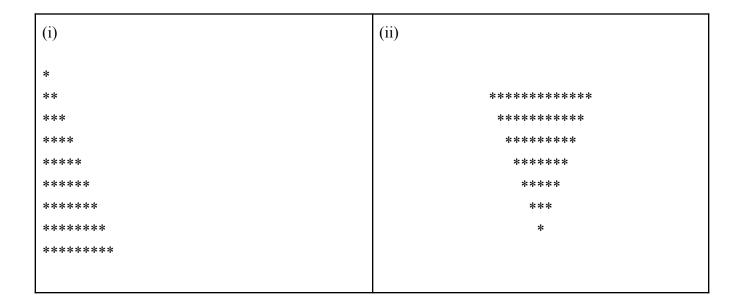
## **Worksheet 3**

## **Instructions**

- 1) Use only MARS simulator for MIPS32 programming in the lab.
- 3) Save your programs in a separate folder with .asm extension and delete it from the system after the final evaluation is done.
- 4) Show the working programs to the TAs available before submitting your word file at blackboard.
- 5) Any doubts should be clarified with the Tas available in labs

## **Questions:**

- 1. Write a MIPS assembly language program to perform left shifting on an integer. The integer and the number of bits to be shifted will be provided by the user as input.
- 2. Write a MIPS assembly language program to print following given patterns of \*. Take input (like number of rows to be printed) from the user.



3. Write a MIPS assembly language program to print the sum of two integers, difference and product of two

integers	(to	be	taken	by	the	user	as	input)	by	using	different	functions	(Procedures)	for	all	three
arithmet	ic op	era	tions. 7	The s	sequ	ence	of t	he func	ction	is to be	written ir	your code	e is given belo	W.		

funcADD

funcMUL

funcSUB

D	esir	ed	01	uti	ρu	ıt-

Product of two numbers is
Sum of the two numbers is
Difference of two numbers is

- 4. Write a MIPS assembly language program to convert a user given integer to a binary number. Consider both, the positive and negative integers. In case of a negative integer, the output has to be in 2's complement form. Print the binary number as string.
- 5. In India, We have all adults vote to elect their representatives irrespective of their caste, religion, race, gender, place of birth, or economic status. We call this Universal Adult Franchise. It states that every individual has one vote. Write an MIPS assembly language program to print the voting criteria for an individual as per the conditions given below:
  - If age < 18 the person is not allowed to vote,
  - If age > =18 AND person doesn't have voter id card, then he/she can't vote
  - If age > =18 AND person has voter id card, then he/she can vote.
- 6. Write a MIPS assembly language program to check whether the given string is a palindrome or not.