Exercise_02

1. Write Java program to allow the user to input his/her age. Then the program will show if the person is eligible to vote. A person who is eligible to vote must be older than or equal to 18 years old.
   Enter your age: 18
   You are eligible to vote.
2. Write a Java program to determine whether an input number is an even number.
3. Write Java program to allow the user to input his/her age. Then the program will show if the person is eligible to vote. A person who is eligible to vote must be older than or equal to 18 years old.
   Example :
   Enter your age: 18
   You are eligible to vote.
4. Write a Java program that determines a student's grade.
   The program will read three types of scores (quiz, mid-term, and finalscores) and determine the grade based on the following rules:
   -if the average score >=90% =>grade=A
   -if the average score >= 70% and <90% => grade=B
   -if the average score>=50% and <70% =>grade=C
   -if the average score<50% =>grade=F
   See the example output below:
   Quiz score: 80
   Mid-term score: 68
   Final score: 90
   Your grade is B.
5. Write a Java program to calculate the revenue from a sale based on the unit price and quantity of a product input by the user.The discount rate is 10% for the quantity purchased between 100 and 120 units, and 15% for the quantity

purchased greater than 120 units. If the quantity purchased is less than 100 units, the discount rate is 0%.{Revenue = (unit price * quantity) - discount }
See the example output as shown below:
Enter unit price: 25
Enter quantity: 110
Discount : 275.0$
The revenue from sale: 2475.0$

6. Write a Java program to detect key presses.If the user pressed number keys(from 0 to 9), the program will tell the number that is pressed, otherwise, program will show "Not allowed".
7. Write a Java program that allows the user to choose the correct answer of a question.
   See the example below:
   What is the correct way to declare a variable to store an integer value in Java?
   a. int 1x=10;
   b. int x=10;
   c. float x=10.0f;
   d. string x="10";
   Enter your choice: c
   Invalid choice
   a. int 1x=10;
   b. int x=10;
   c. float x=10.0f;
   d. string x="10";
   Enter your choice: b
   Congratulations!

8. Given a string, take the last char and return a new string with the last char added at the front and back, so "cat" yields "tcatt". The original string will be length 1 or more.

backAround("cat") → "tcatt"
backAround("Hello") → "oHelloo"
backAround("a") → "aaa"

9. Write a java program to do the following computations using shift operators.
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    i. Input : 65536
    ii. Output : Output 1: 65536 * 512
    Output 2: 65536 / 512
10. Write a program to produce the following output using shift operators.
    a. 10010,100100,100,10000,100000

    Hint: Use 'Integer.toBinaryString(x)' for converting integer to binary.
11. Write a java program to read two integers 'A' and 'B' and perform following operations:
    a. A & B
    b. A | B
    c. A ^ B
    d. A == B
    e. A != B
12. Write a program to check the equality of two numbers using boolean operators.
13. Write a java program to add one to the given number using boolean operators xor and negation.

    Ex: input : 10(in binary)
    Output: 11(in binary)
14. Write java program to check the given number is power of 2 without using for loop.