

(a) Which is more appropriate for reading in a multi-word string?

`gets()` `printf()` `scanf()` `puts()`

(b) If the string "Alice in wonder land" is fed to the following `scanf()` statement, what will be the contents of the arrays `str1`, `str2`, `str3` and `str4`?

```
scanf ( "%s%s%s%s", str1, str2, str3, str4 );
```

(c) Write a program that extracts part of the given string from the specified position. For example, if the string is "Working with strings is fun", then if from position 4, 4 characters are to be extracted then the program should return string as "king". If the number of characters to be extracted is 0 then the program should extract entire string from the specified position.

- (d) Write a program that converts a string like "124" to an integer 124.
- (e) Write a program that generates and prints the Fibonacci words of order 0 through 5. If $f(0) = "a"$, $f(1) = "b"$, $f(2) = "ba"$, $f(3) = "bab"$, $f(4) = "babba"$, etc.
- (f) To uniquely identify a book a 10-digit ISBN (International Standard Book Number) is used. The rightmost digit is a checksum digit. This digit is determined from the other 9 digits using the condition that $d_1 + 2d_2 + 3d_3 + \dots + 10d_{10}$ must be a multiple of 11 (where d_i denotes the i^{th} digit from the right). The checksum digit d_1 can be any value from 0 to 10: the ISBN convention is to use the value X to denote 10. Write a program that receives a 10-digit integer, computes the checksum, and reports whether the ISBN number is correct or not.
- (g) A Credit Card number is usually a 16-digit number. A valid Credit Card number would satisfy a rule explained below with the help of a dummy Credit Card number—4567 1234 5678 9129. Start with the rightmost - 1 digit and multiply every other digit by 2.

4 5 6 7 1 2 3 4 5 6 7 8 9 1 2 9

8 12 2 6 10 14 18 4

Then subtract 9 from any number larger than 10. Thus we get:

8 3 2 6 1 5 9 4

Add them all up to get 38.

Add all the other digits to get 42.

Sum of 38 and 42 is 80. Since 80 is divisible by 10, the Credit Card number is valid.

Write a program that receives a Credit Card number and checks using the above rule whether the Credit Card number is valid.