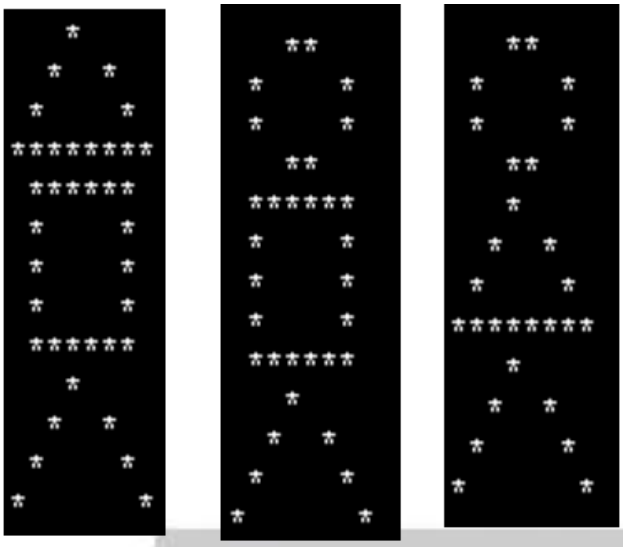
Lab 5

Ex1:



rocket male female

Write the following functions

void drawTriangle(void);

void drawRectangle(void);

void drawCircle(void);

void drawInvertedV(void);

in main(), call the above functions appropriately to draw Rocket, Male, and Female

Ex2: write a function to convert a value in inches to centimeters

double inchToCm(double);

Call the function in main() to test

Sample run:

Enter the distance in inches: 3

3.00 inches = 7.62 cm

Ex3: write a function to convert a value in Fahrenheit to Celsius

double fToC(double);

Call the function in main() to test

Sample run:

Enter temp in Fahrenheit: 98.4

Temp 98.4 in Fahrenheit = 36.89 Celsius

Ex4: write a function to check a year is a leap year or not

int isLeapYear(int); //return 0: false, 1: true

write a program for users to key in a year then print out it is a leap year or not using the above function

users must key in 0 or a negative number to end the program.

Sample run:

Enter a year: 1947

It is NOT a leap year.

Enter a year: 2012

It is a LEAP year

Enter a year: 0

Ex5: write a function for users to key in 03 **distinct** integers and the function will return the smallest number of all.

int getSmallest(int, int, int);

Write a program for users to key in 3 numbers and print out the smallest number using the above function

Users must key in 2 equal numbers to end the program

Sample run:

Enter 3 integers: 12 3 11

3 is the smallest.

Enter 3 integers: 121 442 199

121 is the smallest.

Enter 3 integers: 0 1 1

Ex6:

Write a program **magicNumber.c** to read two positive integers, each with at most 5 digits, and for each integer, add up the digits (from right) in positions 1, 3 and 5. The right-most digit of the sum is the required answer.

For example, if the input is 76524, then adding up the digits 4, 5 and 7, we get 16.

The answer is hence 6.

Your program should contain a function **getMagic(…)** to compute and return the answer.

You are to decide on its parameter(s).

Sample run:

```
Enter 1st value: 76524
Magic number = 6
Enter 2nd value: 8946
Magic number = 5
```

Ex7:

Write 2 functions

- **int containDigit7(int); //**return 1 if the input has digit 7; otherwise return 0
- **int sumWithout7(int);** //return the sum of all integers from 1 to n (input), excluding those have digit 7

Hint: **sumWithout7()** will call **containDigit7()** while calculating the sum.

Write main() calling **sumWithout7()** to test.

Sample run 1:

Enter n: 10

Sum without 7 is: 48

Sample run 2:

Enter n: 20

Sum without 7 is: 186

Ex8: (nested loop)

Write function **printMenu()** to print the menu below

```
+-----------------------------------------------------------------+
|                  EMPLOYEE MANAGEMENT PROGRAM                    |
+-----------------------------------------------------------------+
|1. Input |2. Sort |3. Analyze |4. Find |5. Save |6. Open |7. Exit |
+-----------------------------------------------------------------+
```

Write function **toContinue()** to print the question below

```
Do you want to continue ?
- Yes, I do. (press 'y', 'Y')
- No, I don't. (press 'n', 'N')
- Please clear the screen ! (press 'c', 'C')
```

In main(), do the following steps:

Step 1: print the above menu using **printMenu()**

Step 2: ask users to key in their choice ("Please enter your selection: ")

If users type in invalid input, ask again until they key in correctly.

Step 3: print out: "You have selected xxx" in which xxx is users' selection

If users type in 7, the program should end.

Step 4: print the question using **toContinue()** then wait for users to key in the answer.

if users choose Yes, the program goes back to step 1

if users choose No, the program should end

if users choose 'C' or 'c', call system function **system("cls");** then go back to step 1.

if users type in invalid input, ask again until they key in correctly.