Chapter 2 - How to write your first program

2.1 Student Registration

Create a program that allows a student to complete a registration form and displays a completion message that includes the user's full name and a temporary password.

Console:

```
Registration Form

First Name: Eric
Last Name: Idle
Birth Year: 1934

Welcome Eric Idle!
Your registration is complete!
Your temporary password is: Eric*1934
```

Specifications:

- The user's full name consists of the user's first name, a space, and the user's last name.
- The temporary password consists of the user's first name, an asterisk (*), and the user's birth year.
- Assume the user will enter valid data.

```
print("Registraion Form")

first_name = input("First Name:")
last_name = input("Last Name:")
birth_year = input ("Birth Year:")

full_name = f"{first_name} {last_name}"
temporary_password = f"{first_name}*{birth_year}"

print(f"\nWelcome {full_name}!")
print("Your registration is complete!")
print(f"Your temporary password is: {temporary_password}")
```

```
Registraion Form

Welcome Joey Hudak!
Your registration is complete!
Your temporary password is: Joey*2004
```

2.2 - Pay Check Calculator

Create a program that calculates a user's weekly gross and take-home pay.

Console

```
Pay Check Calculator

Hours Worked: 35
Hourly Pay Rate: 14.50

Gross Pay: 507.5
Tax Rate: 18%
Tax Amount: 91.35
Take Home Pay: 416.15
```

Specifications:

- The formula for calculating gross pay is: `gross pay = hours worked * hourly rate`
- The formula for calculating tax amount is: `tax amount = gross pay * (tax rate / 100)`
- The formula for calculating take home pay is: `take home pay = gross pay – tax amount`
- The tax rate should be 18%, but the program should store the tax rate in a variable so that you can easily change the tax rate later, just by changing the value that's stored in the variable.
- The program should accept decimal entries like 35.5 and 14.25.
- Assume the user will enter valid data.
- The program should round the results to a maximum of two decimal places.

```
print("Pay check Calculator")

hours_worked = float(input("Hours Worked:"))
hourly_pay = float(input("Hourly Pay Rate:"))
tax_rate = 18

gross_pay = hours_worked * hourly_pay

tax_amount = gross_pay * (tax_rate/100)

take_home = gross_pay - tax_amount


print(f"\nGross Pay: {gross_pay:.2f}")
print(f"Tax Rate: {tax_rate}%")
print(f"Tax Amount: {tax_amount:.2f}")
print(f"Take Home Pay: {take_home:.2f}")
```

```
Pay check Calculator
```

```
Gross Pay: 507.50
Tax Rate: 18%
Tax Amount: 91.35
Take Home Pay: 416.15
```

2.3 - Travel Time Calculator

Create a program that calculates the estimated hours and minutes for a trip.

Console

```
Travel Time Calculator

Enter Miles: 200
Enter Miles per Hour: 65

Estimated Travel Time
Hours: 3
Minutes: 5
```

Specifications

- The program should only accept integer entries like 200 and 65.
- Assume that the user will enter valid data.

Hint

- Use integers with the integer division and modulus operators to get hours and minutes.

```
import math

print("Travel time Calculator")

miles = int(input("Miles:"))
miles_per_hour = int(input("Miles per Hour:"))


total_min = math.ceil((miles * 60) / miles_per_hour)

hours = total_min // 60
min = total_min % 60

print("\nEstimated Travel Time")
print(f"Hours: {hours}")
print(f"Minutes: {min}")


Travel time Calculator

Estimated Travel Time
```

```
Hours: 3
Minutes: 5
```