CSE 1110: Introduction to Computer Systems

Assignment 2

1. Program that will decide whether a number is positive or not.

Sample input	**Sample output**
100	Positive
-11.11	Negative
0	Positive

2. Program that will decide whether a number is even or odd.

Sample input	**Sample output**
50	Even
-77	Odd
0	Even

3. Program that will read from the console a random positive nonzero number and determine if it is a power of 2.

Sample input	**Sample output**
1	Yes
512	Yes
1022	No

4. Program that will decide whether a year is leap year or not.

Yes, if (Year % 4 == 0 && year % 100 != 0) || (Year % 400 ==0)

Sample input	**Sample output**
2000	Yes
2004	Yes
2014	No

5. Write a program (WAP) that will print following series upto N^{th} terms.

1, 0, 1, 0, 1, 0, 1, 0, 1, 0, 1, 0, 1, 0, 1, 0, 1, …….

Sample input	***Sample output***
1	1
2	1, 0
3	1, 0, 1
4	1, 0, 1, 0
7	1, 0, 1, 0, 1, 0, 1
13	1, 0, 1, 0, 1, 0, 1, 0, 1, 0, 1, 0, 1

6. Write a program (WAP) that will find the grade of **N** students. For each student, it will take the marks of his/her the attendance (on 5 marks), assignment (on 10 marks), class test (on 15 marks), midterm (on 50 marks), term final (on 100 marks). Then based on the tables shown below, the program will output his grade.

Attendance (A)	5%
Assignments (HW)	10%
Class Tests (CT)	15%
Midterm (MT)	30%
Final (TF)	40%

Marks	Letter Grade	Marks	Letter Grade	Marks	Letter Grade
90-100	A	70-73	C+	Less than 55	F
86-89	A-	66-69	C		
82-85	B+	62-65	C-		
78-81	B	58-61	D+		
74-77	B-	55-57	D		

Sample input (A,HW,CT,MT,TF)	**Sample output**
2 5 10 15 44.5 92.5 0 7.5 5 20 55.5	Student 1 : A Student 2 : F

7. Write a program (WAP) that will find x^y (x to the power y) where x, y are positive integers.

Sample input(x,y)	*Sample output*
5 2	25
2 0	1
6 1	6
0 5	0

8. WAP that will find the GCD (greatest common divisor) and LCM (least common multiple) of two positive integers.

Sample input	*Sample output*
5 7	GCD: 1 LCM: 35
12 12	GCD: 12 LCM: 12
12 32	GCD: 4 LCM: 96

9. WAP that will determine whether an integer is palindrome number or not.

Sample input	*Sample output*
9	Yes
91	No
222	Yes
12321	Yes
110	No

10. Write a program (WAP) that will print Fibonacci series upto N^{th} terms.

1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, …….

Sample input	*Sample output*
1	1
2	1, 1
4	1, 1, 2, 3
7	1, 1, 2, 3, 5, 8, 13