1. ATM Pin Validation

Write a program to simulate an ATM that keeps asking the user for their PIN using a while loop.

The loop should terminate once the correct PIN is entered, or after 3 incorrect attempts

```
##variable
pin = 1999

while True:
    for i in range(3):
        enter_pin = int(input("Enter your pin: "))

        if enter_pin == pin:
            print("Access Granted")
            break
        else:
            print("Access Denied")


    break
```

```
Enter your pin:  1999
```

```
Access Granted
```

2. Password Strength Checker

Write a program that takes a password as input and uses a while loop to ensure it meets the following criteria:

At least 8 characters long

Contains both letters and numbers

Keep prompting the user until a valid password is entered.

```
#variable

while True:
    password = str(input("Enter your password: "))
    if len(password) >= 8:
        if password.isalnum():
            if not password.isdigit() and not password.isalpha():
                print("Valid Password!")
                break
            else:
                print("Your password must contain alphanumeric
characters only number or characters are  ot allowed. ")
```

```
        else:
            print("Your password must contain alphanumeric
characters.")
    else:
        print("Try again! your password must contain atleast 8
characters.")


Enter your password:  abhjklhfdcgbb

Your password must contain alphanumeric characters only number or
characters are  ot allowed.

Enter your password:  abhilkj67895

Valid Password!
```

3. Recharge Reminder

A prepaid mobile plan expires after X days. Use a while loop to count down the days, displaying a reminder each day, until the plan expires. When the count reaches 0, display "Plan Expired.

```
#variable

days_remaining = int(input("Enter remaining days: "))

while True:
    for i in range(days_remaining):
        print(f"Your remaining days of mobile plan is {days_remaining-
i} days.")
    break
print("Plan Expired.")

Enter remaining days:  10

Your remaining days of mobile plan is 10 days.
Your remaining days of mobile plan is 9 days.
Your remaining days of mobile plan is 8 days.
Your remaining days of mobile plan is 7 days.
Your remaining days of mobile plan is 6 days.
Your remaining days of mobile plan is 5 days.
Your remaining days of mobile plan is 4 days.
Your remaining days of mobile plan is 3 days.
Your remaining days of mobile plan is 2 days.
Your remaining days of mobile plan is 1 days.
Plan Expired.
```

4. Data Entry Validation

Write a program that continuously asks the user to input a valid email address using a while loop. If the input is invalid, display an error message and prompt again

```
#variable

enter_email = str.lower(input("Enter your email: "))
email_is = "abhilashsaraswat619@gmail.com"

while True:
    if enter_email == email_is:
        print("Valid email.")
        break
    else:
        print("Invalid email! please enter your email again.")
        enter_email = str.lower(input("Enter your email: "))
```

5. Loan Repayment Simulation

Simulate loan repayment using a while loop. Start with a loan amount, subtract the monthly payment each iteration, and display the remaining balance. Exit the loop when the loan is fully repaid

```
#variable

loan_amt = int(input("Enter your loan amount: "))
monthly_inst = int(input("Enter your monthly payment amount: "))
months = int(input("Enter your loan tenure (in months): "))
paid_months = int(input("Enter your months paid: "))
remaining_balance = 0

while True:
    for i in range(months):
        months = months - paid_months
        print("Your remaining months ", months)
        remaining_balance = loan_amt - (paid_months * monthly_inst)
        print("Your remaining amount of loan is ", remaining_balance)
        break
    break
```

```
Enter your loan amount:  12000
Enter your monthly payment amount:  100
Enter your loan tenure (in months):  24
Enter your months paid:  6

Your remaining months  18
Your remaining amount of loan is  11400
```

6. Quiz Game

Create a simple quiz game where the program keeps asking questions (e.g., "What is 5+3?") using a while loop. Exit the loop if the user answers incorrectly or completes 5 questions correctly.

```
#variable

a = ("Q1- What is the area of circle if radius is 5cm?",78.5)
b = ("Q2- Calculate IQR if q1 and q2 is 3 and 5?",2)
c = ("Q3- Find the circumference of a circle with a radius of 7
cm?",43.96)
d = ("Q4- Find the area of a triangle with base 10 cm and height 8
cm.",40)
e = ("Q5- A coin is tossed once. What is the probability of getting
heads?",0.5)

questions = [a,b,c,d,e]

score = 0
index = 0

while score < 5 and index <len(questions):
    question, answer = questions[index]
    print(question)
    user_ans = eval(input("Enter your answer: "))
    if user_ans == answer:
        score += 1
        print("Correct Answer!, We'll move to the next question.")
        index += 1
        if index == 5:
            print(f"This is the end of quiz you Final Score is
{score}")
    else:
        print("Oops! You lost the game")
        break
```

```
Q1- What is the area of circle if radius is 5cm?

Enter your answer:  78.5

Correct Answer!, We'll move to the next question.
Q2- Calculate IQR if q1 and q2 is 3 and 5?

Enter your answer:  2

Correct Answer!, We'll move to the next question.
Q3- Find the circumference of a circle with a radius of 7 cm?

Enter your answer:  43.96
```

```
Correct Answer!, We'll move to the next question.
Q4- Find the area of a triangle with base 10 cm and height 8 cm.

Enter your answer:  40

Correct Answer!, We'll move to the next question.
Q5- A coin is tossed once. What is the probability of getting heads?

Enter your answer:  0.5

Correct Answer!, We'll move to the next question.
This is the end of quiz you final score is 5
```

7. Temperature Check

A freezer stops working if the temperature exceeds a threshold (e.g., -5°C). Use a while loop to simulate temperature readings every minute, and display a warning if the threshold is breached

```python
#variable
import time
temp = 0
threshold = -5
user_temp = int(input("Enter temprature: "))

while user_temp >= threshold:
    print(f"Your current temprature is {user_temp}.")
    if user_temp == threshold:
        print(f"Warining!! Your temprature has reached threshold of
{user_temp}. The Freezer is about to shut down.")
        break
    time.sleep(60)
    user_temp-=1
```

```
Enter temprature:  -3

Your current temprature is -3.
Your current temprature is -4.
```

8. Parking Lot Availability

Simulate a parking lot with 10 available spaces. Use a while loop to keep accepting car entries and decrement the space count. Stop the loop when no spaces are left

```python
#variable

space = 10

while True:
    for i in range(space):
```

```
            space -= 1
            print(f"{space} spaces are left in the parking lot.")
    break
```

```
9 spaces are left in the parking lot.
8 spaces are left in the parking lot.
7 spaces are left in the parking lot.
6 spaces are left in the parking lot.
5 spaces are left in the parking lot.
4 spaces are left in the parking lot.
3 spaces are left in the parking lot.
2 spaces are left in the parking lot.
1 spaces are left in the parking lot.
0 spaces are left in the parking lot.
```

9. Toll Booth Counter Write a program for a toll booth that keeps track of the number of vehicles passing through and stops collecting data when a user enters "stop." Display the total number of vehicles

```
#variable

count = 0

while True:
    user_input = str.lower(input("Enter your command: (pass or
stop)"))

    if user_input == "pass":
        count+=1
    else:
        break

print(f"Total number if vehicles passed is {count}.")
```

```
Enter your command: (pass or stop) pass
Enter your command: (pass or stop) pass
Enter your command: (pass or stop) pass
Enter your command: (pass or stop) stop

Total number if vehicles passed is 3.
```

10. Shopping Budget Tracker

Simulate a shopping experience where the user has a limited budget. Keep allowing the user to purchase items (by entering their price) using a while loop, and exit the loop when their budget is exhausted

```
#variable
```

```
budget = 10000

while True:
    purhase_price = int(input("Enter your price"))
    if purhase_price <= budget:
        budget -= purhase_price
        print(f"Your total is {purhase_price} and Your remaining
balance is {budget}")
        if budget == 0:
            print("Your account amount is 0.")
            break
    else:
        print(f"Account limit Reached!! please select another product
within {budget}.")
        purhase_price = int(input("Enter your price"))
        break
```

```
Enter your price 5000

Your total is 5000 and Your remaining balance is 5000

Enter your price 4000

Your total is 4000 and Your remaining balance is 1000

Enter your price 1000

Your total is 1000 and Your remaining balance is 0
Your account amount is 0.
```

```
---------------------------------------------------------------------------
-----
NameError                                 Traceback (most recent call
last)
Cell In[23], line 1
----> 1 time.time()

NameError: name 'time' is not defined
```