Challenge: Map Polar Points to Cartesian Points

This lesson brings you a challenge to solve.

WE'LL COVER THE FOLLOWING

Problem statement

Write an interactive console program that asks the user for the polar coordinates of a 2-dimensional point (*radius* and *angle* (degrees)). Calculate the corresponding Cartesian coordinates `x` and `y`, and print out the result. Use structs called `polar` and `Cartesian` to represent each coordinate system. Use channels and a goroutine:

- A `channel1` to receive the polar coordinates
- A `channel2` to receive the Cartesian coordinates

The conversion itself must be done with a goroutine, which reads from `channel1` and sends it to `channel2`. In reality, for such a simple calculation it is not worthwhile to use a goroutine and channels, but this solution would be quite appropriate for heavy computation.

Formulae

Θ = Angle of polar coordinates * π / 180.0 , where π=3.1417...

x of Cartesian = Radius of polar coordinates * Cos(Θ)

y of Cartesian = Radius of polar coordinates * Sin(Θ)

> **Note:** To understand the conversion, you can read this Wikipedia page.

Try to attempt the challenge below. Good Luck!

Environment Variables

Key:	Value:
GOROOT	/usr/local/go
GOPATH	//root/usr/local/go/src
PATH	//root/usr/local/go/src/bin:/usr/local/go...

```
package main

type polar struct {

}

type cartesian struct {

}


func main() {

}

func createSolver(questions chan polar) chan cartesian {


}

func interact(questions chan polar, answers chan cartesian) {

}
```

Click the **RUN** button, and wait for the terminal to start. Type `go run main.go` and press **ENTER**.

We hope that you were able to solve the challenge. The next lesson brings you the solution to this challenge.