

### LAB 3

- Given a railway seat number, the task is to check whether it is a valid seat number or not. Also print its berth type i.e lower berth, middle berth, upper berth, side lower berth, side upper berth as per the figure below.

|                  |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------------------|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Upper berth      | → | 3 | 6 | 11 | 14 | 19 | 22 | 27 | 30 | 35 | 38 | 43 | 46 | 51 | 54 | 59 | 62 | 67 | 70 |
| Middle berth     | → | 2 | 5 | 10 | 13 | 18 | 21 | 26 | 29 | 34 | 37 | 42 | 45 | 50 | 53 | 58 | 61 | 66 | 69 |
| Lower berth      | → | 1 | 4 | 9  | 12 | 17 | 20 | 25 | 28 | 33 | 36 | 41 | 44 | 49 | 52 | 57 | 60 | 65 | 68 |
|                  |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Side lower berth | → | 7 | 8 | 15 | 16 | 23 | 24 | 31 | 32 | 39 | 40 | 47 | 48 | 55 | 56 | 63 | 64 | 71 | 72 |
| Side upper berth | ↑ |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

- A character is entered through keyboard. Write a C program to determine whether the character entered is a capital letter, a small case letter, a digit or a special symbol using if-else and switch case. The following table shows the range of ASCII values for various characters.

#### Characters

#### ASCII values

A – Z

65 – 90

a – z

97 – 122

0 – 9

48 – 57

Special symbols

0 – 47, 58 – 64, 91 – 96, 123 – 127

- For a 3-digit input number (integer) print the numbers in words, e.g., input: 123, output: one hundred twenty three. Use the switch statement.
- WAP to compute the pension of an employee.

If the person is male.

Age  $\geq$  90 pension is 4000

Age  $\geq$  60 pension is 6000

Age  $<$  60 pension is 0

if the person is female.

Age  $\geq$  90 pension is 3000

Age  $\geq$  60 pension is 5000

Age  $<$  60 pension is 0

5. Write a C program to find largest number among three numbers using conditional operator.
6. A library charges a fine for every book returned late. For first 5 days the fine is 50 paise, for 6-10 days fine is one rupee and above 10 days fine is 5 rupees. If you return the book after 30 days your membership will be cancelled. Write a program to accept the number of days the member is late to return the book and display the fine or the appropriate message.
7. The policy followed by a company to process customer orders is given by the following rules: (a) If a customer order is less than or equal to that in stock and has credit is OK, supply has requirement. (b) If has credit is not OK do not supply. Send him intimation. (c) If has credit is Ok but the item in stock is less than has order, supply what is in stock. Intimate to him data the balance will be shipped. Write a C program to implement the company policy.
8. Write a C program to Find the Largest Number among Three Numbers using nested if-else.
9. Given the coordinates (x, y) of a center of a circle and it's radius, write a program which will determine whether a point lies inside the circle, on the circle or outside the circle.
- 10.
11. Write a C program to find largest number among four numbers using conditional operator.
12. Write a Menu driven program using 'switch' which has the following options:
  - (i) Positive or negative
  - (ii) odd or even.
13. Write a program using conditional operators to determine whether a year entered through the keyboard is a leap year or not.
14. A five digit number is entered through the keyboard. Write a program to reverse the number and to check whether the reversed number is same as the original number or not.
15. Write a program to take inputs between the range 10 to 50. Numbers not in range should be ignored. Count the valid numbers and total numbers input. Program stops when -1 is the input.