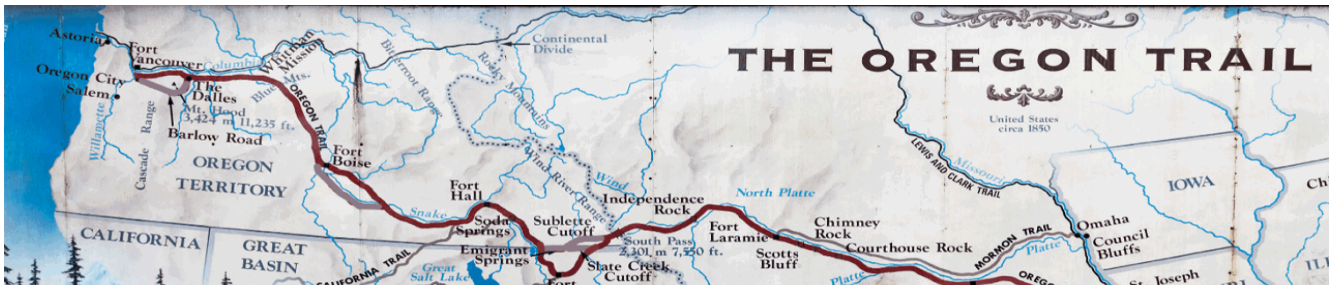
Reflection Sheet

Name of Activity: Python Game - Oregon Trail

Objective: Using variables, functions, and conditionals in Python, students will create an Oregon Trail game.

Overview: In this project I had to recreate the classic Oregon Trail game. The goal of the game is to travel from NYC to Oregon (2000 miles) by Dec 31st. However, the trail is arduous. Each day costs the player food and health. The player can hunt and rest to increase the food supply and amount of health points, but the player will have to get to Oregon before winter or perish!



What I did:

I made a project in vscode that is a simple version of the Oregon trail game. With the goal being to get to Oregon within a year. You start in march and must travel 2000 miles. Every day the player can get hurt and lose food. The game is based on a few variables, functions and a loop. The main variables are food,days,months, miles and health. They are used throughout the code to keep track of key info. Heath keeps track of the players health and if it reaches 0 they die health can be restored by resting. Food is how much food the player has. It can be restored by hunting. Days and months keep track of what day and month it is. Travel is a function that allows you to travel between 30 -60 miles and 3-7 days are used. It randomly generates the amount of miles and uses the update days function. Hunt allows the player to gain 100 lb of food in 2 - 5 days. The rest function gives you one health and takes 2-5 days. The update days function is very important as it is what allows the random days in most other functions. It works by taking a high and low number and generating a number between them, then it uses a for loop to add all the days to the days variable. The last part of the program is the loop that keeps the game running. It is a while loop with a variable called game over which if you die becomes false and ends the game. In the loop there are if statements that check if the input the player gives is an action and then executes the action. There is another set of if statements that checks if the player has died by day, food or health. It also checks if the player has won the game.

Problems: the only problems I had were a result of typos that python doesn't recognize as errors, such as typing the wrong number in. This causes issues because you have to find the error without help from the engine. I also declared global variables the wrong way or forgot to make them global which i had to fix

Tests and results:
Game over by days: works
Game over by food works
Game end by health works
All functions work as intended
While loop breaks when needed
Selection works well
Can win if you get to oregon

What we learned:
In his project I didn't really learn anything new but I did build upon skills I already had such as functions and variables. The functions we used were good practice and I think they helped me see different ways to use them in code. Global variables were good practice because I've got stuff wrong with them before like where you declare them and where they work. I also think that the whole project was good practice for game design which is something that I find very interesting and do on my own.

Python Code:

```
#name: travel
#purpose:move the player randomly between 30-60 miles are take (randomly) 3-7
days
#input:none
#output:
def travel():
    global DAY
    global MONTH
    global MILES
    move = random.randint(30,60)
    MILES -= move
    day = update_days(3,7)
    print('You travel',move,'miles in',day,'days.')


#name: hunt
#purpose: add 100lbs of food and takes 2-5 days (random)
#input: none
```

```
#output:none
def hunt():
    global FOOD
    FOOD += 100
    day = update_days(2, 5)
    print('You gather 100lbs of food over the course of',day,'days')


#name: rest
#purpose: increase health by 1 hp (max of 5) and takes 2-5 days (random)
#input: none
#output: none
def rest():
    global HEALTH
    if HEALTH < 5:
        HEALTH += 1
        day = update_days(2, 5)
        print('You rest recovering 1 hp over the course of',day,'days. Your
health is now at', HEALTH)
    else:
        print('You are at max health no need to rest!')
#Travel, Rest, Hunt Functions +15


#name: status
#purpose: list your current health, food, distance travlled, and day
#input: none
#output: none
def status():
    print('Current Status:')
    print('Health:',HEALTH)
    print('Food:',FOOD)
    print('Miles to go:',MILES)
    print('Current Date:',MONTH,'/',DAY)

#name: help
#purpose: list of commands
#input: none
#output: none
def help():
    print('The available actions are:\ntravel - move closer to Oregon\nrest -
recover health\nhunt - gather more food\nstatus - displays current health,
food, distance travelled and day\nhelp - see a list of available commands')
#status, help, and quit +5


#name: add_day
#perpuse:add a day to the calender each time the function is called
#input: none
#output: none
def add_day():
    #Correct add_days function
```

```
    global DAY
    global MONTH
    global FOOD
    global HEALTH
    #Correctly use global variables
    if DAY < 30:
        DAY += 1
    elif DAY < 31 and MONTH in Months_with_31:
        DAY += 1
    else:
        DAY = 1
        MONTH += 1
        #Days roll over correctly +10
    FOOD -= 5
    #Food decreases every day +5
    hurt = random.randint(1,100)
    #Correctly use imported random function
    if hurt <= 5:
        HEALTH -= 1
        print('You got injured on the trail and lose 1 health point!!')
        #Health decreases randomly, 5% chance each day +5



# name: update_days
# purpose: adds a random
# number of days to your game. The number of days will be between the two
values specified in the arguments.
# input: the range that you want the random number of days to fall between
# output: days, the number of days that passed, as an int
def update_days(low_range, high_range):
    days = random.randint(low_range, high_range)
    for i in range(0, days):
        add_day()
    return days
#Correctly use functions and contracts


import random


enter = (input('Press enter to start the game: '))
username = input('What is your name?: ')
print('Welcome to the Oregon Trail',username,'you are starting in NYC on 03/01
with 2,000 miles to go, 500lbs of food, and 5 health. You must get to Oregon
by 12/31 or you will DIE!')



DAY = 1
MONTH = 3
MILES = 2000
```

```
FOOD = 500
HEALTH = 5
#Correctly use and update variables
Months_with_31 = [1, 3, 5, 7, 8, 10, 12]
game_over = False

#Game Loop

while game_over == False:
    action = input('What would you like to do?: ')
    if action == 'travel':
        travel()
    elif action == 'hunt':
        hunt()
    elif action == 'rest':
        rest()
    elif action == 'status':
        status()
    elif action == 'help':
        help()
    elif action == 'quit':
        game_over = True
        print('You quit the game')
    else:
        print('That is not a valid action, type help for a list of commands')
    if FOOD <= 0:
        game_over = True
        print('You are out of food and have starved to death!')
    if MILES <= 0:
        game_over = True
        print('You made it to Oregon!!')
    if HEALTH <= 0:
        game_over = True
        print('You died!')
    if MONTH > 12:
        game_over = True
        print('You ran out of time and died!')
#Game ends if food runs out, days run out, or health runs out +10
```