Lone Star
section 4

Midterm quiz

1. (1.2) Write a program that asks the user for
   (a) their first name and
   (b) their age.

   and then outputs a greeting.

```
Enter your name: Ashley
Enter your age: 25
Hello Ashley. 25 is a cool age!
```

Your output should be similar to this.

2. (1.3) Write code to swap the values of x and y using a temporary variable and without using the built-in function swap().

```
x = 3
y = 7
#Your code here.
```

3. (3.2) Write a program that prompts the user to enter three integers and displays the integers in increasing order (smallest to largest). You may not use the built-in functions *max*(), *min*(), *sort*() or *sorted*().

4. (3.3) The table below shows the maximum health of characters based on race and class for a new video game I am creating. Write a program that asks the user for the race and the class of their character, and then sets the *health_points* variable according to the table below.

```
health_points = -1
#Your code here.
```

	Race	
Class	Elf	Ogre
Warrior	150	200
Bard	75	100
Wizard	25	50

5. (4.1) Write a program that asks the user for a word and then, using a loop, prints every other letter of the word starting with the second letter.

   Examples:

   - if user_word = "counterattack", the result should be "oneatc"
   - if user_word = "banana sunday", the result should be "aaasna"

Dot Matrix
section 5

Midterm quiz

1. (1.2) Write a program that asks the user for
   (a) their first name and
   (b) their age.

   and then outputs a greeting.

```
Enter your name: Ashley
Enter your age: 25
Hello Ashley. 25 is a cool age!
```

Your output should be similar to this.

2. (1.3) Write code to swap the values of x and y using a temporary variable and without using the built-in function swap().

```
x = 3
y = 7
#Your code here.
```

3. (3.2) In Harry Potter, the currency consists of knuts, sickle, and galleon. There are 29 knuts in one sickle and 17 sickles in one galleon. Write a program that will convert some amount of knuts into the fewest amount of coins possible. Only print non-zero values, meaning don't print something similar to "0 sickles." For example,

   - Given 32 knuts, output 1 sickle 3 knuts
   - Given 544 knuts, output 1 galleon 4 sickles 18 knuts
   - Given 993 knuts, output 2 galleons 7 knuts. Do **not** output 2 galleons 0 sickle 7 knuts.

4. (3.3) The table below show what your resting heart rate should be based on age and athleticism. Write a program that asks the user their age and desired athleticism goal, and then outputs what their resting heart rate should be.

	Athleticism	
Age	Above Average	Below Average
20 – 39	47 – 72	73 – 93
40 – 59	46 – 71	72 – 94
60 – 79	45 – 70	71 – 97

Your end output should look similar to this

```
Enter your age: 45
Enter your athleticism goal: Below Average
Your resting heart rate should be between 72–94.
```

5. (4.1) Write a program that asks the user for an integer. Calculate (and then print) the sum of all square numbers up to and including the user's number.

   For example,

   - if user_number = 3, the result should be 14 since $1^2 + 2^2 + 3^2 = 14$.
   - if user_number = 8, the result should be $1^2 + 2^2 + 3^2 + 4^2 + 5^2 + 6^2 + 7^2 + 8^2 = 204$.

Dark Helmet
section 4

Midterm quiz

1. (1.2) Write a program that asks the user for
   (a) their first name and
   (b) their last name.

   and then outputs a farewell.

```
Enter your first name: Matt
Enter your last name: Priem
Hello Matt Priem. See you next time!
```

Your output should be similar to this.

2. (1.3) Write code to swap the values of x and y using a temporary variable and without using the built-in function swap().

   x = 3
   y = 7

   #Your code here.

3. (3.2) Write a program that asks the user for three side lengths of a triangle, and prints the type of triangle. The types of triangles are

   - No sides equal: "scalene"
   - Two sides equal: "isosceles"
   - All sides equal: "equilateral"

   For example:

```
Pick side length 1: 4
Pick side length 2: 6
Pick side length 3: 7
scalene triangle
```

```
Pick side length 1: 5
Pick side length 2: 8
Pick side length 3: 5
isosceles triangle
```

```
Pick side length 1: 9
Pick side length 2: 9
Pick side length 3: 9
equilateral triangle
```

4. (3.3) The table below shows what time different age groups (by grade) can swim at the pool. There are two time options, morning and afternoon. Write a program that asks the user their grade and whether they'd like to go in the morning or afternoon, and outputs the time the pool is available for them.

	Pool times	
Grade	Morning	Afternoon
k, 1 – 3	9 AM	1 PM
4 – 8	10 AM	2 PM
9 – 12	11 AM	3 PM

Your end output should look similar to this

```
Enter your grade: 5
Enter Morning OR Afternoon: Morning
The pool is open at 10 AM.
```

5. (4.1) Using a loop, write a program that prints every even number between 37 and 1050 (inclusively).

President Skroob
section 1

Midterm quiz

1. (1.2) Write a program that asks the user for
   (a) their first name and
   (b) their last name.

   and then outputs a greeting.

```
Enter your first name: Matt
Enter your last name: Priem
Hello Matt Priem. How are you?
```

Your output should be similar to this.

2. (1.3) Write code to swap the values of x and y using a temporary variable and without using the built-in function swap().

```
x = 3
y = 7

#Your code here.
```

3. (3.2) Primary U.S. interstate highways are numbered 1-99. Odd numbers (like 5 or 95) go north/south, and evens (like 10 or 82) go east/west. Auxiliary highways are numbered 100-999, and service the primary highway indicated by the rightmost two digits. Thus, I-405 services I-5, and I-290 services I-90.

   Note: 200 is not a valid auxiliary highway because 00 is not a valid primary highway number.

   Let the user pick a highway number. Given a valid highway number, indicate whether it runs north/-south or east/west. If it is an invalid highway number, indicate that it is an invalid highway number. For example,

```
Pick a highway number: 400
Invalid highway number
```

```
Pick a highway number: 305
highway 305 runs north/south
```

```
Pick a highway number: 694
highway 694 runs east/west
```

```
Pick a highway number: 35
highway 35 runs north/south
```

4. (3.3) The table below show what your resting heart rate should be based on age and athleticism. Write a program that asks the user their age and desired athleticism goal, and then outputs what their resting heart rate should be.

	Athleticism	
Age	Above Average	Below Average
20 – 39	47 – 72	73 – 93
40 – 59	46 – 71	72 – 94
60 – 79	45 – 70	71 – 97

Your end output should look similar to this

```
Enter your age: 45
Enter your athleticism goal: Below Average
Your resting heart rate should be between 72–94.
```

5. (4.1) Write code that asks the user for an integer and then prints each number that is a factor of the input.

   For example,

```
Enter a number: 12
1 2 3 4 6 12
```

```
Enter a number: 17
1 17
```

```
Enter a number: 36
1 2 3 4 6 9 12 18 36
```

Hal 9000 Midterm quiz
section 0

1. (1.2) Write a program that asks the user for
   (a) the year,
   (b) the month, and
   (c) the day

   and then outputs the date.

```
Enter year: 2021
Enter month: June
Enter day: 2
The date is June 2, 2021.
```

Your output should be similar to this.

2. (1.3) Write code to swap the values of x and y using a temporary variable and without using the built-in function swap().

x = 3
y = 7

#Your code here.

3. (3.2) Ask the user for three integers. Determine (and output) how many copies of the same number the user entered.
   For example,

```
Pick a number: 1
Pick another number: 2
Pick another number: 3
each number is unique
```

```
Pick a number: 7
Pick another number: 5
Pick another number: 7
You entered the same number 2 times.
```

4. (3.3) The table below shows the maximum health of characters based on race and class for a new video game I am creating. Write a program that asks the user for the race and the class of their character, and then sets the *health_points* variable according to the table below.

health_points = -1
#Your code here.

	Race	
Class	Elf	Ogre
Warrior	150	200
Bard	75	100
Wizard	25	50

5. (4.1) Write code that asks the user for an integer and then prints each number that is a factor of the input.

   For example,

```
Enter a number: 12
1 2 3 4 6 12
```

```
Enter a number: 17
1 17
```

```
Enter a number: 36
1 2 3 4 6 9 12 18 36
```