1. **SECRET 7**

The Secret 7 is a secret investigation team consisting of  7 members. The team members meet once every fortnight. The Famous 5 is a rival gang and they  try to steal secrets from secret seven. In each of their meets they decide a passcode for the next meet. The passcode they set is a 4 digit number with same numbers in the even places and odd places. Your friend is a part of the group and seeks your help to identify the Secret 7 members. Can you help him out ???  
**Input format:**

Input consists of an integer corresponding to the passcode entered by the member.

**Output format:**

The Output consists of the strings "Passcode matched. Hi Secret 7!!!” or “Sorry!!! passcode mismatched. Wrong identification.”.

Refer sample input and output for formatting specifications.

**[All text in bold corresponds to input and the rest corresponds to output.]**  
**Sample Input and Output 1:**

Passcode:

**1231**

Sorry!!! passcode mismatched. Wrong identification.

**Sample Input and Output 2:**

Passcode:

**1010**

Passcode matched. Hi Secret 7!!!

gA screenshot of a computer

Description automatically generated

2. **Palindromic Prize**

A customer in the Personalised Gift Store is awarded a prize when their bill number is a 3-digit palindrome.Write a program for identifying the prize winners.

**Input Format:**

Input consists of a number that corresponds to the bill number.

**Output Format:**

The output consists of a string that is either 'yes' or 'no'. The output is 'yes' when the customer receives the prize and is 'no' otherwise.

**Sample Input 1:**

565

**Sample Output 1:**

yes

**Sample Input 2:**

568

**Sample Output 2:**

no

**Sample Input 3:**

66

**Sample Output 3:**

no

3. Number Pattern

Write a program to print the given pattern.  
 **Input Format:**

Input consists of a single integer.

**Output Format:**

Refer sample outputs. There is a trailing space at the end of each line.

**Sample Input 1:**

5

**Sample Output 1:**

1 2 3 4 5

1 2 3 4

1 2 3

1 2

1

**Sample Input 2:**

3

**Sample Output 2:**

1 2 3

1 2

1

4.**Number Pattern - Reverse**

Write a program to print the given pattern.

**Input Format:**

Input consists of a single integer.

**Output Format:**

Refer sample outputs. There is a trailing space at the end of each line.

**Sample Input:**

5

**Sample Output:**

5 4 3 2 1  
4 3 2 1  
3 2 1  
2 1  
1

**5. GRADE**

**Write a program to determine the grade of the student in a particular subject. Refer to the table given below for grade details.**

|  |  |
| --- | --- |
| **Marks scored** | **Grade** |
| **100** | **S** |
| **[90,100)** | **A** |
| **[80,90)** | **B** |
| **[70,80)** | **C** |
| **[60,70)** | **D** |
| **[50,60)** | **E** |
| **<50** | **F** |

**The interval [a,b) includes all numbers greater than or equal to a and less than b.**

**Input and Output Format:  
 Input consists of a single integer that corresponds to the marks scored by the student.**

**Print "Invalid Input" if it is not in the range 0 to 100.**

**Refer sample input and output for formatting specifications.**

**[All text in bold corresponds to input and the rest corresponds to output.]**

**Sample Input and Output 1:**

**Enter the marks**

**85**

**The student obtained a B grade**

**Sample Input and Output 2:**

**Enter the marks**

**850**

**Invalid Input**

6. **Sorted Prize**

A customer in the Personalised Gifts Store is awarded a prize when their bill number is a 3-digit number and all the 3 digits are in sorted order. (Examples ---> 379, 256, 973, 652, 225, 522 ...]

Icon

Description automatically generated                          Icon

Description automatically generated

Help Gita in identifying the prize winners.

**Input Format:**

Input consists of a number which corresponds to the bill number.

**Output Format:**  
The output consists of a string that is either 'yes' or 'no'. The output is yes when the customer receives the prize and is no otherwise.

**Sample Input 1:**

565

**Sample Output 1:**

no  
**Sample Input 2:**

620

**Sample Output 2:**

yes  
**Sample Input 3:**

66

**Sample Output 3:**

No

7.**Series-II**

Write a program to generate the below series:

4,32,128,256, ….n

**Input and Output Format:**

The first line is the input consists of a single integer that corresponds to n.

The output consists of the series 4,32,128,…..n separated by a space.

**Sample Input 1:**

4

**Sample Output 1:**

4 32 128 256

**Sample Input 2:**

2

**Sample Output 2:**

4 32

**Sample Input 3:**

6

**Sample Output 3:**

4 32 128 256 256 0

8.Day 13 Criteria

Write a program to generate the below series:  
5,17,37,65,145, 197,….A picture containing female

Description automatically generated

**Input Format:**

Input consists of a single integer which corresponds to n.

**Output Format:**Output consists of the terms in the series separated by a blank space.  
**Sample Input 1:** 6

**Sample Output 1:**

5 17 37 65 101 145  
**Sample Input 2:**

15

**Sample Output 2:**

5 17 37 65 101 145 197 257 325 401 485 577 677 785 901

9.P3 - Palindrome

**A positive integer is called a palindrome if its representation in the decimal system is the same when read from left to right and from right to left.**

**Write a program to find whether the given positive integer K is a palindrome or not.**

**Input Format**

**The first line contains an integer, which corresponds to K.**

**Output Format**

**Output consists of a single string --- “palindrome” or “not a palindrome”.**

**Sample Input 1:**

**808**

**Sample Output 1:**

**palindrome**

**Sample Input 2:**

**2113**

**Sample Output 2:**

**not a palindrome**

10.Alphabet Pattern 9

**Write a program to print the given pattern.**

**Input Format:**

**Input consists of a single integer which corresponds to the number of rows..**

**Output Format:**

**Refer sample output.**

**Sample Input:**

**5**

**Sample Output:**

**A**

**BB**

**CCC**

**DDDD**

**EEEEE**

11. **P1 - Armstrong Number**

**An Armstrong number of three digits is an integer such that the sum of the cubes of its digits is equal to the number itself. For example, 371 is an Armstrong number since 3^3 + 7^3 + 1^3 = 371.**

**Write a program to find whether a given 3-digit number is an Armstrong number or not.**

**Input Format:**

**Input consists of a single integer.**

**Output Format:**

**Refer sample output for details.**

**Sample Input 1:**

**153**

**Sample Output 1:**

**Armstrong Number**

**Sample Input 2:**

**101**

12. P3 – Number series

**Write a program to print the series ---- 1,3,6,10,15 ….. upto ‘n’ terms.**

**Input Format:**

**Input consists of a single integer.**

**Output Format:**

**Refer sample output for details.**

**Sample Input:**

**6**

**Sample Output:**

**1 3 6 10 15 21**

13. Pattern 1

**Write a program to print the given pattern.**

**Input Format:**

**Input consists of a single integer.**

**Output Format:**

**Refer sample outputs. There is a trailing space at the end of each line.**

**Sample Input 1:**

**5**

**Sample Output 1:**

**1 2 3 4 5**

**1 2 3 4**

**1 2 3**

**1 2**

**1**

**Sample Input 2:**

**3**

**Sample Output 2:**

**1 2 3**

**1 2**

**1**

**14.Lucky Customer Award**

**Every day few of the customers are given a lucky gift. Lucky gift is given to a customer when his / her bill number ends with the last digit of that day number or when the bill number is a multiple of the day number.Can you help Gita in deciding whether a customer gets the lucky gift or not?**

**Input Format:**

**Input consists of 2 integers that correspond to the day number in today's date and the bill number.  
Output Format:**

**Output is either 'yes' or 'no'. Output is yes when the customer gets the lucky gift and is no otherwise.**

**Sample Input 1:**

**5**

**45**

**Sample Output 1:**

**yes**

**Sample Input 2:**

**14**

**34**

15.Alphabet Pattern 1

**Write a program to print the given pattern.**

**Input and Output Format:**

**Input consists of a single integer that corresponds to the number of rows,n.**

**The output is the alphabet pattern for the given input,n.**

**Sample Input 1:**

**5**

**Sample Output 1:**

**A**

**AB**

**ABC**

**ABCD**

**ABCDE**

**Sample Input 2:  
7**

**Sample Output 2:  
A  
AB  
ABC  
ABCD  
ABCDE  
ABCDEF  
ABCDEFG**

16. **Day 11 Criteria**

**Write a program to generate the below series:**

**24,60,120,210,…**

**Input Format:**

**Input consists of a single integer that corresponds to n.**

**Output Format:**

**The output consists of the terms in the series separated by a blank space.**

**Sample Input 1:**

**5**

**Sample Output 1:**

**24 60 120 210 336**

**Sample Input 2:**

**10**

**Sample Output 2:**

**24 60 120 210 336 504 720 990 1320 1716**

17. Alphabet Pattern 4

**Write a program to print the given pattern.**

**Input Format:**

**Input consists of a single integer which corresponds to the number of rows..**

**Output Format:**

**Refer sample output.**

**Sample Input:**

**5**

**Sample Output:**

**E**

**ED**

**EDC**

**EDCB**

**EDCBA**

18 Write a program to generate the first n terms in the series --- 1,4,9,16,25, ....

**Input Format:**

Input consists of a single integer which corresponds to n.

**Output Format:**

Output consists of the n terms in the series separated by a blank space.

**Sample Input:**

7

**Sample Output:**

1 4 9 16 25 36 49