Homework # 2

01286120 Elementary Systems Programming

Software Engineering Program

Faculty of Engineering, KMITL

By

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1. Calculating the area of a circle

1.1) Given the formula for calculating the area of a circle a = πr , where π is the constant 3.1416 , and r is the radius of the circle. Write a program to calculate the area of a circle of radius r from the command-line arguments.

(Code is in attached file)

```
PS C:\Users\phatt\OneDrive\Desktop\Code Files\Rust\Lab_2\HW\circle> cargo run 4
    Finished dev [unoptimized + debuginfo] target(s) in 0.03s
     Running `target\debug\circle.exe 4`
a: 50.2656
```

1.2) Write a test for the program in 1.1).

(Code is in attached file)

```
PS C:\Users\phatt\OneDrive\Desktop\Code Files\Rust\Lab_2\HW\circle> cargo test
   Compiling circle v0.1.0 (C:\Users\phatt\OneDrive\Desktop\Code Files\Rust\Lab_2\HW\circle)
    Finished test [unoptimized + debuginfo] target(s) in 0.54s
     Running unittests src\main.rs (target\debug\deps\circle-61b5245c63cdd46a.exe)

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

     Running tests\cli.rs (target\debug\deps\cli-3f3ac1fad0ccede4.exe)

running 1 test
test main ... ok

test result: ok. 1 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.02s
```

2. Converting the temperature scale

2.1) Given the formula for converting the temperature scale from degree Fahrenheit to degree Celsius: c = (5/9)(f - 32) , where c is the temperature value in °C and f is the temperature value in °F. Write a program to convert the temperature scale from °F to °C given the temperature value in °F from the command-line arguments.

(Code is in attached file)

```
PS C:\Users\phatt\OneDrive\Desktop\Code Files\Rust\Lab_2\HW\temp> cargo run --bin temp 32
    Finished dev [unoptimized + debuginfo] target(s) in 0.04s
     Running `target\debug\temp.exe 32`
c: 0
```

2.2) Write a test for the program in 2.1).

(Code is in attached file)

```
PS C:\Users\phatt\OneDrive\Desktop\Code Files\Rust\Lab_2\HW\temp> cargo test
    Finished test [unoptimized + debuginfo] target(s) in 0.02s
     Running unittests src\main.rs (target\debug\deps\temp-8729d1a403a8eeb0.exe)

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

     Running unittests src\bin\to_farenheit.rs (target\debug\deps\to_farenheit-91e38c31c66549d7.exe)

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

     Running tests\cli.rs (target\debug\deps\cli-a81b6a6da22bbc71.exe)

running 2 tests
test main ... ok
test to_farenheit ... ok

test result: ok. 2 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.10s
```

2.3) Write a program to convert the temperature scale from °C to °F given the temperature value in °C from the command-line arguments.

(Code is in attached file)

```
PS C:\Users\phatt\OneDrive\Desktop\Code Files\Rust\Lab_2\HW\temp> cargo run --bin to_farenheit 0
    Finished dev [unoptimized + debuginfo] target(s) in 0.04s
     Running `target\debug\to_farenheit.exe 0`
f: 32
```

2.4) Write a test for the program in 2.3).

(Code is in attached file)

```
PS C:\Users\phatt\OneDrive\Desktop\Code Files\Rust\Lab_2\HW\temp> cargo test
    Finished test [unoptimized + debuginfo] target(s) in 0.03s
     Running unittests src\main.rs (target\debug\deps\temp-8729d1a403a8eeb0.exe)

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

     Running unittests src\bin\to_farenheit.rs (target\debug\deps\to_farenheit-91e38c31c66549d7.exe)

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

     Running tests\cli.rs (target\debug\deps\cli-a81b6a6da22bbc71.exe)

running 2 tests
test main ... ok
test to_farenheit ... ok

test result: ok. 2 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.07s
```

3. Write a program to list player's name

3.1) Write a program list_players that list player's name with two names taken from the command-line arguments. Print "N/A" for missing values and discard values the commandline arguments after the second value. The output from the program would be as follows:

(Code is in attached file)

```
PS C:\Users\phatt\OneDrive\Desktop\Code Files\Rust\Lab_2\HW\list_player\list_players> cargo run --bin list_players
    Finished dev [unoptimized + debuginfo] target(s) in 0.01s
     Running `target\debug\list_players.exe`
Player 1: N/A
Player 2: N/A
PS C:\Users\phatt\OneDrive\Desktop\Code Files\Rust\Lab_2\HW\list_player\list_players> cargo run --bin list_players Trashcan
    Finished dev [unoptimized + debuginfo] target(s) in 0.01s
     Running `target\debug\list_players.exe Trashcan`
Player 1: Trashcan
Player 2: N/A
PS C:\Users\phatt\OneDrive\Desktop\Code Files\Rust\Lab_2\HW\list_player\list_players> cargo run --bin list_players Trashcan Tuscan
    Finished dev [unoptimized + debuginfo] target(s) in 0.01s
     Running `target\debug\list_players.exe Trashcan Tuscan`
Player 1: Trashcan
Player 2: Tuscan
PS C:\Users\phatt\OneDrive\Desktop\Code Files\Rust\Lab_2\HW\list_player\list_players> cargo run --bin list_players Trashcan Tuscan Bob
    Finished dev [unoptimized + debuginfo] target(s) in 0.01s
     Running `target\debug\list_players.exe Trashcan Tuscan Bob`
Player 1: Trashcan
Player 2: Tuscan
```

3.2) Write a test for the program in 3.1).

(Code is in attached file)

```
PS C:\Users\phatt\OneDrive\Desktop\Code Files\Rust\Lab_2\HW\list_player\list_players> cargo test
    Finished test [unoptimized + debuginfo] target(s) in 0.01s
     Running unittests src\main.rs (target\debug\deps\list_player-cce08daa0f2b62fa.exe)

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

     Running unittests src\bin\list_players.rs (target\debug\deps\list_players-8bb1ff83fc24b048.exe)

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

     Running tests\cli.rs (target\debug\deps\cli-1e835d7f7264fe55.exe)

running 4 tests
test tst1 ... ok
test tst2 ... ok
test tst3 ... ok
test tst4 ... ok

test result: ok. 4 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.02s
```