

Nama : Izzatunnisa Arwadi
NPM : 1806269726
Kelas : Ekstensi

1. Pendahuluan

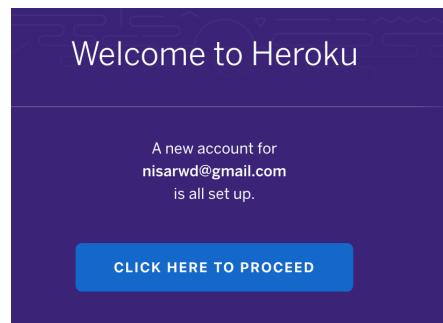
- Sign Up Heroku

The screenshot shows the Heroku sign-up interface. On the left, there are three sections: 'Free account' (Create apps, connect databases and add-on services, and collaborate on your apps, for free.), 'Your app platform' (A platform for apps, with app management & instant scaling, for development and production.), and 'Deploy now' (Go from code to running app in minutes. Deploy, scale, and deliver your app to the world.). The right side contains a form with the following fields:

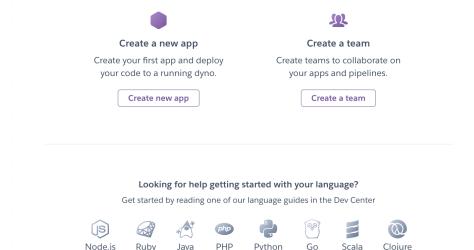
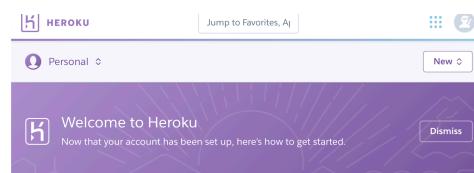
- First name *: Izzatunnisa
- Last name *: Arwadi
- Email address *: nisarwd@gmail.com
- Company name: University of Indonesia
- Role *: Student
- Country *: Indonesia
- Primary development language *: Java

A reCAPTCHA checkbox is present, followed by a 'CREATE FREE ACCOUNT' button. A small note at the bottom states: 'Signing up signifies that you have read and agree to our [Terms of Service](#) and our [Privacy Policy](#)'.

Dilakukan sign up ke Heroku dan akan didapatkan email verifitcation



Ketika link email tersebut di klik maka akan ditampilkan halaman seperti di atas dan click button click here to proceed



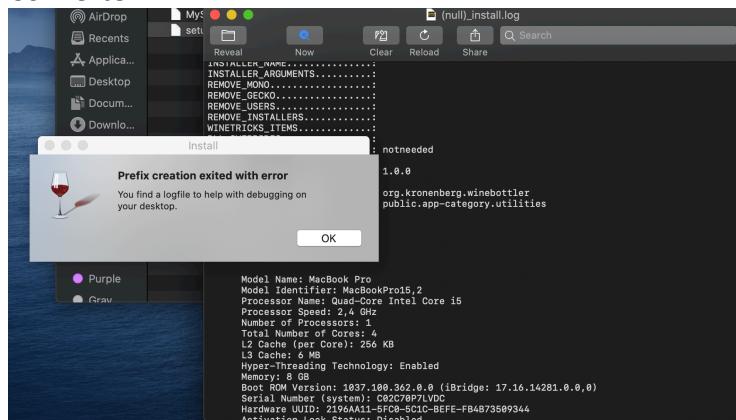
Halaman personal Heroku berhasil ditampilkan

- Heroku CLI

```
[dnid0680101:~ arwadii$ heroku --version  
heroku/7.35.0 darwin-x64 node-v12.13.0  
dnid0680101:~ arwadii$ ]
```

Dilakukan instalasi Heroku CLI

- Converter



Pada macOS instalasi converter dilakukan dengan menggunakan aplikasi wineBottle akan tetapi pada instalasi yang saya lakukan memiliki kendala (error). Sehingga saya menggunakan perintah sql manual.

- Postgresql

```
[dnid0680101:~ arwadii$ postgres --version  
postgres (PostgreSQL) 12.2  
dnid0680101:~ arwadii$ ]
```

Dilakukan instalasi postgresql

2. Mengubah DB

- pom.xml

```
<dependency>  
    <groupId>org.postgresql</groupId>  
    <artifactId>postgresql</artifactId>  
</dependency>
```

Pada pom project spring dilakukan pengubahan dependency menjadi postgresql

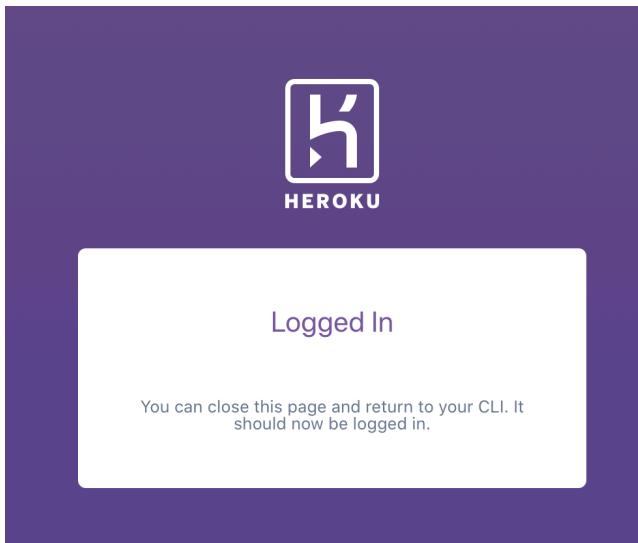
- application.properties

```
# Konfigurasi untuk koneksi PostgreSQL  
spring.datasource.platform=postgresql  
  
# Sesuaikan NAMA_DATABASE dengan nama database anda  
spring.datasource.url=jdbc:postgresql://localhost:5432/tu09?useUnicode=true&useJDBCCompli  
  
# Sesuaikan dengan USERNAME dan PASSWORD mysql anda  
spring.datasource.username=root  
spring.datasource.password=nisa281196  
  
# Optimize query untuk db PostgreSQL  
spring.jpa.database-platform=org.hibernate.dialect.PostgreSQLDialect  
spring.jpa.properties.hibernate.jdbc.lob.non_contextual_creation=true  
  
# Pembuatan database (create || create-drop || validate || update)  
spring.jpa.hibernate.ddl-auto=update
```

Perubahan lain juga dilakukan pada application properties dengan mengubah koneksi, nama database, username, password serta optimize query pada postgresql

3. Deployment aplikasi

- Heroku CLI



Dilakukan perintah Heroku login dengan menggunakan terminal, lalu klik login sehingga terlihat tampilan seperti di atas.

```
[dnid0680101:tutorial-09 arwadii$ git init
Logging in... done
Logged in as nisarwd@gmail.com
dnid0680101:tutorial-09 arwadii$ ]
```

Pada terminal akan ditunjukkan bahwa login telah berhasil

```
[dnid0680101:tutorial-09 arwadii$ git init
Reinitializing existing Git repository in /Users/arwadii/Documents/workspace-spring-tool-suite-4-4.6.0.RELEASE/tutorial-09/.git/
[dnid0680101:tutorial-09 arwadii$ git add .
[master b6274e1] initial commit
 8 files changed, 102 insertions(+), 2 deletions(-)
  create mode 100644 tutorial-09/.classpath
  create mode 100644 tutorial-09/.project
  create mode 100644 tutorial-09/.settings/org.eclipse.core.resourcesprefs
  create mode 100644 tutorial-09/.settings/org.eclipse.jdt.apt.core.preferences
  create mode 100644 tutorial-09/.settings/org.eclipse.jdt.core.preferences
  create mode 100644 tutorial-09/.settings/org.eclipse.m2e.core.preferences
  create mode 100644 tutorial-09/.settings/org.springframework.ide.eclipse.preferences]
```

Dilakukan perintah commit terhadap project

```
[dnid0680101:tutorial-09 arwadii$ heroku create izza-tutorial-09
> Warning: heroku update available from 7.35.0 to 7.40.0.
Creating ⚡ izza-tutorial-09... done
https://izza-tutorial-09.herokuapp.com/ | https://git.heroku.com/izza-tutorial-09.git
```

Dilakukan pembuatan aplikasi, ketika nama aplikasi tidak bentrok maka akan ditampilkan seperti di atas

```
[dnid0680101:tutorial-09 arwadii$ heroku git:remote -a izza-tutorial-09
> Warning: heroku update available from 7.35.0 to 7.40.0.
set git remote heroku to https://git.heroku.com/izza-tutorial-09.git
```

Dilakukan pengubahan remote access git

```

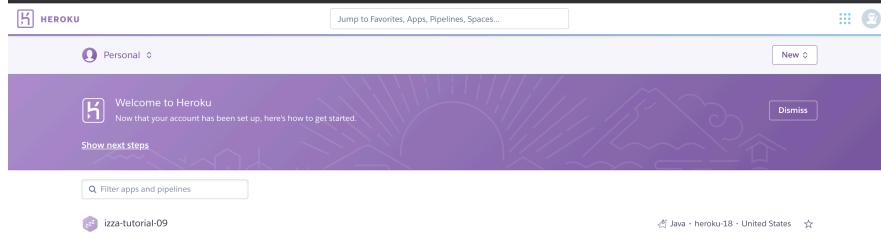
tutorial-09 — bash — 80x24
6-0.0.1-SNAPSHOT.pom
remote: [INFO] -----
remote: [INFO] BUILD SUCCESS
remote: [INFO] -----
remote: [INFO] Total time: 05:11 min
remote: [INFO] Finished at: 2020-05-12T10:01:53Z
remote: [INFO] -----
remote: -----> Discovering process types
remote: Procfile declares types → (none)
remote: Default types for buildpack → web
remote:
remote: -----> Compressing...
remote: Done: 84M
remote: -----> Launching...
remote: Released v5
remote: https://izza-tutorial-09.herokuapp.com/ deployed to Heroku
remote:
remote: Verifying deploy... done.
To https://git.heroku.com/izza-tutorial-09.git
 * [new branch] master -> master
dnid0680101:tutorial-09 arwadii$ 

```

Dilakukan push directory project ketika berhasil akan ditampilkan seperti halaman di atas.

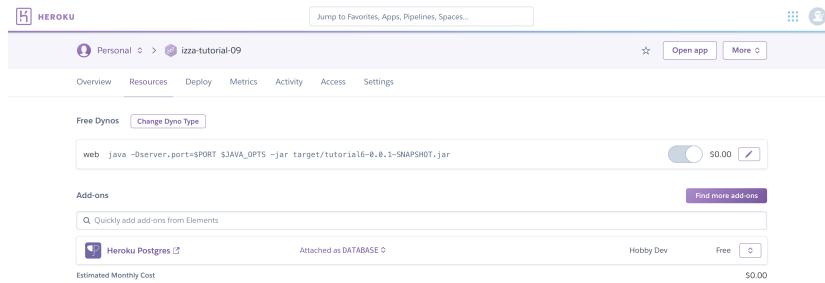
4. Deployment Database

- Aplikasi



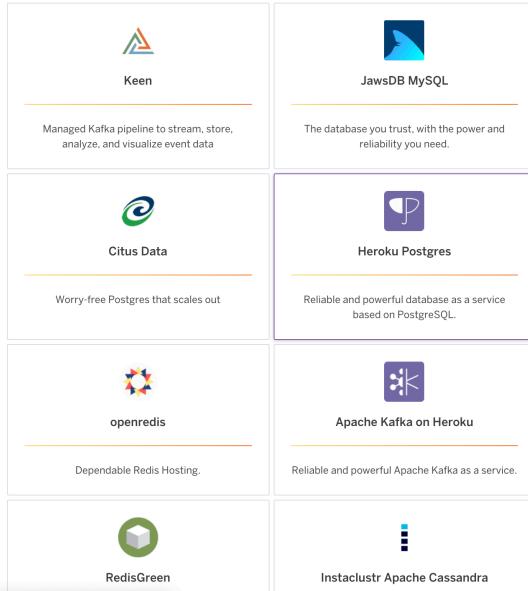
Dilakukan akses ke website Heroku dan dilakukan klik pada aplikasi yang telah dibuat sebelumnya

- Resource



Pilih tab resource dan akan ditampilkan seperti halaman di atas dan klik button find more add-ons

- Heroku postgres



Cari Heroku Postgres dan lakukan klik

- Install

The screenshot shows the Heroku Add-ons page with the Heroku Postgres add-on selected. The card includes:

- Heroku Postgres**: Reliable and powerful database as a service based on PostgreSQL. Starting at \$0/mo.
- Connect, Use, and Develop**: Databases are multi-ingress: use them from any cloud, PaaS, or your local computer. It's easy to connect from common languages.
- Scale and Grow**: Scale vertically by choosing from a range of plans. Plans differ based on the size of their hot data-set, the portion of data available.
- Install Heroku Postgres** button
- QUICK LINKS**: Add-on Details, Region Availability, Plans & Pricing, Documentation.
- SHAREABLE DETAILS**: Shareable Across Apps, Multiple Installs/App.
- ADD-ON CATEGORY**: Data Stores.
- LANGUAGE SUPPORT**: CLOJURE, GO, JAVA, NODE, PHP, PYTHON, RUBY, SCALA.

Dilakukan klik pada button install Heroku Postgres

- Pilih aplikasi

The screenshot shows the Heroku Add-on provisioning page for the Heroku Postgres add-on:

- Add-on plan**: Hobby Dev - Free
- App selection**: Heroku Postgres → izza-tutorial-09 Personal apps
- Agreement**: By provisioning this add-on, I agree to the [Terms of Service](#).
- Provision add-on** button

Pilih aplikasi yang telah dibuat

- Pilih database

The screenshot shows the Heroku dashboard for the 'izza-tutorial-09' application. At the top, there's a navigation bar with links for Overview, Resources, Deploy, Metrics, Activity, Access, and Settings. Below this, a 'Free Dynos' section displays a command: 'web java -Dserver.port=\$PORT \$JAVA_OPTS -jar target/tutorial16-0.0.1-SNAPSHOT.jar'. A toggle switch indicates the dyno is off, and the cost is \$0.00. The 'Add-ons' section shows a single entry: 'The add-on heroku-postgresql has been installed. Check out the documentation in its Dev Center article to get started.' Below this, there's a search bar and a list of available add-ons, including 'Heroku Postgres' which is currently attached.

Dilakukan pemilihan database Heroku_Postgresql_Pink

- Setting

The screenshot shows the Heroku Datastore settings page for the 'postgresql-tapered-98162' database. The top navigation bar includes links for Overview, Durability, Settings (which is selected), and Dataclips. Under the 'ADMINISTRATION' section, there are two main buttons: 'Reset Database...' and 'Destroy Database...'. Below these buttons, there are descriptions: 'Get credentials for manual connections to this database.' and 'Reset the database to its originally-provisioned state, deleting all data inside it.' and 'Destroys the database and all of the data inside it.'

Akan ditampilkan halaman seperti di atas, lalu klik vie credentials

- Credential

The screenshot shows the 'Database Credentials' dialog box. It contains a 'Cancel' button and a note: 'Get credentials for manual connections to this database.' Below this, a warning message states: 'Please note that **these credentials are not permanent**. Heroku rotates credentials periodically and updates applications where this database is attached.' The dialog lists several connection parameters:

Host	ec2-3-91-139-25.compute-1.amazonaws.com
Database	dces4o8nb9uk2n
User	cptyhmeoaokdqf
Port	5432
Password	ef6c939d084c3be5cc5e34c9e5da6222f0f640400b18fe500c7c3e25901c85a
URI	postgres://cptyhmeoaokdqf:ef6c939d084c3be5cc5e34c9e5da6222f0f640401
Heroku CLI	heroku pg:psql postgresql-tapered-98162 --app izza-tutorial-09

Ditampilkan credential seperti di atas, lalu lakukan copy pada bagian Heroku CLI

- Postgresql

```
[dnid0680l01:tutorial-09 arwadii$ heroku pg:psql postgresql-tapered-98162 --app i]
zsa-tutorial-09
  >   Warning: heroku update available from 7.35.0 to 7.40.0.
--> Connecting to postgresql-tapered-98162
psql (12.2)
SSL connection (protocol: TLSv1.2, cipher: ECDHE-RSA-AES256-GCM-SHA384, bits: 25
6, compression: off)
Type "help" for help.

izza-tutorial-09::DATABASE=> ■
```

Lakukan paste ke dalam terminal dan akan ditampilkan hasil seperti di atas. Hasil di atas merupakan koneksi ke postgresql

```
izza-tutorial-09::DATABASE=> CREATE TABLE "pilot" ( "id" BIGSERIAL NOT NULL ,
izza-tutorial-09::DATABASE(>   "fly_hour" INTEGER NOT NULL ,
izza-tutorial-09::DATABASE(>   "license_number" VARCHAR(50) NOT NULL ,
izza-tutorial-09::DATABASE(>   "name" VARCHAR(50) NOT NULL ,
izza-tutorial-09::DATABASE(>   PRIMARY KEY ("id"),
izza-tutorial-09::DATABASE(>   UNIQUE ("license_number")
izza-tutorial-09::DATABASE(> );
```

Lakukan penulisan query create table pilot

```
izza-tutorial-09::DATABASE=> CREATE TABLE "flight" ( "id" BIGSERIAL NOT NULL ,
izza-tutorial-09::DATABASE(>   "destination" VARCHAR(100) NOT NULL ,
izza-tutorial-09::DATABASE(>   "flight_number" VARCHAR(50) NOT NULL ,
izza-tutorial-09::DATABASE(>   "origin" VARCHAR(100) NOT NULL ,
izza-tutorial-09::DATABASE(>   "time" DATE NOT NULL ,
izza-tutorial-09::DATABASE(>   "pilot_license_number" VARCHAR(255) NOT NULL ,
izza-tutorial-09::DATABASE(>   PRIMARY KEY ("id"),FOREIGN KEY ("pilot_license_nu
mber") REFERENCES "pilot" ( "license_number" ) ON UPDATE RESTRICT ON DELETE CASC
ADE
izza-tutorial-09::DATABASE(> );
```

Lakukan penulisan query create table flight

```
izza-tutorial-09::DATABASE=> CREATE INDEX "flight_FK3la8bbsoy9ck6byoqa6bntw1"
N "flight" ("pilot_license_number");
CREATE INDEX
```

Serta dilakukan pembuatan index pada license number

```
[izza-tutorial-09::DATABASE=> \d
      List of relations
 Schema |     Name      |   Type   |      Owner
-----+---------------+----------+--------------
 public |   flight     |  table   | cptyhmeoaokdqf
 public | flight_id_seq | sequence | cptyhmeoaokdqf
 public |   pilot      |  table   | cptyhmeoaokdqf
 public | pilot_id_seq | sequence | cptyhmeoaokdqf
(4 rows)
```

Untuk melihat apakah table telah berhasil dibuat, dilakukan perintah /d dan hasil dapat ditampilkan seperti di atas.

```
[izza-tutorial-09::DATABASE=> select * from pilot;
 id | fly_hour | license_number | name
----+-----+-----+-----
  1 |      139 |       1234        | Anto
(1 row)
```

Lakukan perintah select dan lihat hasil dari penggunaan query. Apabila terbaca maka akan ditampilkan hasil querinya

- Spring Tool Suite

```
# Sesuaikan NAMA_DATABASE dengan nama database  
spring.datasource.url=jdbc:postgresql://{Host}  
  
# Sesuaikan dengan USERNAME dan PASSWORD mysql  
spring.datasource.username={User}  
spring.datasource.password={Password}
```

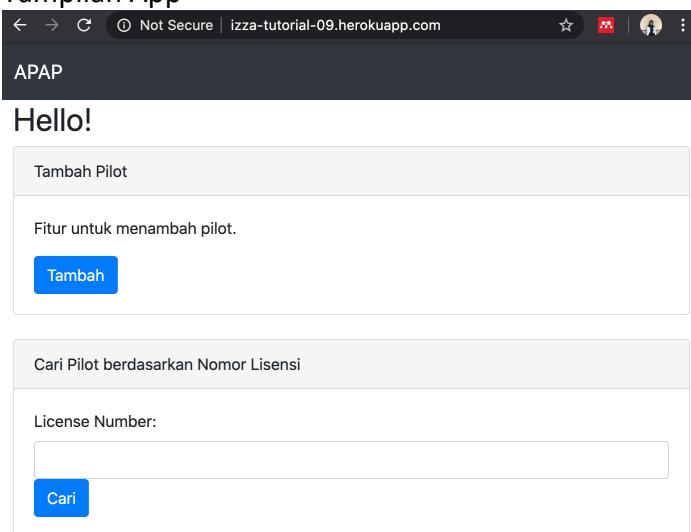
Pada STS dilakukan pengubahan nama database serta username & password

```
remote:      [INFO]  
remote:      [INFO] --- maven-install-plugin:2.5.2:install (default-install) @  
tutorial6 ---  
remote:      [INFO] Installing /tmp/build_197d0c1259ea0eca1bd1f1d2301fd954/tar  
get/tutorial6-0.0.1-SNAPSHOT.jar to /app/tmp/cache/.m2/repository/com/apap/tutor  
ial6/0.0.1-SNAPSHOT/tutorial6-0.0.1-SNAPSHOT.jar  
remote:      [INFO] Installing /tmp/build_197d0c1259ea0eca1bd1f1d2301fd954/pom  
.xml to /app/tmp/cache/.m2/repository/com/apap/tutorial6/0.0.1-SNAPSHOT/tutorial  
6-0.0.1-SNAPSHOT.pom  
remote:      [INFO] -----  
-----  
remote:      [INFO] BUILD SUCCESS  
remote:      [INFO] -----  
-----  
remote:      [INFO] Total time:  6.644 s  
remote:      [INFO] Finished at: 2020-05-12T12:15:29Z  
remote:      [INFO] -----  
-----  
remote: -----> Discovering process types  
remote:   Procfile declares types      -> (none)  
remote:   Default types for buildpack -> web  
remote:  
remote: -----> Compressing...  
remote:   Done: 84M  
remote: -----> Launching...  
remote:   Released v8  
remote:   https://izza-tutorial-09.herokuapp.com/ deployed to Heroku  
remote:  
remote: Verifying deploy... done.  
To https://git.heroku.com/izza-tutorial-09.git  
  9415193..e5e1a74  master -> master  
dnid0680101:tutorial-09 arwadii$ █
```

Setelah pengeditan pada project dilakukan, lakukan perintah commit dan push.

Ketika push berhasil, akan ditampilkan seperti di atas

- Tampilan App



The screenshot shows a browser window with the URL izza-tutorial-09.herokuapp.com/. The page displays a simple "Hello!" message. Below it is a modal window titled "Tambah Pilot". The modal contains the text "Fitur untuk menambah pilot." and a blue "Tambah" button. At the bottom of the modal is a search bar with the placeholder "Cari Pilot berdasarkan Nomor Licensi" and a "Cari" button. The browser's address bar shows the full URL.

Lakukan akses pada halaman nama aplikasi disertai dengan herokuapp.com dan dapat ditampilkan halaman seperti di atas.