpgsql; </pre>	

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CREATE TRIGGER check_exist_board
    BEFORE INSERT ON Board
    FOR EACH ROW
    EXECUTE PROCEDURE check_exist_board();

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Trigger reference	TRIGGER04
Trigger description	Can't add user to team if he already belongs to it
<pre> CREATE FUNCTION check_exist_worker() RETURNS TRIGGER AS \$BODY\$ BEGIN IF EXISTS (SELECT name FROM Project_team WHERE Project_team.id_project=\$projectId AND NEW.id_worker=id_worker) THEN RAISE EXCEPTION 'This user already belongs to this team' END IF; RETURN NEW; END \$BODY\$ LANGUAGE plpgsql; CREATE TRIGGER check_exist_worker BEFORE INSERT ON Project_team FOR EACH ROW EXECUTE PROCEDURE check_exist_worker(); </pre>	

Trigger reference	TRIGGER05
Trigger description	Can't add user to contact list if he already belongs to it
<pre> CREATE FUNCTION check_exist_contact() RETURNS TRIGGER AS \$BODY\$ BEGIN IF EXISTS (SELECT name FROM Contact WHERE Contact.id_user=\$userId AND NEW.id_contact=id_contact AND NEW.id_contact=\$userId) THEN </pre>	

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        RAISE EXCEPTION 'This user already is on our
        contact list'
    END IF;
    RETURN NEW;
END
$BODY$
LANGUAGE plpgsql;

CREATE TRIGGER check_exist_contact
    BEFORE INSERT ON Contact
    FOR EACH ROW
        EXECUTE PROCEDURE check_exist_contact();

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4. SQL Code

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USE
RS
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INSERT INTO "User" (e_mail, full_name, password, url, username,
administrator) VALUES ('up201405655@fe.up.pt', 'Teresa Valério',
'teresaMaya19', 444, 'TeresaValerio', true)
INSERT INTO "User" (e_mail, full_name, password, url, username,
administrator) VALUES ('up201402784@fe.up.pt', 'Inês Gonçalves',
'inesggtunafe8', 123, 'InesGoncalves', true)
INSERT INTO "User" (e_mail, full_name, password, url, username,
administrator) VALUES ('up201405085@fe.up.pt', 'Sara Gomes', 'sara23bolota',
635, 'SaraGomes', true)
INSERT INTO "User" (e_mail, full_name, password, url, username,
administrator) VALUES ('joana.monteiro@hotmail.com', 'Joana Monteiro',
'QWERTY', 883, 'JoanaMonteiro45', false)
INSERT INTO "User" (e_mail, full_name, password, url, username) VALUES
('maria.costa12@hotmail.com', 'Maria João Costa', 'palavrapasse123',
713, 'MJCosta14')
INSERT INTO "User" (e_mail, full_name, password, url, username) VALUES
('joao_santos@hotmail.com', 'João Costa Santos', 'SG234StbtQ',
790, 'JoaoCS18')
INSERT INTO "User" (e_mail, full_name, password, url, username) VALUES
('luis134castro@hotmail.com', 'Luís Castro', 'BB13fsRg6', 253, 'LuisCastro')
INSERT INTO "User" (e_mail, full_name, password, url, username) VALUES
('up201404541@fe.up.pt', 'Francisca Seabra', 'BETHDDD', 662, 'FSeabra')

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INSERT INTO "User" (e_mail, full_name, password, url, username,
administrator) VALUES ('lacinia.orci.consectetuer@velarcu.ca', 'Noelle
Moran', 'PMR97BRV5EC', 621, 'NoelleMoran44', false)
INSERT INTO "User" (e_mail, full_name, password, url, username,
administrator) VALUES ('ipsum.nunc.id@scelerisquemollis.edu', 'MacKenzie
Garrison', 'YUY23IU09RC', 412, 'MKenzieG', false)
INSERT INTO "User" (e_mail, full_name, password, url, username) VALUES
('urna.Vivamus.molestie@Fusce.net', 'Isadora Hewitt', 'BUE71FOD50I',
914, 'HIsadora23')
INSERT INTO "User" (e_mail, full_name, password, url, username,
administrator) VALUES ('tincidunt@tinciduntuiaugue.com', 'Lacota Page',
'GPB35FPL2TB', 515, 'LacotaPagee', false)
INSERT INTO "User" (e_mail, full_name, password, url, username,
administrator) VALUES ('ac.risus.Morbi@mauris.co.uk', 'Priscilla Silva',
'UPK14PEJ2DZ', 328, 'SilvaP47', false)
INSERT INTO "User" (e_mail, full_name, password, url, username,
administrator) VALUES ('eu@tellus.net', 'Lynn Burch', 'IGU81EUU7UB',
555, 'lynn29', false)
INSERT INTO "User" (e_mail, full_name, password, url, username) VALUES
('nascetur.ridiculus@nonmassa.net', 'Jocelyn Fulton', 'IEV88RCI7LT',
181, 'Fulton')
INSERT INTO "User" (e_mail, full_name, password, url, username,
administrator) VALUES ('sem@consequatauctornunc.co.uk', 'Tashya Deleon',
'LZJ76NCB9QP', 741, 'deleonTashya', false)
INSERT INTO "User" (e_mail, full_name, password, url, username,
administrator) VALUES ('et.euismod.et@pharetraNamac.net', 'Lillian Snow',
'MYX34BPA2RK', 301, 'lillian', false)
INSERT INTO "User" (e_mail, full_name, password, url, username) VALUES
('cursus.Nunc@vitaeeratVivamus.edu', 'Margaret Mack', 'NRZ16ICN4NL',
215, 'Margarety')
INSERT INTO "User" (e_mail, full_name, password, url, username) VALUES
('vel.faucibus.id@lacinia.edu', 'Martha Cain', 'OGM48BTU8UO', 590
, 'MarthaCain')
INSERT INTO "User" (e_mail, full_name, password, url, username) VALUES
('fi1996@gmail.com', 'Filipa Soares', 'GLsn36d', 506, 'FiSoares45')

```

--- PROJECTS ---

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INSERT INTO "Project" (description, start_date, end_date, name,
id_coordinator, project_state, privacy) VALUES ('Projeto de LIEB para

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deteção de apneia do sono', TIMESTAMP '2018/03/04', timestamp '2019/05/18',
'Hypnos', 1, 'In_progress', true)
INSERT INTO "Project" (start_date, end_date, name, id_coordinator,
project_state) VALUES (TIMESTAMP '2018/02/20', TIMESTAMP '2019/05/25
24:00:00', 'Fotopletismógrafo portátil', 1, 'In_progress')
INSERT INTO "Project" (start_date, end_date, name, id_coordinator) VALUES
(TIMESTAMP '2018/03/1', TIMESTAMP '2019/06/10 9:00:00', 'Estudo da doença de
Alzheimer através de análise de imagens do cérebro', 3)
INSERT INTO "Project" (description, start_date, end_date, name,
id_coordinator, project_state, privacy) VALUES ('Detecção de emoções através
da análise de sinais de EEG', TIMESTAMP '2018/03/14', timestamp
'2019/09/18', 'EEG feelings', 4, 'In_progress', true)
INSERT INTO "Project" (start_date, end_date, name, id_coordinator,
project_state, privacy) VALUES (TIMESTAMP '2018/02/15', TIMESTAMP
'2019/05/30', 'Projeto MINV', 20, 'In_progress', false)

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--- PROJECT'S TEAMS ---
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INSERT INTO "Project_team" (id_user, id_project) VALUES (3,1)
INSERT INTO "Project_team" (id_user, id_project) VALUES (8,1)
INSERT INTO "Project_team" (id_user, id_project) VALUES (3,2)
INSERT INTO "Project_team" (id_user, id_project) VALUES (16,3)
INSERT INTO "Project_team" (id_user, id_project) VALUES (5,4)
INSERT INTO "Project_team" (id_user, id_project) VALUES (6,4)
INSERT INTO "Project_team" (id_user, id_project) VALUES (7,4)
INSERT INTO "Project_team" (id_user, id_project) VALUES (8,4)
INSERT INTO "Project_team" (id_user, id_project) VALUES (9,4)
INSERT INTO "Project_team" (id_user, id_project) VALUES (10,4)
INSERT INTO "Project_team" (id_user, id_project) VALUES (11,4)
INSERT INTO "Project_team" (id_user, id_project) VALUES (1,5)
INSERT INTO "Project_team" (id_user, id_project) VALUES (3,5)

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--- PROJECT'S BOARDS ---
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INSERT INTO "Board" (description, name, id_creator, id_project) VALUES
('Pesquisa de fundamentos teóricos que servirão de base à implementação de
código', 'Pesquisa', 1, 1)
INSERT INTO "Board" (description, name, id_creator, id_project) VALUES
('Pesquisa sobre funcionamento da fotopletismografia e métodos a adotar',
'Pesquisa', 3, 2)
INSERT INTO "Board" (name, id_creator, id_project) VALUES ('Construção
circuito', 3, 2)
INSERT INTO "Board" (description, name, id_creator, id_project) VALUES
('Pesquisa de possíveis técnicas a adotar', 'Pesquisa', 3, 3)
INSERT INTO "Board" (description, name, id_creator, id_project) VALUES
('Procurar artigos sobre projetos semelhantes', 'Artigos', 7, 4)
INSERT INTO "Board" (description, name, id_creator, id_project) VALUES
('Pesquisar acerca do EEC e possíveis maneiras de o analisar', 'Pesquisa
EEG', 9, 4)
INSERT INTO "Board" (description, name, id_creator, id_project) VALUES
('Pesquisa de artigos relacionados com o tema', 'Pesquisa bibliográfica', 1,
5)
INSERT INTO "Board" (description, name, id_creator, id_project) VALUES
('Elaboração do questionário sob a forma de Google Form', 'Questionário',
20, 5)
INSERT INTO "Board" (description, name, id_creator, id_project) VALUES
('Elaboração do guião da entrevista', 'Entrevista', 3, 5)

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--- BOARD'S TASKS ---
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INSERT INTO "Task" (deadline, description, name, progress, task_state,
id_creator, id_board) VALUES(TIMESTAMP '2019/05/1', 'Pesquisa em várias
fontes bibliográficas relativamente ao que causa a apneia e como poderá ser
detetada' , 'Pesquisa sobre apneia', 10, 'In_progress', 1, 1)
INSERT INTO "Task" (deadline, description, name, progress, task_state,
id_creator, id_board) VALUES(TIMESTAMP '2019/05/10', 'Pesquisa sobre
fotopletismografia (como funciona, que método utilizar, etc)' , 'Pesquisa
fotopletismografia', 40, 'In_progress', 3, 2)
INSERT INTO "Task" (deadline, description, name, progress, task_state,
id_creator, id_board) VALUES(TIMESTAMP '2019/05/15', 'Pesquisar melhor
sensor a utilizar e possíveis circuitos a implementar' , 'Pesquisa
circuito', 30, 'In_progress', 3, 2)
INSERT INTO "Task" (deadline, description, name, progress, task_state,
id_creator, id_board) VALUES(TIMESTAMP '2019/05/10', 'Pesquisa sobre o que é

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a doença de Alzheimer e que efeitos tem no cérebro humano' , 'Pesquisa sobre Alzheimer', 30, 'In_progress', 3, 3)

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INSERT INTO "Task" (deadline, description, name, progress, task_state, id_creator, id_board) VALUES(TIMESTAMP '2019/05/20', 'Pesquisa sobre possíveis técnicas de análise de imagem a adotar e base de dados a utilizar', 'Técnicas de análise de imagem', 20, 'In_progress', 3, 3)
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```
INSERT INTO "Task" (deadline, description, name, progress, task_state, id_creator, id_board) VALUES(TIMESTAMP '2019/06/24', 'O que é o EEG, como é obtido e que informação nos dá?', 'Fundamentos EEG', 60, 'In_progress', 8, 4)
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INSERT INTO "Task" (deadline, description, name, progress, task_state, id_creator, id_board) VALUES(TIMESTAMP '2019/06/30', 'Pesquisa de processamentos a adotar para analisar o sinal EEG', 'Processamento EEG', 10, 'In_progress', 6, 4)
```

```
INSERT INTO "Task" (deadline, description, name, progress, task_state, id_creator, id_board) VALUES(TIMESTAMP '2019/04/22', 'Pesquisa sobre a estrutura que um questionário deve ter (quantidade/tipo de perguntas, etc)', 'Estrutura questionário', 40, 'In_progress', 1, 8)
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INSERT INTO "Task" (deadline, name, progress, task_state, id_creator, id_board) VALUES(TIMESTAMP '2019/04/30', 'Elaboração questionário', 10, 'In_progress', 20, 8)
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INSERT INTO "Task" (deadline, name, progress, task_state, id_creator, id_board) VALUES(TIMESTAMP '2019/04/25', 'Como fazer uma entrevista?', 50, 'In_progress', 3, 9)
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```
INSERT INTO "Task" (deadline, name, progress, task_state, id_creator, id_board) VALUES(TIMESTAMP '2019/04/27', 'Guião da entrevista', 10, 'In_progress', 1, 9)
```

```
INSERT INTO "Task" (deadline, name, progress, task_state, id_creator, id_board) VALUES(TIMESTAMP '2019/05/10', 'Realização das entrevista', 10, 'In_progress', 20, 9)
```

--- BOARD'S TEAMS ---

```
INSERT INTO "Board_team" VALUES (3,1)
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INSERT INTO "Board_team" VALUES (2,1)
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INSERT INTO "Board_team" VALUES (4,16)
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INSERT INTO "Board_team" VALUES (5,5)
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INSERT INTO "Board_team" VALUES (5,1)
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INSERT INTO "Board_team" VALUES (5,8)
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```
INSERT INTO "Board_team" VALUES (5,11)
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```
INSERT INTO "Board_team" VALUES (6,6)
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```

INSERT INTO "Board_team" VALUES (6,1)
INSERT INTO "Board_team" VALUES (6,8)
INSERT INTO "Board_team" VALUES (6,9)
INSERT INTO "Board_team" VALUES (6,10)
INSERT INTO "Board_team" VALUES (6,11)

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--- COMMENTS ---
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INSERT INTO "Comment" (comment, date, id_user, id_task) VALUES ('SFH7050 já
não pode ser utilizado!', TIMESTAMP '2018/03/25 12:50:04', 1, 3)
INSERT INTO "Comment" (comment, date, id_user, id_task) VALUES ('Não está a
ser possível fazer o download da base de dados', TIMESTAMP '2018/03/19
19:24:34', 3, 5)
INSERT INTO "Comment" (comment, date, id_user, id_task) VALUES ('Ver
apontamentos da aula prática!', TIMESTAMP '2018/03/27 17:58:02', 20, 8)

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--- MEETINGS ---
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INSERT INTO "Meeting" (date, place, id_board) VALUES (TIMESTAMP '2018/04/10
11:00:00', 'Departamento de Bioengenharia', 1)
INSERT INTO "Meeting" (date, place, id_board) VALUES (TIMESTAMP '2018/04/17
09:30:00', 'Departamento de Bioengenharia', 1)
INSERT INTO "Meeting" (date, place, id_board) VALUES (TIMESTAMP '2018/04/07
14:00:00', 'I007', 2)
INSERT INTO "Meeting" (date, place, id_board) VALUES (TIMESTAMP '2018/06/20
14:00:00', 'I007', 3)
INSERT INTO "Meeting" (date, place, id_board) VALUES (TIMESTAMP '2018/04/20
15:30:00', 'INESC', 4)
INSERT INTO "Meeting" (date, place, id_board) VALUES (TIMESTAMP '2018/04/23
10:30:00', 'B118', 5)
INSERT INTO "Meeting" (date, place, id_board) VALUES (TIMESTAMP '2018/04/20
10:00:00', 'B005', 6)
INSERT INTO "Meeting" (date, place, id_board) VALUES (TIMESTAMP '2018/04/06
17:00:00', 'Sala de bio', 7)
INSERT INTO "Meeting" (date, place, id_board) VALUES (TIMESTAMP '2018/04/10
15:00:00', 'B223', 8)

```



```
INSERT INTO "Meeting" (date, place, id_board) VALUES (TIMESTAMP '2018/04/13
09:20:00', 'B019', 9)
```

```
--- MESSAGE ---
-----
```

```
INSERT INTO "Message" (date, message, id_user, id_project) VALUES (TIMESTAMP
'2018/04/02 15:02:46', 'Não esquecer que a interface do programa deve ser
feita em Java!!', 3, 1)
```

```
INSERT INTO "Message" (date, message, id_user, id_project) VALUES (TIMESTAMP
'2018/03/21 10:24:06', 'Ter em conta que o circuito deve ser de dimensões
reduzidas, uma vez que deve ser portátil', 1, 2)
```

```
--- PERSONAL EVENTS ---
-----
```

```
INSERT INTO "Personal_event" (date, name, id_user) VALUES (TIMESTAMP
'2018/04/14', 'Aniversário mãe', 1)
INSERT INTO "Personal_event" (date, name, place, id_user) VALUES (TIMESTAMP
'2018/04/10', 'Almoço com o António', 'Casa do António', 2)
INSERT INTO "Personal_event" (date, name, id_user) VALUES (TIMESTAMP
'2018/04/17 13:20:00', 'Ir buscar o João ao Aeroporto', 7)
INSERT INTO "Personal_event" (date, name, id_user) VALUES (TIMESTAMP
'2018/04/21 18:00:00', 'Levar o João ao Aeroporto', 7)
INSERT INTO "Personal_event" (date, name, id_user) VALUES (TIMESTAMP
'2018/04/10 18:30:00', 'Café com a Maria', 5)
INSERT INTO "Personal_event" (date, name, id_user) VALUES (TIMESTAMP
'2018/05/18', 'Visitar a Joana', 5)
INSERT INTO "Personal_event" (date, name, id_user) VALUES (TIMESTAMP
'2018/05/06', 'Dia da mãe!!', 8)
INSERT INTO "Personal_event" (date, name, id_user) VALUES (TIMESTAMP
'2018/05/05', 'Aniversário da Maya', 3)
```

```
--- CONTACT ---
-----
```

```

INSERT INTO "Contact" (id_user, id_contact) VALUES (1,2)
INSERT INTO "Contact" (id_user, id_contact) VALUES (1,3)
INSERT INTO "Contact" (id_user, id_contact) VALUES (1,4)
INSERT INTO "Contact" (id_user, id_contact) VALUES (1,8)
INSERT INTO "Contact" (id_user, id_contact) VALUES (2,3)
INSERT INTO "Contact" (id_user, id_contact) VALUES (2,1)
INSERT INTO "Contact" (id_user, id_contact) VALUES (2,5)
INSERT INTO "Contact" (id_user, id_contact) VALUES (3,16)
INSERT INTO "Contact" (id_user, id_contact) VALUES (4,6)
INSERT INTO "Contact" (id_user, id_contact) VALUES (4,7)
INSERT INTO "Contact" (id_user, id_contact) VALUES (4,9)
INSERT INTO "Contact" (id_user, id_contact) VALUES (4,11)
INSERT INTO "Contact" (id_user, id_contact) VALUES (5,6)
INSERT INTO "Contact" (id_user, id_contact) VALUES (5,9)
INSERT INTO "Contact" (id_user, id_contact) VALUES (6,4)
INSERT INTO "Contact" (id_user, id_contact) VALUES (6,10)
INSERT INTO "Contact" (id_user, id_contact) VALUES (7,11)
INSERT INTO "Contact" (id_user, id_contact) VALUES (8,5)
INSERT INTO "Contact" (id_user, id_contact) VALUES (8,9)

```

```

--- FILE ---
-----

```

```

INSERT INTO "File" (description, path, publish_date, id_user, id_task)
VALUES ('Referências bibliográficas
apneia','https://docs.google.com/document/d/1KZ00yc2JSSUsC3EdrPWqTRZqUhBn4oI
B-IR61YU7EHs/edit' , TIMESTAMP '2018/04/03 10:35:07', 1, 1 )
INSERT INTO "File" (description, path, publish_date, id_user, id_task)
VALUES
('Fotopletismografia','http://www.peb.ufrj.br/teses/Tese0030_2006_03_29.pdf'
, TIMESTAMP '2018/04/03 10:35:07', 1, 2 )
INSERT INTO "File" (description, path, publish_date, id_user, id_task)
VALUES ('Datasheet
SFH7050','https://www.mouser.com/ds/2/311/SFH%207050,%20Lead%20(Pb)%20Free%2
0Product%20-%20RoHS%20Compliant-608232.pdf' , TIMESTAMP '2018/03/21
19:14:44', 1, 3 )
INSERT INTO "File" (description, path, publish_date, id_user, id_task)
VALUES ('Datasheet
TCRT1000','https://www.vishay.com/docs/83752/tcrt1000.pdf' , TIMESTAMP
'2018/03/29 22:51:00', 1, 3 )

```

```

INSERT INTO "File" (description, path, publish_date, id_user, id_task)
VALUES ('EEG', 'https://pt.wikipedia.org/wiki/Eletroencefalografia' ,
TIMESTAMP '2018/03/17 20:58:12', 8, 6 )
INSERT INTO "File" (description, path, publish_date, id_user, id_task)
VALUES
('EEG', 'https://docs.google.com/forms/d/e/1FAIpQLSfa60Ny5pTFxZGpUwyCp6_LiL5h
KLWMZExoCpicrAqdcdr2uw/viewform' , TIMESTAMP '2018/03/03 17:49:22', 20, 9 )

```

```

--- NOTIFICATION ---
-----

```

```

INSERT INTO "Notification" (date, notification, read, id_user) VALUES
(TIMESTAMP '2018/03/04', 'Foi adicionado a um novo projeto "Hypnos" ',
false, 3)
INSERT INTO "Notification" (date, notification, read, id_user) VALUES
(TIMESTAMP '2018/03/04', 'Foi adicionado a um novo projeto "Hypnos" ',
false, 8)
INSERT INTO "Notification" (date, notification, read, id_user) VALUES
(TIMESTAMP '2018/03/02', 'Um utilizador deseja adiciona um novo colaborador
ao seu projeto "Estudo da doença de Alzheimer através de análise de imagens
do cérebro" ', false, 3)
INSERT INTO "Notification" (date, notification, read, id_user) VALUES
(TIMESTAMP '2018/03/04', 'Utilizador "Joana Monteiro" pediu para o adicionar
à sua lista de contactos', false, 6)
INSERT INTO "Notification" (date, notification, read, id_user) VALUES
(TIMESTAMP '2018/03/04', 'Utilizador "Noelle Moran" pediu para o adicionar à
sua lista de contactos', false, 8)

```

```

--- PROGRESS UPDATE ---
-----

```

```

INSERT INTO "Progress_update" (date, new_value, id_user, id_task) VALUES
(TIMESTAMP '2018/04/03 10:40:45', 30, 1, 1)
INSERT INTO "Progress_update" (date, new_value, id_user, id_task) VALUES
(TIMESTAMP '2018/04/03 10:37:23', 60, 3, 2)
INSERT INTO "Progress_update" (date, new_value, id_user, id_task) VALUES
(TIMESTAMP '2018/04/04 11:07:15', 80, 3, 2)

```

```

INSERT INTO "Progress_update" (date, new_value, id_user, id_task) VALUES
(TIMESTAMP '2018/03/21 19:16:35', 50, 1, 3)
INSERT INTO "Progress_update" (date, new_value, id_user, id_task) VALUES
(TIMESTAMP '2018/03/29 22:52:05', 70, 1, 3)
INSERT INTO "Progress_update" (date, new_value, id_user, id_task) VALUES
(TIMESTAMP '2018/03/27 14:46:35', 70, 8, 6)
INSERT INTO "Progress_update" (date, new_value, id_user, id_task) VALUES
(TIMESTAMP '2018/03/03 18:35:17', 40, 20, 8)

```

--- PROFILE PICTURES ---

```

INSERT INTO "Profile_picture" (id_user, path) VALUES (1, 'https://encrypted-
tbn0.gstatic.com/images?q=tbn:ANd9GcTsAUelg7yg0mepGMf-
N93hh6E9XrLnKwsKa4YEQ6swhDknk4F9eQ')
INSERT INTO "Profile_picture" (id_user, path) VALUES (2, 'https://encrypted-
tbn0.gstatic.com/images?q=tbn:ANd9GcRHMdytMDJqBYz4eR2PpDUBMepUR7SxtOmPCNdIO5
SUMQ2vdeH8')
INSERT INTO "Profile_picture" (id_user, path) VALUES (3,
'https://cdn4.iconfinder.com/data/icons/green-shopper/1068/user.png')
INSERT INTO "Profile_picture" (id_user, path) VALUES (4,
'http://icons.iconarchive.com/icons/paomedia/small-n-flat/1024/user-male-
icon.png')
INSERT INTO "Profile_picture" (id_user, path) VALUES (5, 'https://encrypted-
tbn0.gstatic.com/images?q=tbn:ANd9GcQMrYqax_J2xys7057n0QcYyBXR-AGNwPGBmaw6j-
xJXHfWwAu5')
INSERT INTO "Profile_picture" (id_user, path) VALUES (6,
'http://wfarm2.dataknet.com/static/resources/icons/set108/b5cdab07.png')
INSERT INTO "Profile_picture" (id_user, path) VALUES (7, 'https://encrypted-
tbn0.gstatic.com/images?q=tbn:ANd9GcQrLV_ettEako62R_lp4RcYFLKo0WKqXKaGpYlTzo
aEeRVZXHnGfw')
INSERT INTO "Profile_picture" (id_user, path) VALUES (8,
'https://365psd.com/images/istock/previews/9353/93539553-flat-vector-avatar-
face-character-person-portrait-user-icon.jpg')
INSERT INTO "Profile_picture" (id_user, path) VALUES (9, 'https://encrypted-
tbn0.gstatic.com/images?q=tbn:ANd9GcQMj091sBeDLzlm9780HyMXWa0c07DnpzPy_CCYoc
3kqX85WGh4Mw')

```

--- PROJECT PICTURES ---

```
INSERT INTO "Project_picture" (id_project, path) VALUES (1,
'https://image.flaticon.com/icons/svg/552/552413.svg')
INSERT INTO "Project_picture" (id_project, path) VALUES (2,
'https://image.flaticon.com/icons/svg/490/490348.svg')
INSERT INTO "Project_picture" (id_project, path) VALUES (3,
'https://image.flaticon.com/icons/svg/40/40488.svg')
INSERT INTO "Project_picture" (id_project, path) VALUES (4,
'https://image.flaticon.com/icons/png/512/228/228437.png')
INSERT INTO "Project_picture" (id_project, path) VALUES (5,
'https://image.flaticon.com/icons/svg/124/124945.svg')
```