

## Junior Knights Python 1 Exercises for 1/25/2025

### Review Exercises

#### Part A: Grade Calculator

Your teacher has assigned letter grades based on your exam score. Write a program that asks the user to enter their exam score (from 0 to 100) and print the corresponding letter grade:

- 90-100: A
- 80-89: B
- 70-79: C
- 60-69: D
- Below 60: F

#### Sample Program Run

```
What was your exam score?
```

```
85
```

```
Your letter grade is B.
```

#### Part B: Temperature Conversion

Write a program that does temperature conversion from either Fahrenheit to Celsius, or the other way around. Your program should first prompt the user for which type of conversion they want to do, via inputting the first letter of the metric you start with. Then your program should prompt the user for the temperature they want to convert.

Finally, your program should output the proper converted temperature. The formula for conversion from Celsius to Fahrenheit is:

$$F = 1.8 * C + 32$$

#### Sample Program Run #1

```
Do you want to convert from (1) Fahr to Cel, or (2) Cel to Far?
```

```
1
```

```
What is the temperature in Fahrenheit?
```

```
98.6
```

```
98.6 Fahrenheit equals 37.0 degrees Celsius.
```

Note: Due to floating point error, it's possible your output for this case could be 36.999...

### Sample Program Run #2

Do you want to convert from (1) Fahr to Cel, or (2) Cel to Far?

**2**

What is the temperature in Celsius?

**6.0**

6.0 Celsius equals 42.8 degrees Fahrenheit.

### Part C: C Leap Years

On planet C, leap years occur on every year divisible by 7, except for years that are divisible by either 35 or 77. (Thus, the first ten leap years after 0 on planet C are: 7, 14, 21, 28, 42, 49, 56, 63, 84 and 91.) Write a program that prompts the user to enter a year (positive integer) and prints out whether or not this year is a leap year on planet C.

### Sample Program Run # 1

What year do you want to know about on planet C?

**35**

35 is not a leap year on planet C.

### Sample Program Run # 2

What year do you want to know about on planet C?

**2025**

2025 is not a leap year on planet C.

### Sample Program Run # 3

What year do you want to know about on planet C?

**2035**

2035 is a leap year on planet C.

Not: if you want an extra challenge, make the tense of the verb you use in the output correct, so output “35 was not”, “2025 is not” and “2035 will be”, depending on if the year was in the past, is the current year, or is in the future.

## **For Loop Practice**

### **Part D: Bart Simpson's Punishment**

Whenever Bart Simpson did something wrong at school, his teacher would make him write a statement on the chalkboard many times. For this program, ask the user to enter a message that must be repeated and also ask the user how many times that message should be repeated. Then, print out that message the requested number of times.

#### **Sample Program Run**

What message must you write on the board?

**I will not feed my homework to my dog.**

How many times do you have to write it on the board?

**7**

I will not feed my homework to my dog.

I will not feed my homework to my dog.

I will not feed my homework to my dog.

I will not feed my homework to my dog.

I will not feed my homework to my dog.

I will not feed my homework to my dog.

I will not feed my homework to my dog.

### **Part E: Donation Collector**

Write a program that asks the user how many donations they are going to collect and then asks them to list the value of each donation, in dollars. Finally, print out the sum of the donations gathered.

#### **Sample Run**

**How many donations are you collecting?**

**4**

**How much is donation #1, in dollars?**

**25**

**How much is donation #2, in dollars?**

**10**

**How much is donation #3, in dollars?**

**50**

**How much is donation #4, in dollars?**

**5**

**You have collected a total of \$90.**