A453/01

# Introduction

In this report I am going to show my workflow for this project and what I achieved.

The three tasks that I was asked to complete were:

1. Make a program which rolls a 4-sided, 6-sided or 12-sided dice
2. Determine traits and attributes for a character
3. Determine results of an encounter

Basically simulate Dungeons & Dragons.

I will design and plan my program using pseudocode and flowcharts, looking at multiple solutions and choosing the most efficient method.

I will write the program in the IDE, Geany, and the programing language, Python, as I have lots of experience with them and feel confident in using them.

I will use a testing table to manage my testing of the program and ensure my testing is through.

Finally, at the end I will evaluate my program by comparing it with the brief.

# Task One

# Introduction

Task one simply asks the user for a number and then rolls a dice with that number of sides, assuming that number is 4, 6 or 12.

# Methods

1. Create a function which is called when a number is wanted.
2. Create separate programs for each number which are picked with an if statement.

I will use method one.

# Flowchart

# Flowchart.png

# 

# Pseudocode

Number = Ask user for number

If number = 4,6 or 12

Generate number between 1 and the variable number

Output number

Else

Tell user that their number is wrong

Ask user if they want to repeat

# Validation And Variables

For validation I will be telling the user the possible inputs and setting up the program to reject text or any number that is not 4, 6 or 12. My variables are as follows.

Continue1 - Boolean - Keeps program running

Continue2 - String - User opinion on continuing

Sides - Integer - Number of sides

Number - Inger - Result of dice roll

# Code Before Testing

import random

import os

continue1 = True

def Roll(sides):

if sides == 4 or sides == 6 or sides == 12:

number = random.randint(1,sides)

print ("I rolled a", sides, "sided dice, and got", number)

else:

print ("You can't roll that number!")

while continue1 == True:

sides = int(input("Pick a 4,6 or 12 sided dice to roll: "))

Roll(sides)

continue2 = (input("Would you like to continue: ").lower())

os.system('cls')

if continue2 != "yes":

print ("Bye!")

continue1 = False

# Testing

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Number And Type | Test Description | Test Methodology | Test Results | Action |
| 1: Erroneous | I am going to test if my program rejects text | Input a word when asked for a number | Failure | Added test (isdigit) so it rejects strings correctly |
| 2: Boundary | I will ensure my program continues to work when used repeatedly | Use the program multiple times without quitting | Success | N/A |
| 3: Normal | I will ensure my program accepts all the wanted numbers | Input 4, 6 and 12 into the program | Success | N/A |

# Code After Testing

import random

import os

import time

continue1 = True

def Roll(sides):

if sides == 4 or sides == 6 or sides == 12:

number = random.randint(1,sides)

print ("I rolled a", sides, "sided dice, and got", number)

else:

print ("You can't roll that number!")

while continue1 == True:

sides = input("Pick a 4,6 or 12 sided dice to roll: ")

if sides.isdigit() == True:

sides = int(sides)

Roll(sides)

continue2 = (input("Would you like to continue: ").lower())

os.system('cls')

if continue2 != "yes":

print ("Bye!")

continue1 = False

else:

print ("Thats not a number!")

time.sleep (2)

os.system('cls')

# Evaluation

After testing I feel that my program fulfills all the requirements:

* Generates numbers
* Only allows numbers 4 6 and 12
* Allows user to repeat as many times as possible

# 

# 

# Task Two

# Introduction

This program needs to generate character info by rolling a 4 sided dice and a 12 sided dice. It then needs to divide the number from the 12 sided dice by the number from the 4 sided dice and round down. It then needs to write this and a suitable name to a file twice.

# Methods

1. Call the existing function to create the numbers (setting it to allow any number) then divide results then write to a file
2. Have program pick a number of a program to run which does a specific calculation for number generated then write to a file

# Flowchart

# Flowchart2.png

# Pseudocode

Import random

x = 0

Names = [SomeNames]

While x != 2:

Number1 = Randint(1,12)

Number2 = Randint(1,4)

FinalNumber = Number1 / Number2

YourName = Names(Randint(1,(number of names)

Write FinalNumber and YourName to a file

x = x + 1

# Code Before Testing

import random

x = 0

Names = ["Ulli","Dwight","Brady","Waldo","Florus","Sullivan","Ramsey","Howard","Laurent","Raimund","Amira","Felicia","Cassandra","Selma","Zaria","Sorren","Voletta","Rieke","Sibilla","Liane"]

while x != 2:

NamePos = random.randint(0,19)

Number1 = random.randint(1,12)

Number2 = random.randint(1,4)

Number3 = random.randint(1,12)

Number4 = random.randint(1,4)

FinalNumber1 = 10 + int(Number1 / Number2)

FinalNumber2 = 10 + int(Number3 / Number4)

YourName = (Names[NamePos])

file = open("File.txt",'a')

file.write(str(FinalNumber1) + " " + str(FinalNumber2) + " " + YourName)

file.write('\n')

file.close()

x = x + 1

# Testing

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Number And Type | Test Description | Test Methodology | Test Results | Action |
| 1: Boundary | I will ensure my program continues to work when used repeatedly | Use the program without data loss | Success | N/A |
| 2: Normal | I will run the program | Run the program | Success | N/A |

# Code After Testing

No changes were made.

# Evaluation

I feel that my program fills all the requirements. It does the following:

* Randomly picks a name
* Randomly picks attributes
* Round down always
* Writes to a file
* Never clears the file