**Theory PFund**

**While Loop**

**Source Code:**

**#AREA OF A CIRCLE:**

**import math # to use the function for pi**

choice='yes'

while choice=="yes":

print("\nPress 1 to calculate the Area of a circle")

print("\nPress 2 to exit the program")

choice = input("choose 1 or 2:")

if choice == "1":

radius = float(input("Enter the value of radius: "))

area = math.pi \* (radius \*\* 2)

print(f"The area of the circle is: {area:.2f}")

elif choice == "2":

print("Exiting the program.")

else:

print("Invalid choice, please try again later.")

choice=input("Do you want to continue yes/no")

print("Program Ended.")

**# ODD EVEN**

continue\_check='yes'

while continue\_check=="yes":

print("Press Enter to find if the number is even or odd")

input("Press Enter to continue")

number = int(input("Enter your number: "))

#checking if the number is even or odd

if number % 2 == 0:

print("The number is even")

else:

print("The number is odd")

continue\_check=input("Do you want to continue the program:")

print("Thank you for using this program.")

**#Checking if the given value is a vowel or not:**

cont='go'

while cont.lower() =="go":

print("\nPress 1 to find if the character is a vowel or a consonant")

print("\nPress 2 to exit the program")

choice = input("Choose 1 or 2: ")

if choice == "1":

ch = input("Enter your character: ").lower()

print("You entered", ch)

if ch in "aeiou": # checking for vowels

print(ch, "is a vowel")

else:

print(ch, "is a consonant")

elif choice=="2":

print("Exiting the program.")

else:

print("Invalid choice.")

cont=input("Type Go if you want to stay in this program")

print("Ending the program.")

**#MARKSHEET:**

def calculate\_grade(average):

if average >= 90:

print("Grade: A+")

elif average >= 80:

print("Grade: A")

elif average > 70:

print("Grade: B")

elif average >= 60:

print("Grade: C")

elif average >= 50:

print("Grade: D")

else:

print("Grade: F")

proceed='proceed'

while proceed=="proceed":

print("Enter details for the student:")

name = input("Enter student's name: ")

# Taking input for marks in 5 subjects

marks = []

for i in range(5):

subject\_mark = float(input(f"Enter marks for Subject {i + 1}: "))

marks.append(subject\_mark)

# Calculate total and average marks

total = sum(marks)

average = total / 5

# Calculate percentage (Total Marks / Maximum Marks \* 100)

percentage = (total / 500) \* 100

# Printing the results directly

print("\n--- Marksheet ---")

print(f"Student Name: {name}")

print(f"Total Marks: {total} / 500")

print(f"Percentage: {percentage:.2f}%")

print(f"Average Marks: {average:.2f}")

calculate\_grade(average)

proceed=input("Enter 'proceed' if you want to continue")

print("Wrapping up, see you next time.")

**#CALCULATOR:**

cont='Proceed'

while cont.lower()=="proceed":

num1= eval(input("Enter number:"))

num2=eval(input("Enter number:"))

ch=input("Enter operation choice")

if ch=='+' or ch=='a' or ch=='A' or ch=='1':

ans=num1+num2

print(num1,"+",num2,"=",ans)

elif ch=='-' or ch=='s' or ch=='S' or ch=='2':

ans=num1-num2

print(num1,"-",num2,"=",ans)

elif ch=='\*' or ch=='m' or ch=='M' or ch=='3':

ans=num1\*num2

print(num1,"\*",num2,"=",ans)

elif ch=='/' or ch=='d' or ch=='D' or ch=='4':

ans=num1/num2

print(num1,"/",num2,"=",ans)

elif ch=='//':

ans=num1//num2

print(num1,"//",num2,"=",ans)

elif ch=='% ':

ans=num1%num2

print(num1,"%",num2,"=",ans)

elif ch=='\*\*':

ans=num1\*\*num2

print(num1,"\*\*",num2,"=",ans)

cont=input("Enter 'proceed' if you want to continue:")

print("Program exited successfully")