Numbers, Strings, Loops, Arrays.

1. Given a number ***n* *( n > 0 )***. Print Fibonacci series up to ***n***.

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| **Input** | **Output** |
| 7 | “0, 1, 1, 2, 3, 5 “ |
| 45 | “0, 1, 1, 2, 3, 5, 8, 13, 21, 34” |

1. Insert a number. Calculate product and sum of the digits of the number. If product is divisible by the sum, print the quotient, otherwise print the remainder.

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| **Input** | **Output** |
| 1233 | ‘Quotient is 2.’ |
| 5 | ‘Quotient is 1.’ |
| 0 | ‘Cannot calculate.’ |
| 455 | ‘Remainder is 2.’ |

1. Given an array of numbers. Find the maximum and minimum elements in array. Calculate their difference and check is there such an element in the array or not.

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| **Input** | **Output** |
| [1, 10, 2, 9, 2, 3, 9, 4] | true |
| [1, 4, -43, 12] | false |

1. Given an array of numbers. Find the index of the second maximum element.

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| **Input** | **Output** |
| [23, -98, 0, -456, 12, 8] | 4 |
| [-60, 2, 43, -18, 5, -19, 36, 7, 56 ] | 2 |

1. Given an array of numbers, padding amount and repeat count. Pad the array in the following way: the padding amount specifies how many elements should be taken from the array edges, the repeat amount specifies how many times the pad should be repeated. Also, you should check that *padding amount <= length of array.*

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| **Input** | **Output** |
| array = [1, 2, 3, 4] padAmount = 1 repeat = 3 | [1, 1, 1, 1, 2, 3, 4, 4, 4, 4] |
| array = [1, 2, 3, 4] padAmount = 2 repeat = 1 | [1, 2, 1, 2, 3, 4, 3, 4] |
| array = [1] padAmount = 1 repeat = 3 | [1, 1, 1, 1, 1, 1, 1] |
| array = [1] padAmount = 2 repeat = 3 | “Invalid padding amount” |

6. Write a program to print rectangle pattern for given number using loop. (in this example n = 5)

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7.Write a program to print rectangle pattern for given number using loop. (in this example n = 5)

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8. Print the following number pattern.

1  
 12  
 123  
 1234  
 12345  
 1234  
 123  
 12  
 1