Objective:

- To get a grip on problem solving based on decision/selection/condition structure.

Devise Solution of the following problems using Pseudo Code

1. Input age and print the message "eligible" if the age is valid enough to have a driving license otherwise print "not eligible".

2. Input an integer value representing the weekday (1, 2, …, 7), and give the day of the week (Monday, Tuesday, …, Sunday).

3. Write pseudo code, which input a number, and display its absolute value.

4. Check if marks are greater than 80 then print "good luck", otherwise print "better luck next time"

5. Check whether a number A is divisible by another number B.

6. Input a 4-digit number and display each digit of it separately on screen such that a dash symbol is placed among each digit.
   Sample Run:
   Enter a 4-digit Number: 5609
   5-6-0-9

7. Julio Cesar Chavez Mark VII is an interplanetary space boxer, who currently holds the championship belts for various weight categories on many different planets within our solar system. However, it is often difficult for him to recall what his "target weight" needs to be on earth in order to make the weight class on other planets. Write a pseudo code to help him keep track of this.
   It should ask him what his earth weight is, and to enter a number for the planet he wants to fight on. It should then compute his weight on the destination planet based on the table below:

#	Planet	Relative gravity
1	Venus	0.78
2	Mars	0.39
3	Jupiter	2.65
4	Saturn	1.17
5	Uranus	1.05
6	Neptune	1.23

   So, for example, if Julio weighs 128 lbs. on earth, then he would weigh just under 50 lbs. on Mars, since Mars' gravity is 0.39 times earth's gravity. (128 * 0.39 is 49.92)
   Sample Run 1
   Please enter your current earth weight: 128

   I have information for the following planets:
   1. Venus 2. Mars 3. Jupiter
   4. Saturn 5. Uranus 6. Neptune

   Which planet are you visiting? 2
   Your weight would be 49.92 pounds on that planet.

8. An admission charge for The Little Rep Theater varies according to the age of the person. Develop a solution to print the ticket charge given the age of the person. The charges are as follows:
   a. Over 55: $10.00
   b. 21–54: $15.00
   c. 13–20: $10.00
   d. 3–12: $5.00
   e. Under 3: Free

9. Determine the status of students (Safe/Dropped/Probation). Student is dropped if CGPA is less than 1.7, on probation if CGPA is greater than or equal to 1.7 but less than 2.0, otherwise student is safe.

10. Input from user three numbers and display on screen the largest, second largest and smallest number of them.

Sample Run 1:	**Sample Run 2:**
Enter three Numbers: 100 34 923 Largest Number: 923 Second Largest Number: 100 Smallest Number: 34	Enter three Numbers: 92 34 92 Largest Number: 92 Second Largest Number: 92 Smallest Number: 34

11. Calculate pay of an employee based on the hours worked. The input includes the employee total hours worked this week and his hourly pay rate. The employee is to be paid his basic wage for the first 40 hours worked and 50% more for all the hours above 40 (overtime pay). Output the regular pay, overtime pay, and total pay for the week. If the employee worked 40 hours or less then do not display any information about overtime pay.

Sample Run 1	***Sample Run 2***
Enter Employee Total Hours Worked: 50 Enter Employee Hourly Pay Rate: 10 Regular Pay: 400 Overtime Pay: 150 Total Pay: 550	Enter Employee Total Hours Worked: 20 Enter Employee Hourly Pay Rate: 5 Regular Pay: 100 Total Pay: 100

12. Input marks of a student and display the letter grade and grade point.

a. Policy for letter grade is as follows:

Percent Marks	Letter Grade	Grade Point
0 – 49	F	0
50 – 54	D	1
55 – 57	C-	1.7
58 – 60	C	2
61 – 64	C+	2.3
65 – 69	B-	2.7
70 – 74	B	3
75 – 79	B+	3.3
80 – 84	A-	3.7
85 – 100	A	4

13. Purchase Sheets

A customer needs a specific amount of paper. Following packages are available in market:

1. The charges on the paper are $0.10 for single sheets,
2. $0.055 for amounts in multiples of 100 sheets,
3. $0.04 in multiples of 500 sheets, and
4. $0.03 in multiples of 1000 sheets.

Develop a pseudo code to calculate the type and number of package for the least amount of money the customer should buy, given the minimum number of sheets the customer needs. ***For example,*** if the customer needs 380 sheets, the amount she would pay when buying at single sheet rate would be $38, and the amount she would pay when buying in multiples of 100 would be $22.00. However, if the customer bought 500 sheets, the cost would be $20.00. It would be cost effective for the customer to buy a package of 500 sheets.

14. Input a 3-digit number and check whether it's a palindrome or not. Palindrome is a word, phrase, or sequence that reads the same backward as forward. For example, 717 is a palindrome number, "EYE" is palindrome word.

Sample Run 1	***Sample Run 2***
Enter a Three Digit Number: 797 797 is Palindrome	Enter a Three Digit Number: 231 231 is not Palindrome