Programming Fundamentals (LAB)

Practice

1. Write a Program That asks a Number in the **Fibonacci** series. It should only output the **last Fibonacci number** before the **Number** asked by user and print if the **last Fibonacci Number** is a **Prime Number** or not.
2. You guys know about the **Speed of Light**. And it is **constant**. What is the **Constant**. ***Google it my Friend***. Write a Program that will output the **Highest Number** that can **Divide the Speed of Light**.
3. Write a Program that will output a **Triangle Pattern** based on User input. Make Sure You are only allowed to **print the outer lines of the Triangle**. You can also use the following characters to represent the Triangle **(forward slash, backward slash, underscore, full stop).** You can create a **Perfect Triangle** using this. Output only the lines **not the Inner Area**. (**3 Star Problem**)
4. Get a Number from User. Print **Fizz** if the number can be **divided by 3**. Print **Buzz** if the number can be **divided by 5**. Print **FizzBuzz** if the number can be divided by **both 3 and 5**. **You are not allowed to use any logical Condition in this.**
5. Write a Program that will stop itself if a user enters a character input when an integer is expected. **No Combination of Logical Conditions Allowed**. (**3 Star Problem**)
6. So Here is the Problem. Recently the **International System of Units** has decided that they would make changes to Rock Paper Scissor. According to the Changes, everything is changed. Now Rock is Rod, Paper is Register and Scissor is Axe. But the Thing is Now Register can beat rod. But Rod can not beat register. Make a Program that will implement the Above Rod, Register, Axe. **(Difficult to Understand Problem)**.
7. Write a Program that Converts a Roman Number to Integer Number and Vice versa.
8. The Best of All. The Game of **Cryptography**. You and Annus are 2 **Friends** and are working in a **Top-Secret Organization (TSO)**. You are required to share message with Annus, but the thing is everything is sniffed and captured. You are to encode your **message** by a **number**. You forward that **number** to **Annus** and the **encoded message**. And by using that Number and the encoded message, **Annus decodes** your Message. Here is the **Cipher** that you need to implement in the Program **Encoder** and **Decoder**.

   Example: *If the Message is* ***Hello Friend*** *and The Number is* ***5****. Add 5 to each of the characters like What is the Position of H in Alphabets 8. Add 8+5=13. What is the Alphabet at 13 Position? For Sure, M. It will become Mello Friend. Repeat the same for e,l,l,o and F,r,I,e,n,d. It will become* ***Mjqqt Kwnjsi****.*
9. You are supposed to ask an input from a user. If the input is a **Number** print the **Number** and output, it is a **number**. If the **input** is a **Lowercase** Character. **Print** the Input is a **Lowercase Character**. And the same case for **Uppercase Character**. If the input is a **Symbol**, Print the Input is a **Symbol** along with **Symbol Printing**. If it is something special like **space** or **something** like that. *Print it is something special to computer and unusual for humans*.
10. Find the **Average** of **Odd Numbers** and **Even Numbers** in each range by the user.
11. You are Asked to Print a **Pascal's Triangle** using a **Computer Program** where the User Gives the **Last Row Number**.
12. Create a Program that will calculate the **Roots** of a **Quadratic Equation**.
13. Create a Program that will Solve a Set of **Linear Equations**. Ask the **Coefficients** of the variables and number of **variables** to find.
14. Create a program that checks if a given **number** is a **perfect number** *(a number whose divisors sum up to itself, excluding itself).*

Programming Fundamentals (LAB)

Practice

15. Create a Program that should Print a **Nth Prime Number** and check if the Number is an **Armstrong Number** or not.
16. Create a Program that should output a value of **Euler constant**. Don't You know? Then You are **Dumb**. Forgot those **limit** questions that used **logarithm**? What was the **base** of those **logarithm questions**? Huh. Didn't know. Not **10**. But it was e. Only Ask the User how much precise (a Number) the **Euler Constant** should be. (Hint: Ask on WhatsApp)
17. Write a Program that asks the User to Enter **Numbers** of an **Arithmetic Series**. The User should Miss the number in that series and advance to the next number. Whenever the user misses that number, Your Program should Tell the User what the number was missed.
18. Write a Computer Program that should Tell the User the **nth Term** of a **Binomial Expression**.
19. Write a **Computer Program** that should ask the user about **a** and **b** and the power of the whole. Like **$(ax+b)^n$** Now. Make a Computer Program that should output the **Sum of Coefficients**. How many **Coefficients of that Expression**. Etc.
20. Write a Computer Program that checks if the Number is a **Kaprekar number**. If So, Check if it is a **prime number or not**.
21. Write a Computer Program that checks if the Number is a **Harshad number**. If So, Check if it is a **perfect square or not.**
22. Determine the **square root of a number without using the sqrt function**.
23. Find the **day** of the **week** for a **given date**.
24. Create a **Computer Program** that checks the **sum of a harmonic series**.
25. Generate a **random number** and **ask the user** to **guess** it with **Given Range**
26. Write a **Computer Program** that Prints the **LCM** and the **HCF** of **3 Numbers** given by user.
27. Create a **Program** that should **calculate** the value of **PI**. **Irrational Constant**. Don't Know how? **Google** it. Still unable to **Understand** how? Research it on Google for **Algorithms** for Finding Value of PI. Still Confused. *Message me on WhatsApp*.
28. Create a Program that should print the value of **sine**, **cosine**, and **tangent**. Then Print their **Periods**. You are not allowed to use any **built-in functions**.
29. Convert temperature from Celsius to Fahrenheit.
30. Create a Program that should print the **area** of any **regular polygon**. Make Sure to **Ask user** for only The **Number of Sides** and the **Length of 1 Side**.
31. Create a Program that should print an **OTP Code** make Sure the **OTP** is different than the **last OTP**. What is an **OTP**? Huh. The **OTP** is the **Code** sent to your Mobile when you open an **account** on something new device. *OTP = 6 Digit Numeric Code*.
32. Write a **Computer Program** that should **print** what is the **probability** of **guessing** the **OTP code** if the **X Digit** is known by the **user** and **N Number of Digits** are known.
33. Write a **Computer Program** that should **Print** a **Baas** So Jao Bohat Programming krli Itni Meney bhi nahi ki jitni in Tasks krney key baad ap logon ney kr li hai. Best of Luck for Programming Fundamentals. Loved the Tasks, Then Drop me a Thanks or Start a Conversation at the given WhatsApp Number ***+923265822225***.

Feel Free to Seek Help in These in Programming or in Tasks