Teach to give assignment 1

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#Question 1: FizzBuzz  
#Write a program that prints the numbers from 1 to 100. For multiples of 3, print "Fizz"; for multiples of 5, print "Buzz"; and for numbers that are multiples of both 3 and 5, print "FizzBuzz".  
for (a in seq(1:100)){ if(a %% 5==0 & a %% 3==0){  
 print("FizzBuzz")  
}else if(a %% 3== 0){  
 print("Fizz")  
}else if (a%%5==0){  
 print("Buzz")  
}else{  
 print("not a multiple")  
}  
}

## [1] "not a multiple"  
## [1] "not a multiple"  
## [1] "Fizz"  
## [1] "not a multiple"  
## [1] "Buzz"  
## [1] "Fizz"  
## [1] "not a multiple"  
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## [1] "Fizz"  
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## [1] "FizzBuzz"  
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## [1] "FizzBuzz"  
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## [1] "FizzBuzz"  
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## [1] "not a multiple"  
## [1] "Fizz"  
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## [1] "Buzz"  
## [1] "Fizz"  
## [1] "not a multiple"  
## [1] "not a multiple"  
## [1] "Fizz"  
## [1] "Buzz"

#Question 2: Fibonacci Sequence  
#Write a program to generate the Fibonacci sequence up to 100.  
fibonnaci<-function(n){  
 n<-100  
 x<-c(1,1)  
 while(n>length(x))  
 {  
 size<-length(x)  
 new<-x[size]+x[size-1]  
 x<-c(x,size)  
 }  
 cat(x)  
}  
fibonnaci()

## 1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

#Question 3: Power of Two  
#Write a program that takes an integer as input and returns true if the input is a power of two.  
power\_two\_test<-function(n){  
 if(n<=0){  
 return(FALSE)  
 }else {  
 return(TRUE)}  
}  
power\_two\_test(32)

## [1] TRUE

#Question 4: Capitalize Words  
#Write a program that accepts a string as input, capitalizes the first letter of each word in the string, and then returns the result string.  
## install.packages("stringr")  
caps<-function(input\_word){  
 words<-strsplit(input\_word,"\\s+")[[1]]  
 capitalized\_words<-toupper(substring(words[1],1,1))  
 capitalized\_words<-paste0(capitalized\_words,substring(words[1],2))  
 capitalized\_words<-paste0(capitalized\_words,substring(words[1],3))  
 for (i in 2:length(words)) {  
 capitalized\_words<-paste0(capitalized\_words," ",toupper(substring(words[i],1,1)),substring(words[i], 2))  
 }  
 return(capitalized\_words)  
}  
caps("i love programming")

## [1] "I Love Programming"

#Question 5: Reverse Integer  
#Write a program that takes an integer as input and returns an integer with reversed digit ordering.  
rv<-function(num){  
 reversed<-as.integer(paste0(rev(strsplit(as.character(num),"")[[1]]),collapse = ""))  
 return(reversed)  
}  
rv(45)

## [1] 54

#Question 6: Count Vowels  
#Write a program that counts the number of vowels in a sentence.  
vowel<-function(sentence){  
 vowels<-c("a","e","i","o","u")  
 sentence<-tolower(sentence)  
 count<-sum(sapply(vowels, function(vowel){sum(utf8ToInt(sentence))}))  
 return(count)  
   
}  
vowel("Pauline")

## [1] 3750