gRPC

JDK : 11

SDK : 2.13.15

SBT : 1.10.5

- build.sbt
    - 변경

```
ThisBuild / version := "0.1.0-SNAPSHOT"
ThisBuild / scalaVersion := "2.13.15"

lazy val root = (project in file("."))
  .settings(
    name := "untitled",
    libraryDependencies ++= Seq(
      "com.thesamet.scalapb" %% "scalapb-runtime-grpc" % scal
      "io.grpc" % "grpc-netty-shaded" % scalapb.compiler.Vers
      "com.google.protobuf" % "protobuf-java" % "3.21.12"
    ),
    Compile / PB.targets := Seq(
      scalapb.gen(flatPackage = true) -> (Compile / sourceMan
    )
  )
```

- project/scaapb.sbt
    - 생성

```
addSbtPlugin("com.thesamet" % "sbt-protoc" % "1.0.6")

libraryDependencies += "com.thesamet.scalapb" %% "compilerplu
```

- src/main/protobuf/hello.proto
    - 생성

```
syntax = "proto3";

package hello;

service Greeter {
  rpc SayHello (HelloRequest) returns (HelloReply) {}
}

message HelloRequest {
  string name = 1;
}

message HelloReply {
  string message = 1;
}
```

- sbt실행
    - compile입력

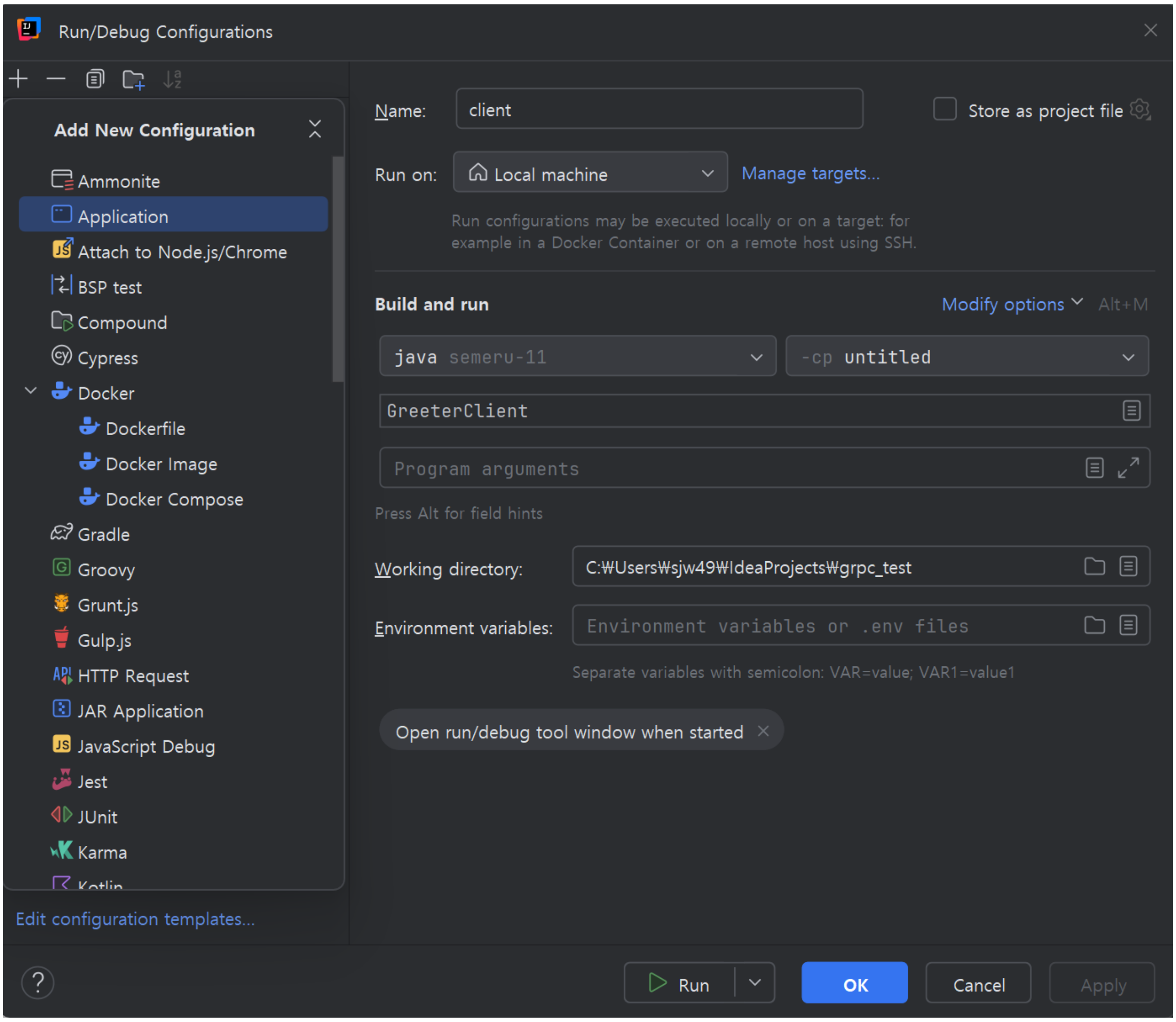
- src/main/scala/GreeterServer.scala
    - 생성

```
import io.grpc.ServerBuilder
import scala.concurrent.{ExecutionContext, Future}
import hello._

object GreeterServer {
  def main(args: Array[String]): Unit = {
    val server = new GreeterServer(ExecutionContext.global)
    server.start()
    server.blockUntilShutdown()
  }
}

class GreeterServer(executionContext: ExecutionContext) { sel
  private[this] var server: io.grpc.Server = null

  def start(): Unit = {
    server = ServerBuilder.forPort(50051)
      .addService(GreeterGrpc.bindService(new GreeterImpl, ex
      .build()
      .start()
    println("Server started, listening on " + 50051)
    sys.addShutdownHook {
      System.err.println("*** shutting down gRPC server since
      self.stop()
      System.err.println("*** server shut down")
    }
  }

  def stop(): Unit = {
    if (server != null) {
      server.shutdown()
    }
  }

  def blockUntilShutdown(): Unit = {
    if (server != null) {
      server.awaitTermination()
    }
  }

  class GreeterImpl extends GreeterGrpc.Greeter {
    override def sayHello(req: HelloRequest): Future[HelloRep
      val reply = HelloReply(message = "Hello " + req.name)
      Future.successful(reply)
    }
  }
}
```

- src/main/scala/GreeterClient.scala
  - 생성

```
import io.grpc.ManagedChannelBuilder
import scala.concurrent.{Await, Future}
import scala.concurrent.duration._
import hello._

object GreeterClient {
  def main(args: Array[String]): Unit = {
    val channel = ManagedChannelBuilder.forAddress("localhost
      .usePlaintext()
      .build()

    val stub = GreeterGrpc.stub(channel)

    val request = HelloRequest(name = "World")
    val responseFuture: Future[HelloReply] = stub.sayHello(re

    val response = Await.result(responseFuture, 5.seconds)
    println("Greeting: " + response.message)

    channel.shutdownNow()
  }
}
```

- intellij 맨 위 실행 옆 점 3개에서 configuration edit
- 어플리케이션 추가
  - server : 클래스 생성
  - client : 클래스 생성



Run/Debug Configurations

Name: client

☐ Store as project file

Run on: Local machine

Manage targets...

Run configurations may be executed locally or on a target: for example in a Docker Container or on a remote host using SSH.

Build and run

```
java semeru-11
-cp untitled
GreeterClient
Program arguments
```

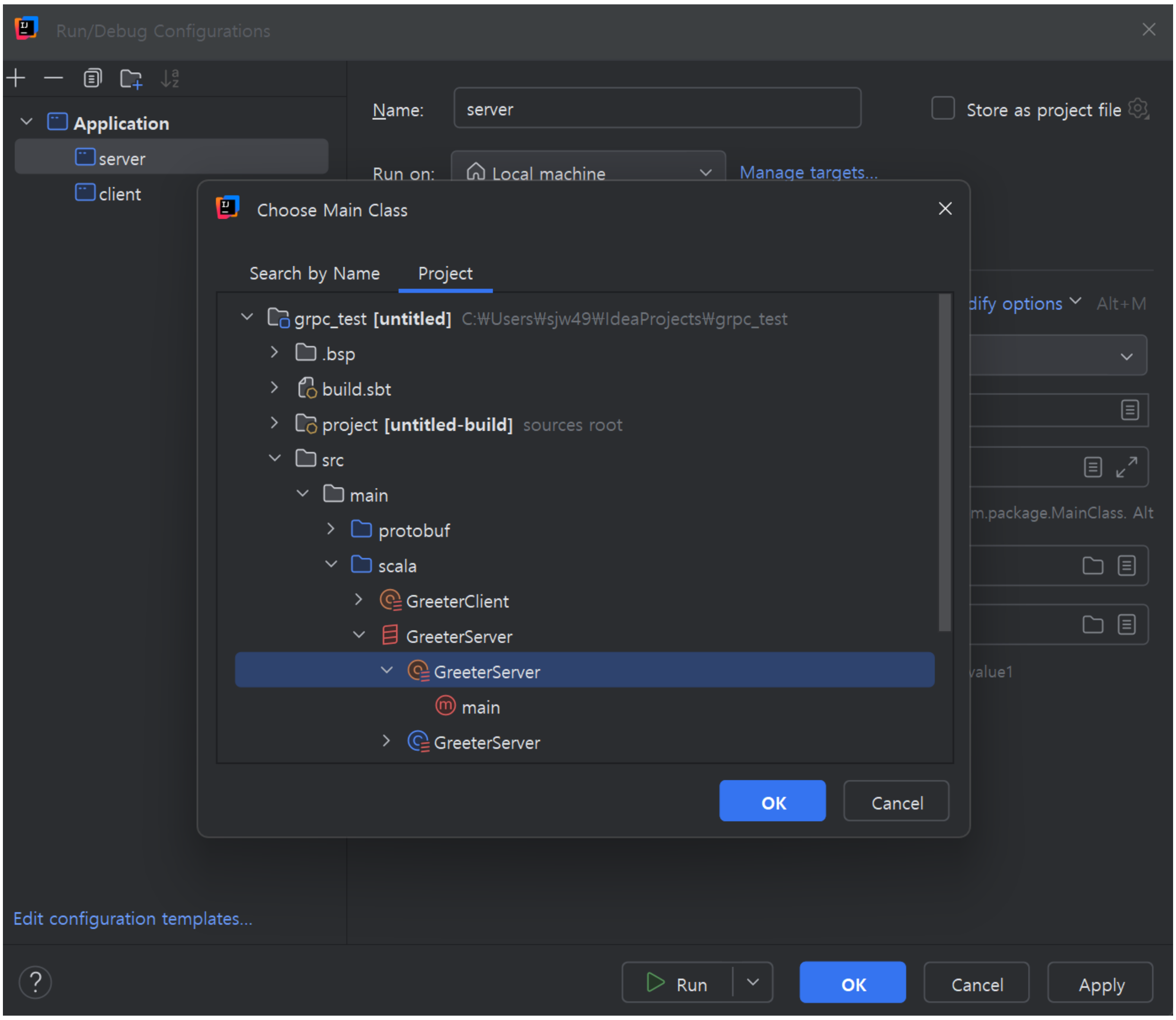
Press Alt for field hints

Working directory: C:₩Users₩sjw49₩IdeaProjects₩grpc_test

Environment variables: Environment variables or .env files

Separate variables with semicolon: VAR=value; VAR1=value1

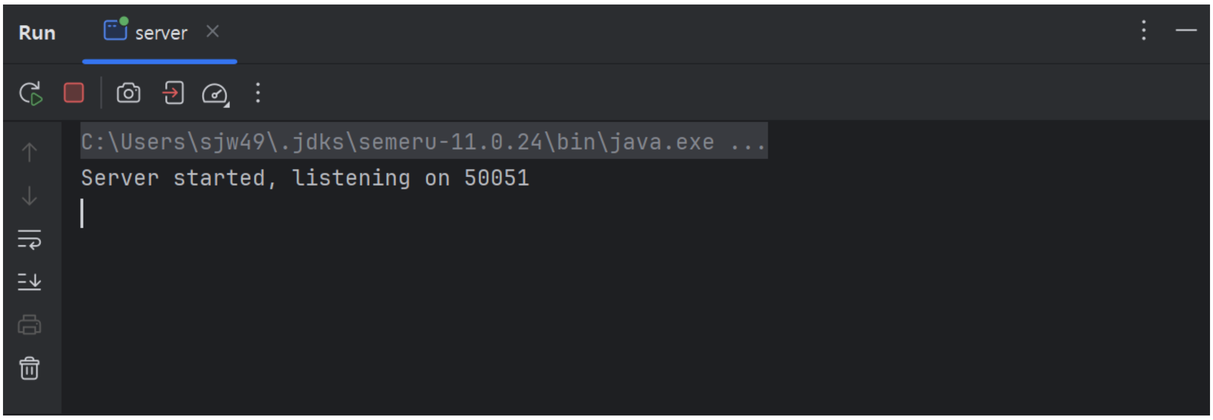
Open run/debug tool window when started



Name: server

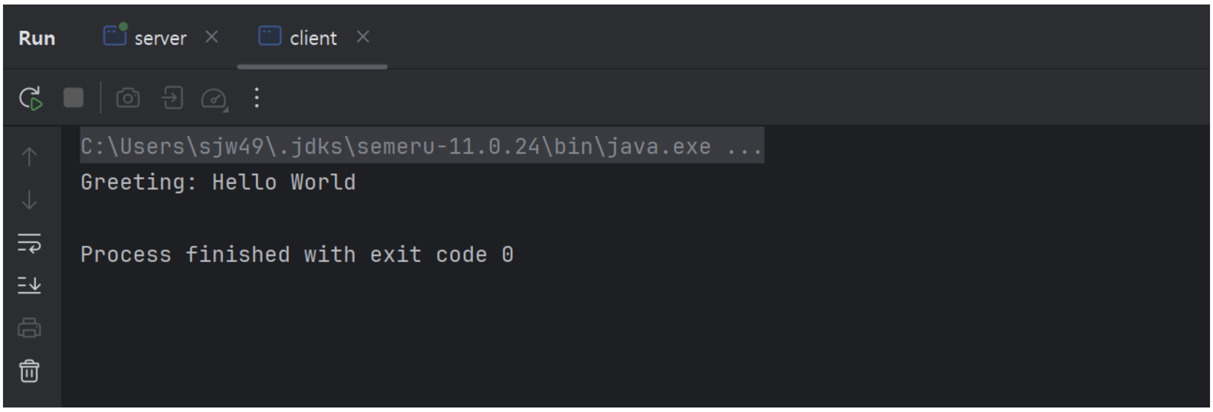
Run on: Local machine

- 서버 실행



```
C:\Users\sjw49\.jdks\semeru-11.0.24\bin\java.exe ...
Server started, listening on 50051
```

- 클라이언트 실행 (서버 실행 상태에서)



```
C:\Users\sjw49\.jdks\semeru-11.0.24\bin\java.exe ...
Greeting: Hello World

Process finished with exit code 0
```

출처: https://scalapb.github.io/docs/grpc/