

***/\* Problem: Given a number, your pseudo code will find and display the longest consecutive repeating digit.***

***Sample Input: 1999161117***

***Sample Output: 9***

***\*/***

1) Declare num,currentDigit,maxDigit,currentLength,maxLength

2) Print "Enter any number: "

3) Input num

4) maxDigit = num%10

5) currentDigit = maxDigit

6) currentLength = 1

7) maxLength = 1

8) Repeat Until (base <= num) (num>0)

5.1) exponent = base + 1

5.2) count = 1

5.2) Repeat Until (count <= exponent)

5.2) base = base + 1

8.1) num = num/10

8.2) If (num%10 == currentDigit)

8.2.1)currentLength+=1

Otherwise

8.2.1) If (currentLength > maxLength)

8.2.1.2) maxLength = currentLength

8.2.1.2) maxDigit = currentDigit

8.2.2) currentDigit = num % 10

8.2.3) currentLength = 1

8.3) If (currentLength > maxLength)

8.3.1) maxLength = currentLength

8.3.2) maxDigit = currentDigit

8.4) Print maxDigit

## ***Problem # 2:***

1) Declare num, base, exponent, count, sum

2) Print "Enter the number"

3) Input num

4) base = 1

5) sum = 0

6) Repeat Until (base <= num)

6.1)  $\text{exponent} = \text{base} + 1$

6.2)  $\text{count} = 1$

6.3)  $\text{result} = 1$

6.4) Repeat Until ( $\text{count} \leq \text{exponent}$ )

6.4.1)  $\text{result} = \text{result} * \text{base}$

6.4.2)  $\text{count} = \text{count} + 1$

6.5)  $\text{base} = \text{base} + 1$

6.5)  $\text{sum} = \text{sum} + \text{result}$

7) Print sum

### ***Problem # 3:***

1) Declare num,S

2) Print "Enter number"

3) Input num

4) Print "Enter S"

5) Input S

6) If ( $\text{num} == 1$ )

$\text{sum} = 1$

Otherwise

6.1) Declare

term1,term2,term3,termSum,count,exponent,base,result,sum,innerCount

6.2) term1 = 1

6.3) term2 = 1

6.4) termSum = term1

6.5) count = 2

6.6) Repeat Until (count <= num)

6.6.1) exponent = S + termSum

6.6.2) termSum = term1+term2

6.6.3) term3 = term1+term2

6.6.4) term1 = term2

6.6.5) term2 = term3

6.6.6) If (count%2==0)

6.6.6.1) base = 2

Otherwise

6.6.6.1) base = 3

6.6.7) sum = 1

6.6.8) innerCount = 1

6.6.9) result = 1

6.6.10) Repeat Until ( $\text{innerCount} \leq \text{exponent}$ )

6.6.10.1)  $\text{result} = \text{result} * \text{base}$

6.6.10.2)  $\text{innerCount} = \text{innerCount} + 1$

6.6.11)  $\text{count} = \text{count} + 1$

6.6.12)  $\text{sum} = \text{sum} + \text{result}$

7) Print sum

### ***Problem # 5:***

1) Declare num

2) Print "Enter Number"

3) Input num

4)  $\text{numerator} = 1$

5)  $\text{denominator} = 1$

6)  $\text{result} = 0$

7)  $\text{count} = 1$

8) Repeat Until ( $\text{count} \leq \text{num}$ )

8.1)  $\text{term} = \text{numerator} / \text{denominator}$

8.2)  $\text{denominator} = \text{denominator} + 2$

8.2) If (count%2==0)

8.2.1) result = result-term

Otherwise

8.2.2) result = result+term

9) result = result\*4

10) Print result

### ***Problem # 8:***

1) Declare num,copyNum,sum,count,remainder,factorial

2) Print "Enter the number"

3) Input num

4) sum = 0

5) copyNum = num

6) Repeat Until(num>0)

6.1) count = 1

6.2) remainder = num%10

6.3) num = num/10

6.4) factorial = 1

6.5) Repeat Until (count <= remainder)

6.5.1) factorial = factorial\*count

6.5.2) count=count+1

6.5) sum = sum + factorial

6) If (sum == copyNum)

6.1) Print "Strong Number"

Otherwise

6.1) Print "Not a Strong Number"

### ***Problem # 1:***

Declare m,n,max,min,count

2) Print "Enter First number"

3) Input m

4) Print "Enter Second number"

5) Input n

6) If (m<n)

6.1)max = n

6.2)min = m

Otherwise

6.1)max = m

6.2)min = n

7) Repeat Until (min < = max)

7.1) If (min==0 OR min==1)

7.1.1)  $\text{min} = \text{min} + 1$

Otherwise

7.1.1)  $\text{count} = 2$

7.1.2) Repeat Until ( $\text{count} \leq \text{min}/2$  AND  $\text{min} \% \text{count} == 0$ )

7.1.2.1)  $\text{count} = \text{count} + 1$

7.3.1) If ( $\text{count} > \text{min}/2$ )

7.3.1.1) Print min

7.2)  $\text{min} = \text{min} + 1$

#### ***Problem # 4:***

1) Declare num, factor, count

2) Print "Enter number"

3) Input num

4)  $\text{factor} = 2$

5) Repeat Until ( $\text{factor} \leq \text{num}$ )

5.1) If ( $\text{num} \% \text{factor} == 0$ )

5.1)  $\text{count} = 2$

5.2) Repeat Until ( $\text{count} \leq \text{factor}/2$  AND  $\text{factor} \% \text{count} == 0$ )

5.2.1)  $\text{count} = \text{count} + 1$



5.3) If (count>factor/2)

5.3.1) Print factor

5.4) factor = factor+1

### ***Problem # 9:***

1) Declare num

2) Print "Enter the number"

3) Input num

4) primeFactor1 = 2

5) primeFactor2 = 3

6) primes = 2

7) Repeat Until (primes <= num)

7.1) count = 2

7.2) Repeat Until (count<primes AND primes%count != 0)

7.2.1) count = count + 1

7.3) If (count==primes)

7.3.1) primeFactor3 = count

7.4) If (primeFactor2 - primeFactor1==2)

7.4.1) Print primeFactor1,primeFactor2

7.5) primeFactor1 = primeFactor2

7.6) primeFactor2 = primeFactor3

7.7) primes = primes+1

### ***Problem # 7:***

1) Declare year,rainFallPerInch

2) year = 0

3) Repeat Until (year < 1)

4.1) Print "Enter no of years"

4.2) Input year

4) cnt = 1

5) noOfMonths = 12\*year

6) Repeat Until (cnt <= year)

6.1) innerCount = 1

6.2) sum = 0

6.3) Repeat Until (innerCount<=12)

6.3.1) Print "Enter Rainfall per inch for month", innerCount

6.3.2) Input rainFallPerInch

6.3.3) sum = sum + rainFallPerInch

6.4)  $\text{cnt} = \text{cnt} + 1$

8)  $\text{average} = \text{sum} / \text{noOfMonths}$

9) Print noOfMonths,sum,average

Problem # 6:

1) Declare term1,term2

2)  $\text{term1} = -1$

3) Repeat Until ( $\text{term1} < 0$ )

3.1) Print "Enter number 1: "

3.2) Input term1

3)  $\text{term2} = -1$

4) Repeat Until ( $\text{term2} < 0$ )

4.1) Print "Enter number 2: "

4.2) Input term2

5)  $\text{term3} = -1$

6)  $\text{count} = 1$

7) Repeat Until ( $\text{term3} < \text{term2}$  OR  $\text{term3} \geq 0$ )

7.1) Print term1,term2,term3

7.2)  $\text{term3} = \text{term1} - \text{term2}$

7.3)  $\text{term1} = \text{term2}$

7.4)  $\text{term2} = \text{term3}$

7.5)  $\text{count} = \text{count} + 1$

8) Print "This is a sumac sequence of length", count