4E Prelim Computing 2018 P2

Task 1

1	=C4*12 . . . =C15*12	[3]
2	=VLOOKUP(E4,$B$20:$E$24, IF(C4=1, 2, IF(C4=3, 3, 4)), FALSE) . . . =VLOOKUP(E15,$B$20:$E$24, IF(C15=1, 2, IF(C15=3, 3, 4)), FALSE)	[4]
3	=FV(F4,D4,0,B4) . . . =FV(F15,D15,0,B15)	[3]
	Total	[10]

Task 2

4a	`num_of_words = 5`	[1]
4b	`print("Total number of characters =", len(result))`	[1]

4c	**`word_list = []`**
	`for count in range(num_of_words):`
	`    word = input("Enter a word: ")`
	`    word_list.append(word)`
	`    result += word`
	`    if count < num_of_words-1:`
	`        result += " "`
	`print("Word List:")`
	`for w in word_list:`
	`        print(w)`
		[5]

4d	`while len(word)<1 or len(word)>15:` `        word = input("Please enter correct length of word (1 to 15 char): ")`	[3]

	Total	[10]

Task 3

5	`NEW_BASE = 2`	[2]
	`num = input("Enter a non-negative integer: ")`	[2]
	`num = int(num)`	[1]
	`while q > 0:`	[1]
	`result = str(r) + result`	[1]
	`q = q // NEW_BASE`	[1]

	`while q > 0`
	`    r = q % NEW_BASE`
	`    result = result + str(r)`
	`    q = q / NEW_BASE`
	`print(num, "in Decimal is", result, "in Binary.")`
		[2]

	Total	[10]

Task 4

6	Input plaintext	
	Input shift value and typecast to integer	
	Variable set up and initialized for encrypted message	
	Loop through plaintext	
	Check for non-alphabet characters	
	Correct retrieval of encrypted alphabet (non-wrap-around letters) • Retrieve alphabet value [1] • Apply shift value [1] • Retrieve encrypted alphabet [1]	

	Correct algorithm to take care of wrap-around letters	
	Correct construction of encrypted message (non-alphabet, alphabet)	

	Solution
	
	`alphabet_up = "ABCDEFGHIJKLMNOPQRSTUVWXYZ"`
	`plaintext = input("Please enter your plaintext: ")`
	`shiftvalue = int(input("Please enter a shift value: "))`
	`encrypted = ""`
	`for c in plaintext:`
	`  if c in alphabet_up:`
	`  encrypted +=`
	`  alphabet_up[(alphabet_up.find(c)+shiftvalue)%26]`
	`  else:`
	`  encrypted += c`
	
	`print("Encrypted message:", encrypted)`	

7	Nine lines (three lines per test case) of output	
	Output matches stored program	
8	`while shiftvalue<1 or shiftvalue>25:` `  shiftvalue = int(input("Please enter a shift value again (1-25): "))`	
	Total	[20]