Name _____

CPADS Lab Activity #8
Decisions

Program #1

```
var = input('Input a value between 60 and 100: ')
val = int(var)

if val > 90:
    print('Great job!')
elif val > 80 and val < 90:
    print('Not bad')
elif val >= 70 and val < 80:
    print('Could be better')
else:
    print('Need more practice')
```

What is the output of the above program if the user inputs the value **95** when prompted?

What is the output of the above program if the user inputs the value **90** when prompted?

What is the output of the above program if the user inputs the value **80** when prompted?

What is the output of the above program if the user inputs the value **65** when prompted?

What is the output of the above program if the user inputs the value **40** when prompted?

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Program #2

```
def compute_val(input):
    sum = 0

    for i in range(input):
        if i % 2 == 1:
            sum = sum + i
        else:
            sum = sum - i

    return sum

def main():
    val = compute_val(10)
    print(val)

main()
```

In English, describe what the program above does. What is the output of the program above?

Program #3

```
val = 0

while(val < 10):
    print(val)
```

What is the output of the program above?

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Program #4

```
m = 5
n = 0

while (m > n):
    print(m + n)
    m = m - 1
    n = n + 1
```

What is the output of the program above?

Program #5

```
print ('Enter a series of numbers with values between 1 and 5 (inclusive)')
expected_vals = int(input('How many numbers would you like to input? '))
val = -1
total = 0
num_vals = 0

while ((val < 1 or val > 5) or num_vals != expected_vals):
    val = int(input('Enter a number: '))

    if (val >= 1 and val <= 5):
        total = total + val
        num_vals = num_vals + 1
    else:
        print('Invalid input value, try again')

print(total // expected_vals)
```

In English, describe what the program above does. What is the output of the program above?

Name _____

Program #6

```
# import a library that can generate random numbers
from random import randint

lowRange = 1
highRange = 5
# Create a random number between lowRange and highRange (inclusive)
randomNumber = randint(lowRange, highRange)

attemptNumber = 0
guessAgain= "yes"
guess = -1


print('Let\'s play a game.')
print('I\'m thinking of a number between', lowRange, 'and', highRange)

while guess != randomNumber and guessAgain!= "no":
    guess = int(input('Guess my number: '))
    attemptNumber = attemptNumber + 1;

    if guess != randomNumber:
        print('Sorry, that is not correct')
        guessAgain = input('Would you like to guess again? [yes/no]: ')


if guess == randomNumber:
    print('Yeah, you guessed correctly on attempt #', attemptNumber)
else:
    print('Quitter')
```

In English, describe what the program above does. Type the code into PyCharm to see how it works. When testing the code, experiment with different inputs. What happens if you supply a value less than 1? Greater than 5? What happens if you type **NO** (in capital letters) when prompted to guess again?