



# 쓰모(帽)있는 개발자

(온라인 통합개발환경)



"개발자 부족 계속 됩니다...학위 없어도 문제 없어요"

[인터뷰] 박재성 우아한테크코스 이사

배윤경 기자 | 입력 : 2021.04.10 13:30:28 수정 : 2021.04.11 10:13:32  4

20년간 양성된 백만 IT인재는 어디로 갔나

[코리아 ICT정책 톨아보기 ⑥] 인재양성 (하)

컴퓨팅 | 입력 : 2021/05/14 15:14 수정 : 2021/05/15 18:29

인력 부족에...법·경제 전공자도 마다 안해

선호하는 개발자 살펴보니

IT 외에 사내소통 능력 중시  
3년차이상 경력자 위주 선발

우수민 기자 | 입력 : 2021.10.05 17:37:11 수정 : 2021.10.05 20:17:29  0

올해만 1만명 부족...뺏기면 죽는 개발자 쟁탈전

머니투데이 | 이진욱 기자

# 목적

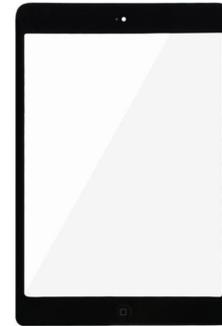
누구나 쉽게

설치없이



언제 어디서든지

어떤 OS, 단말기라도



즉시 바로

내가 원할 때



프로그래밍 언어 학습 및 코드 실행이 가능한 통합개발환경

# 목적

## 기존 개발환경

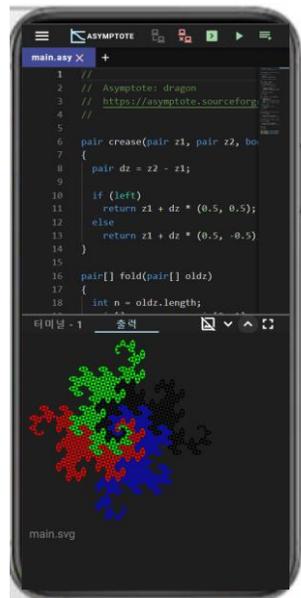
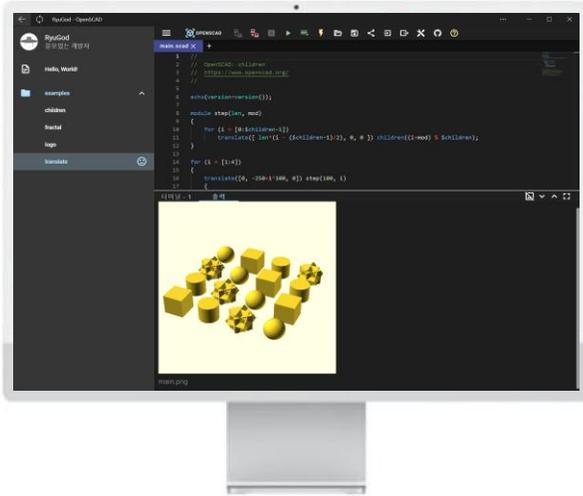


VS

## 온라인 개발환경



# 앱 아키텍처



Web  
Browser

Chrome  
Edge  
Firefox  
...

Application

Apache

Javascript

xterm.js

axios

monaco

templates

express.js

markdown

websocket

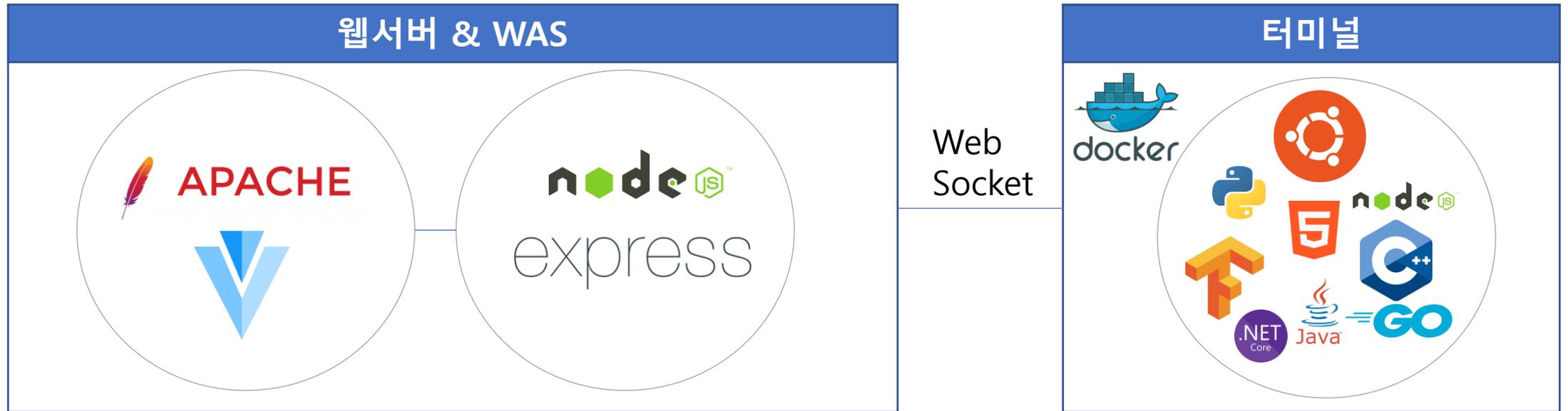
Docker

Ubuntu

compilers

emulators

# 서비스 구성도



- ✓ SPA (Single Page Application) : 웹 페이지를 동적으로 재작성하여 속도를 높임
- ✓ Web Socket : 사용자의 입력을 실시간으로 서버에서 처리하여 응답 표시

# 앱 화면

The image shows a web browser window titled "RyuGod - HTML5". The left sidebar displays the user profile "RyuGod" and a list of project folders: "Hello, World!", "examples", "CSS 애니메이션", "CSS 이미지표시", "D3.js", "Three.js", "드래그앤드랍", "번개", and "번개2". The main area is a code editor for "main.html" with the following code:

```
1 <!--  
2   HTML5 캔버스 번개 예제  
3   출처: https://codepen.io/mcdorli/post/creating-lightnings-with-javascript-and-html5-canvas  
4 -->  
5 <!DOCTYPE html>  
6 <html>  
7 <head>  
8   <style>  
9 body {  
10  background-color: rgb(27, 27, 27);  
11 }  
12  
13 canvas {  
14  background-color: hsl(0, 0%, 10%);  
15  display: block;
```

Below the code editor is a terminal window labeled "터미널" with the heading "출력". The terminal displays a visual output of a lightning bolt animation on a dark background.

# 앱 기능 - 지원언어 500개 이상 (구문강조, 실행예제 포함)

```
kurishin@ubuntu-server: ~/HomePage/contents/ide$ ls
혀영...  aspNet      c3           comal        euphoria     golo         javascript   lolcode      never        phix          rigal        snobol4      uclang
11l     assembly   c89          cone         expect       gosu         jerryscript  loli         newlisp      php           ring         softscript   umka
4th     asymptote caboose      conure       factor       gp           joao         lox          newtonscript pic           rix          solidity     umm
8th     ats        caml         coq          falcon       grace        johnsonscript lua          next         picat        rk           som           umple
a68k    autohotkey carp         cor          fantom       gravity      jolie        luci         nial         picolisp     rockstar    sparkling    unicon
abc     autoit    cassandra   corescript   fe           gri          joy          lumi         nice         pike         roff        spin         upp
abs     avalon    castile     cppscript    felix        groovy       jq           luxury       nickle       pilot        rpl         spitbol     ursa
acpp    awk       cbasic      crystal      fennel       gsl          jquery       m2           nim          pocketlang  rubi        spl          v
ada     b         cbmbasic    csharp       feral        guile        jsish        m3           nit          polyml      ruby        spow         vala
adept   bacon     cc          csmono       ferite       gwbasic      jsonnet      m4           noumenon     pony        rust        sql          vbmono
afnix   baik      cc11        cupl         fexl         gwion        jsp          make         novus        poplog      rutger      sqlserver   vbnet
agda    ballerina cc14        curry       ficus        hack         jstar       mari         nuri         postscript  saffire     squirrel    vbscript
agena   bas       cc17        d            filagree    haskell     julia        masm40       nuua         potion      sass        stanza      verilog
agora   bash     cc2a       dafny        firemonkey  have        jython      masm51       nyx          powershell sather      starlark    vhdl
aheui   basic    cc98        dao          fish         haxe        kenaf        killa        maude        mathics     oak          saurus      storm        vim
aime    battlestar ceylon     darts        flax         hedgehog    hermes       knight       maxc         objc         objon       praat       sbcl        stormscript virgil
aku     bc        chascript  dascript     flix        fluffy      hexi         koka         kona         object      ocaml       octave      pp          scala        stream       wardscript
alan    bcpl     chaos      deno         focal        hla         kona         kos          kotlin       mercury     odin         oforth      ol           puppet       seed7        swipl        wu
aldor   bcpp     chapel     dictu        forth        hope        kos          kotlin       kotlinscript miniscript  ooc          opal        pyret        senegal     tamgu        tamsin       xion
algae   bean     cheddar    dino         fortran      horse64     kotlinscript mirah         miranda      opascal     openscad    python       seq          tasm        tc           xlang
algor   beanshell chezscheme  dmd          fox          huginn      hugo         huo          latro        ldc2         ldpl        lean         leekscript  moonscript  mu           mumps       pagan        racket       skylark     tea          terminalbasic yacas
algor60 befunge  chuck     dogescript   foxely       frege       hugs         hu           latex        lily         limbo       mybasic     myrddin     parasail    parser3      pascal      pawn         perl         pgsql       rexx        sml          terraform   yasm
algorw berry    ciao      dragon        frink        fsharp      fsmono       funl         futhark     icon         idl          levi         lily         limbo       mybasic     myrddin     parasail    parser3      pascal      pawn         perl         pgsql       rexx        sml          terraform   yasm
alice   bf       cil        duck         duckscript   frink       fsharp      fsmono       funl         futhark     icon         idl          levi         lily         limbo       mybasic     myrddin     parasail    parser3      pascal      pawn         perl         pgsql       rexx        sml          terraform   yasm
alma    bhuna    circle     duckscript   frink       fsharp      fsmono       funl         futhark     icon         idl          levi         lily         limbo       mybasic     myrddin     parasail    parser3      pascal      pawn         perl         pgsql       rexx        sml          terraform   yasm
alore   blossom  citrine    dylan        fsharp      fsmono       funl         futhark     icon         idl          levi         lily         limbo       mybasic     myrddin     parasail    parser3      pascal      pawn         perl         pgsql       rexx        sml          terraform   yasm
alta    blue     citron     e            fsmono       funl         futhark     icon         idl          levi         lily         limbo       mybasic     myrddin     parasail    parser3      pascal      pawn         perl         pgsql       rexx        sml          terraform   yasm
amber   bob      clang      easylang     funl         futhark     icon         idl          levi         lily         limbo       mybasic     myrddin     parasail    parser3      pascal      pawn         perl         pgsql       rexx        sml          terraform   yasm
amigae  bonelisp clang-cpp   ec           gambas       gambit      gap          garam        gel          genie       ioke        little      littlelang  livescript  nectar      neko        pepper       perl         pgsql       rexx        sml          terraform   yasm
angelscript boo      clean      egison       gambit      gap          garam        gel          genie       ioke        little      littlelang  livescript  nectar      neko        pepper       perl         pgsql       rexx        sml          terraform   yasm
angular borealis clipper     elan         gap          garam        gel          genie       ioke        little      littlelang  livescript  nectar      neko        pepper       perl         pgsql       rexx        sml          terraform   yasm
ape     boron    clips      elastic       gam          gel          genie       ioke        little      littlelang  livescript  nectar      neko        pepper       perl         pgsql       rexx        sml          terraform   yasm
apl     boson    clojure    elen         gam          gel          genie       ioke        little      littlelang  livescript  nectar      neko        pepper       perl         pgsql       rexx        sml          terraform   yasm
aplus   brat     clover     elisp        genie        ioke        little      littlelang  livescript  nectar      neko        pepper       perl         pgsql       rexx        sml          terraform   yasm
arc     buzz     cmd        elixir       genyris      gluon       gnuplot      go           goat         jasmin      lobster     netrexx     pharo       rhino       snek         ubasic      zkl
argile  bwbasic  cobol      elixir       genyris      gluon       gnuplot      go           goat         jasmin      lobster     netrexx     pharo       rhino       snek         ubasic      zkl
aribas  c        cobolscript elm           gluon       gnuplot      go           goat         jasmin      lobster     netrexx     pharo       rhino       snek         ubasic      zkl
ark     c11     cobra      emerald      gluon       gnuplot      go           goat         jasmin      lobster     netrexx     pharo       rhino       snek         ubasic      zkl
arnoldc c17     coco       emo          gnuplot      go           goat         jasmin      lobster     netrexx     pharo       rhino       snek         ubasic      zkl
arrow   c18     coconut    erlang       go           goat         jasmin      lobster     netrexx     pharo       rhino       snek         ubasic      zkl
arturo  c2      coffee     esterel     goat         jasmin      lobster     netrexx     pharo       rhino       snek         ubasic      zkl
aspectj c2x     colm      eta          goby         java        logo         netrexx     pharo       rhino       snek         ubasic      zkl
```

# 앱 기능 - 복사/붙여넣기로 테스트 URL 연결

## 연산자 오버로딩 질문입니다(c++)

연산자 오버로딩을 사용할때, 피연산자가 되는 클래스의 인스턴스를 생성한 생성자가 파라미터 값을 받지 않을경우 오류가 발생 합니다 왜 그런건가요?

답변 1

함수형으로 선언한 변수를 일반 변수로 수정하세요.



신히  873  
2021-08-06 07:57:20

```
int main()
{
    srand(time(0));

    Matrix f;
    Matrix v;
    Matrix c = f+v;
}
```



코드 테스트 해보기 [↗](#)



# 앱 기능 - 오류 추적

```
← ↻ RyuGod - D(GNU) ... - □ ×  
☰ D(GNU) 🗑️ 🗑️ ▶️ ▶️ ≡ ⚡ 📁 📄 🔗 📄 📄 ✂️ 🔄 ?  
main.d × +  
2   D언어: FizzBuzz 예제  
3   http://www.rosettacode.org/  
4   */  
5  
6   import std.stdio, std.algorithm, std.conv;  
7   main.d:11:16: error: expression expected, not '%'  
8   main.d:11:14: error: found '15' when expecting ')'  
9  
10  main.d:11:21: error: found ')' instead of statement  
11  if (!( % 15))  
12      "FizzBuzz".writeln;  
13  else if (!(i % 3))  
14      "Fizz".writeln;  
15  else if (!(i % 5))  
16      "Buzz".writeln;  
17  else  
18      i.writeln;  
19  }
```

터미널 - 3    출력

```
main.d:11:14: error: found '15' when expecting ')'  
  11 |         if (!( % 15))  
      |                ^  
main.d:11:21: error: found ')' instead of statement  
  11 |         if (!( % 15))  
      |                ^  
ryugod@ryugod-server:~$
```

# 앱 기능 - OS 에뮬레이션 (DOS, Windows 등)

The image shows a DOS emulator window titled '터미널 - 1' (Terminal - 1) with a menu bar (File, Edit, View, Search, Run, Debug, Options, Help) and a file name 'MAIN.BAS'. The program code is as follows:

```
REM
REM QuickBasic: Hello, World!
REM
CLS
PRINT "Hello, World!"
```

The terminal output shows a directory listing for 'c:\windows' with the following details:

```
2021-06-23 오후 10:53 <DIR> Include
2021-06-23 오후 10:53 <DIR> Lib
2000-01-31 오전 5:00 15,095 license.txt
2000-01-31 오전 5:00 4,510 readme.txt
2 files 19,605 bytes
7 directories 147,600,764,928 bytes free
```

Subsequent commands and output:

```
c:\bcc55>cd c:\windows
c:\windows>dir /w
드라이브 c는 레이블을 가지고 있지 않습니다.
볼륨 시리얼 번호: 0000-0000

Directory of c:\windows

[.]          [..]          [command]     explorer.exe  [Fonts]
[help]       hh.exe        [inf]         [logs]       notepad.exe
regedit.exe  rundll.exe    [system]     system.ini    [system32]
[tasks]      [temp]        [twain_32]    twain_32.dll  twain.dll
winhelp.exe  winhlp32.exe [winsxs]
10 files    1,184,664 bytes
13 directories 147,600,760,832 bytes free
```

The terminal prompt is 'c:\windows>'.

# 앱 기능 - 소스공유 (URL 클립보드, QR코드)

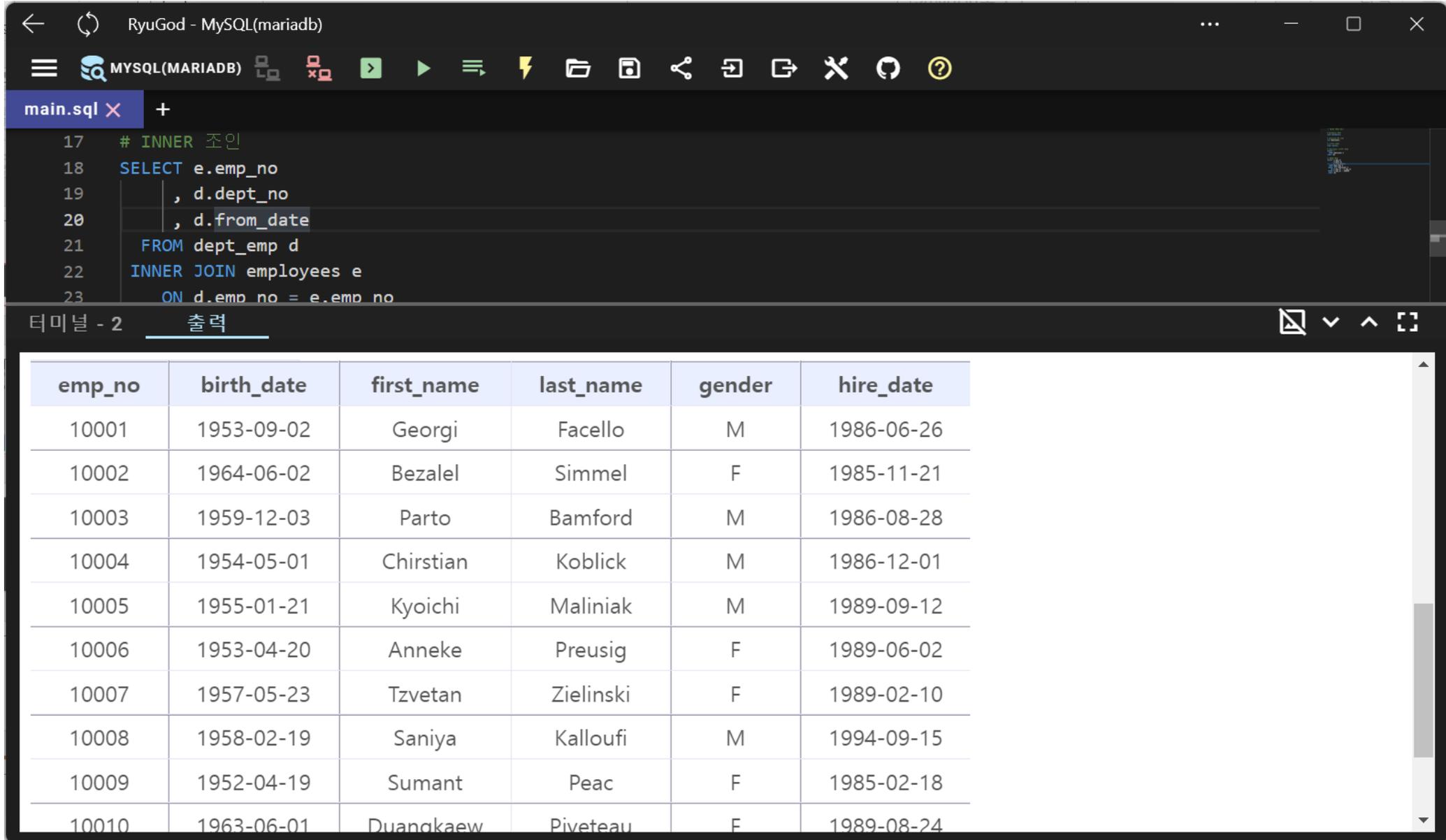


# 앱 실행예제 - 파이썬 (텐서플로)

```
RyuGod - Python3
PYTHON3
main.py X +
4 import tensorflow as tf
5
6 mnist = tf.keras.datasets.mnist
7
8 (x_train, y_train), (x_test, y_test) = mnist.load_data()
9 x_train, x_test = x_train / 255.0, x_test / 255.0
10

터미널 - 2 출력
2021-11-28 15:56:13.262554: I tensorflow/compiler/mlir/mlir_graph_optimization_pass.cc:180] None of the MLIR
  Optimization Passes are enabled (registered 2)
2021-11-28 15:56:13.289782: I tensorflow/core/platform/profile_utils/cpu_utils.cc:114] CPU Frequency: 200000
  0000 Hz
Epoch 1/5
469/469 [=====] - 5s 9ms/step - loss: 0.6722 - accuracy: 0.8007
Epoch 2/5
469/469 [=====] - 4s 9ms/step - loss: 0.2111 - accuracy: 0.9404
Epoch 3/5
469/469 [=====] - 4s 9ms/step - loss: 0.1518 - accuracy: 0.9560
Epoch 4/5
469/469 [=====] - 4s 9ms/step - loss: 0.1212 - accuracy: 0.9655
Epoch 5/5
469/469 [=====] - 4s 9ms/step - loss: 0.1024 - accuracy: 0.9697
2021-11-28 15:56:35.844931: W tensorflow/core/framework/cpu_allocator_impl.cc:80] Allocation of 31360000 exc
  eeds 10% of free system memory.
313/313 - 1s - loss: 0.0894 - accuracy: 0.9723
ryugod@ryugod-server:~$
```

# 앱 실행예제 - MySQL



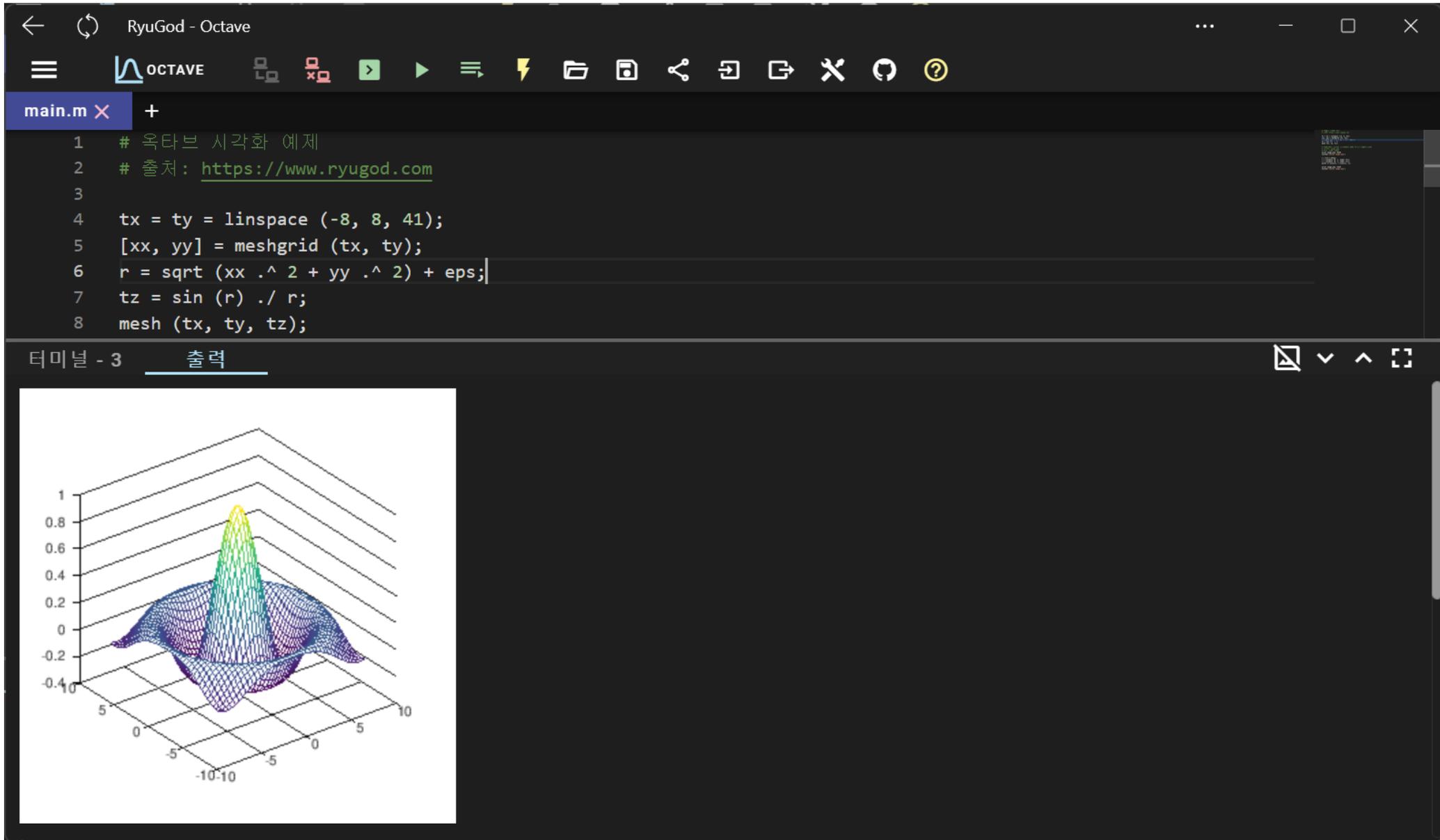
The screenshot shows a MySQL IDE window titled "RyuGod - MySQL(mariadb)". The main editor displays a SQL query with line numbers 17 through 23. The query is as follows:

```
17 # INNER 조인
18 SELECT e.emp_no
19       , d.dept_no
20       , d.from_date
21 FROM dept_emp d
22 INNER JOIN employees e
23 ON d.emp_no = e.emp_no
```

Below the editor, a terminal window titled "터미널 - 2" shows the output of the query. The output is a table with 6 columns: emp\_no, birth\_date, first\_name, last\_name, gender, and hire\_date. The table contains 10 rows of data.

emp_no	birth_date	first_name	last_name	gender	hire_date
10001	1953-09-02	Georgi	Facello	M	1986-06-26
10002	1964-06-02	Bezalel	Simmel	F	1985-11-21
10003	1959-12-03	Parto	Bamford	M	1986-08-28
10004	1954-05-01	Chirstian	Koblick	M	1986-12-01
10005	1955-01-21	Kyoichi	Maliniak	M	1989-09-12
10006	1953-04-20	Anneke	Preusig	F	1989-06-02
10007	1957-05-23	Tzvetan	Zielinski	F	1989-02-10
10008	1958-02-19	Saniya	Kalloufi	M	1994-09-15
10009	1952-04-19	Sumant	Peac	F	1985-02-18
10010	1963-06-01	Duangkaew	Piveteau	F	1989-08-24

# 앱 실행예제 - 옥타브 (매트랩)



The image shows a screenshot of the Octave IDE interface. The top window displays a MATLAB script named `main.m` with the following code:

```
1 # 옥타브 시각화 예제
2 # 출처: https://www.ryugod.com
3
4 tx = ty = linspace (-8, 8, 41);
5 [xx, yy] = meshgrid (tx, ty);
6 r = sqrt (xx .^ 2 + yy .^ 2) + eps;
7 tz = sin (r) ./ r;
8 mesh (tx, ty, tz);
```

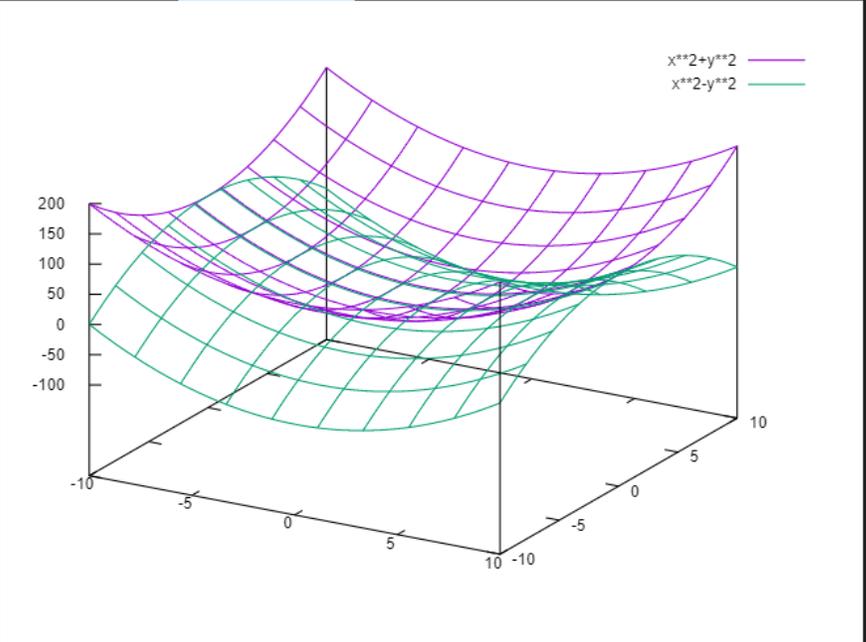
Below the code editor, the terminal window shows the output of the script, which is a 3D mesh plot. The plot features a central peak at the origin, colored with a gradient from blue at the base to yellow at the top. The x and y axes range from -10 to 10, and the z-axis ranges from -0.4 to 1.0.

# 앱 실행예제 - 그누플롯

RyuGod - Gnuplot

```
1 #  
2 # Gnuplot(그누플롯) 3D 플롯 예제  
3 # 출처: https://rosettacode.org/  
4 #  
5  
6 splot x**2+y**2, x**2-y**2
```

터미널 - 3 출력



main.svg

The image shows a terminal window with a Gnuplot script and its output. The script defines two 3D surfaces: a purple paraboloid  $x^2 + y^2$  and a green saddle surface  $x^2 - y^2$ . The terminal output displays a 3D plot of these two surfaces. The x and y axes range from -10 to 10, and the z-axis ranges from -100 to 200. The purple surface is a paraboloid opening upwards, and the green surface is a saddle shape. The plot is titled 'main.svg'.

# 기대효과

## 개발자 관점

- 단위테스트 수행 검증 용이로 품질 고도화
- 자신이 만든 코드를 **다른 개발자와 공유**하여 쉽게 검증이 가능함

## 학문적 관점

- 500개가 넘는 컴파일러와 인터프리터 등의 언어에 대해 비교와 분석이 가능
- 언어별 장단점을 직접 실행해보며 **새로운 언어 설계 시에 참고**

## 학습자 관점

- 프로그래밍 언어, 알고리즘, 빅데이터, 인공지능 등 학업 수행 시 **별도의 환경설정 없이 실습이 가능**하여 학업에 집중 가능
- 코드의 이상동작, 오류 등에 대하여 쉽게 커뮤니티에 공유하고 도움 요청이 가능

## 패스-타 활용 관점

- 사용자 수에 따라 **동적으로 리소스 할당**이 가능함
- 패스타의 장점을 이용하여 여러 학교, 학원, 개인이 직접 환경을 만들고 사용

# 향후 계획



- ✓ 소스작성/실행 내용 실시간 공유 기능 추가



- ✓ 전체 소스 공개 (**Open source**)
- ✓ 개인별 깃허브 소스 저장/불러오기



- ✓ 즉시 설치 가능한 도커 이미지 공유



- ✓ 파스타 설정환경 연동
- ✓ 파스타 개발환경 연동



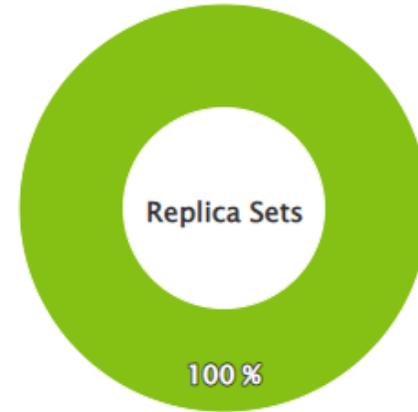
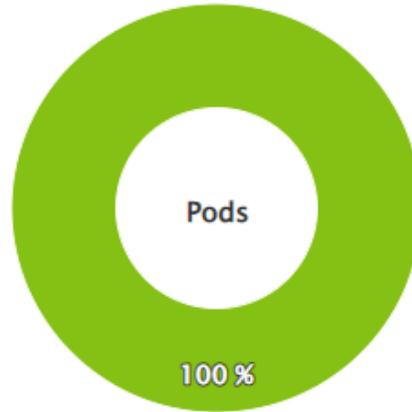
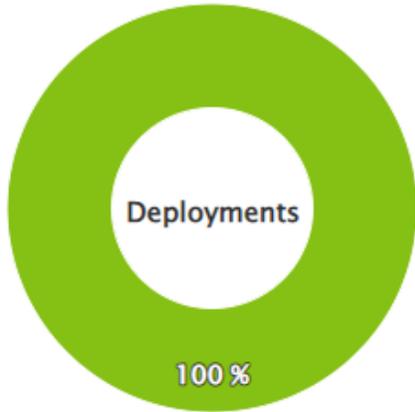
CaaS



Workloads > Overview

## Overview

● Running ● Failed ● Pending ● Succeeded



NHN 오픈 파스타

## Deployments



Name ▾

Namespace

Labels

Pods

Created on ▾

Images

✓ ryugod-app

paas-4963b00c-6bda-45f7-...

app:ryugod-app

1 / 1

2021-11-21 12:24:36

ryugat/ryugod\_web:v1.7