		Thumb drive No:	
Class/ Index Number	Centre Number/ 'O' Level Index Number	Name	
/	1		



新加坡海星中学 MARIS STELLA HIGH SCHOOL PRELIMINARY EXAMINATION SECONDARY FOUR

COMPUTING

Paper 2 Practical (Lab-based)

7155/02 20 August 2021 2 hours 30 mins

Additional Materials: Electronic version of REGISTER.XLSX file Electronic version of PRODUCT.PY file Electronic version of GUESS.PY file Insert Quick Reference for Python

READ THESE INSTRUCTIONS FIRST

MARK SCHEME



This document consists of 7 printed pages.

2

Task 1

Question	Answer		Marks
1	Age		1
	=\$C\$25-C3		
	=\$C\$25-C4		
	=\$C\$25-C5		
	=\$C\$25-C6		
	=\$C\$25-C7		
	=\$C\$25-C8		
	=\$C\$25-C9		

Question	Answe	r	Marks
2	Category		2
	=VLOOKUP(D3,\$K\$4:\$L\$6,2,1)		
	=VLOOKUP(D4,\$K\$4:\$L\$6,2,1)		
	=VLOOKUP(D5,\$K\$4:\$L\$6,2,1)		
	=VLOOKUP(D6,\$K\$4:\$L\$6,2,1)		
	=VLOOKUP(D7,\$K\$4:\$L\$6,2,1)		
	=VLOOKUP(D8,\$K\$4:\$L\$6,2,1)		
	=VLOOKUP(D9,\$K\$4:\$L\$6,2,1)		
	=VLOOKUP(D10,\$K\$4:\$L\$6,2,1)		
	=VLOOKUP(D11,\$K\$4:\$L\$6,2,1)		
	=VLOOKUP(D12,\$K\$4:\$L\$6,2,1)		

Question	Answer	Marks
3	Password	2
	=CONCATENATE(LEFT(B3,2),LEN(B3),LEFT(F3,1))	
	=CONCATENATE(LEFT(B4,2),LEN(B4),LEFT(F4,1))	
	=CONCATENATE(LEFT(B5,2),LEN(B5),LEFT(F5,1))	
	=CONCATENATE(LEFT(B6,2),LEN(B6),LEFT(F6,1))	
	=CONCATENATE(LEFT(B7,2),LEN(B7),LEFT(F7,1))	
	=CONCATENATE(LEFT(B8,2),LEN(B8),LEFT(F8,1))	
	=CONCATENATE(LEFT(B9,2),LEN(B9),LEFT(F9,1))	

Question		Answer	Marks
4	Student Total		2
	=COUNTIF(\$F\$3:\$F\$23,J10)		
	=COUNTIF(\$F\$3:\$F\$23,J11)		
	=COUNTIF(\$F\$3:\$F\$23,J12)		

Question	Answer	Marks
5	Total	1
	=M16*L16	
	=M17*L17	

=M18*L18	
=M19*L19	

Question	Answer	Marks
6	=SUMIF(\$J\$16:\$J\$24,M9,\$N\$16:\$N\$24)	2
	=SUMIF(\$J\$16:\$J\$24,M10,\$N\$16:\$N\$24)	
	=SUMIF(\$J\$16:\$J\$24,M11,\$N\$16:\$N\$24)	

Task 2

Quest ion	Answer
7(a)	mod = totalcount%11
7(b)	if mod == 10:
. ()	mod = "X"
7(c)	CHECKDIGITS = ["1","2","3:","4","5","6","7","8","9","0","X"]
	<pre>while not(len(number)==9 and (number[:-1].isdigit() and number[-1]in CHECKDIGITS)): # 1m for loop, 1m for length check, 1m for format check if len(number)!=9: print("Incorrect length. Only length of 9 allowed.") if not number[:-1].isdigit(): print("First 8 data should only be digits.") if not (number[-1]in CHECKDIGITS): print("Last data should be either a digit or 'X'") number = input("Please re-enter product number: ") # 1m</pre>
8	repeat = "Y"
	while repeat == "Y":
	repeat = input("Continue with another product code (Y/N)? ").upper()
	MYPRODUCTCODE.PY
	<pre>WEIGHTS=[3,4,6,8,4,3,5,5] CHECKDIGITS = ["1","2","3","4","5","6","7","8","9","0","X"] #adding validation of length check and format check 4m repeat = "Y" #1m for setting variable</pre>
	<pre>while repeat == "Y": #1m for proper loop condition</pre>
	<pre>number = input("Please enter product number: ") while not(len(number)==9 and (number[:-1].isdigit() and number[-1]in CHECKDIGITS)): #1m for loop, 1m for length check, 1m for format check</pre>
	<pre>if not number[:-1].isdigit(): print("First 8 data should only be digits.") if not (number[-1]in CHECKDIGITS): print("Last data should be either a digit or 'X'") #individual statements for each check not required for marks number = input("Please re-enter product number: ") #re-entry statement MUST be different from first request</pre>
	totalcount=0
	<pre>for counter in range (8): totalcount = totalcount + WEIGHTS[counter]*int(number[counter])</pre>
	<pre>mod = totalcount%11 #change %10 to %11 1 mark</pre>
	<pre>if mod == 10: #add check to change remainder of 10 to X mod = "X"</pre>
	<pre>if str(mod) == number[-1]:</pre>

Task 3

Quest ion	Answer
9	Errors are highlighted
	<pre>import random count = 1</pre>
	<pre>while num != ans and count < 8: #4 changed or to and if num < ans: #5 changed > to < print("Your guess is too low!") else: print("Your guess is too high!")</pre>
	<pre>num = input("Enter a number: ") while not num.isdigit(): #6 added () num = input("Enter only numbers: ") num=int(num) #7 changed str to int count = count + 1 #8 changed - to +</pre>
	<pre>if num == ans: #9 changed != to == print("You guessed it correctly!") else: print("You lost! You didn't get the number.")</pre>
	print("You made {} guesses".format(<mark>count</mark>)) #10 changed num to count
	Corrected Lines
1	<pre>count = 1 *if this is not changed (see * changes)</pre>
2	ans = random.randint(1,100)
3	while not num.isdigit():
4	while num != ans and count < 8: *8 here will have to change to 7
5	if num < ans:
6	<pre>while not num.isdigit():</pre>
7	<pre>num=int(num)</pre>
8	count = count + 1
9	if num == ans:
10	<pre>print("You made {} guesses".format(count)) *num change count+1</pre>

Task 4

Questi	Answer	
on		
10	Ask for Class and store into variable	
	Ask for no of students in class and store into variable	
	Ask for no of candidate and store into variable	
	Ask for input of names and store into variable	
	Adding of Abstain together with choice of names	
	Loop using no of students as a counter	
	Validation of choice of vote	
	Appropriate question when rejected	
	Increment counter based on vote	
	Print out of selection choices	
	Checking for highest vote	
	Placing highest vote names into variable include case of tie	
	Print out votes clearly showing names and votes	

Questi on	Answer
11	Screenshot of Test 1
	Screenshot of Test 2
	Screenshot results same as provided screenshot

Questi	Answer
on	
12	Loop created for case of highest elected > 1
	Loop repeats more than once for case of repeated ties
	Check to see if there is a need to restart voting
	Appropriate message to inform of restarting vote

Sample Code:

#TASK 4 CLASSVOTE2.PY

classroom = input("Name of class: ")

noofppl = int(input("Number of students in class: "))

noofcan = int(input("Number of candidates: "))
while noofcan < 0 or noofcan > 4:
 noofcan = int(input("Re-enter number of candidates (Max = 4): "))

options = input("Enter names of candidates separated with a comma and a space: ").split(", ") while len(options)!=noofcan:

options = input("Re-enter the {} names of candidates separated with a comma and a space: ".format(noofcan)).split(", ")

highestelected = ["-1"]

```
while highestelected == ["-1"] or len(highestelected) > 1: #1 1 mark loop created for case of
highest elected > 1
  if len(highestelected)>1:
                                                  #2 1 mark if loop can repeat more than once (case
of repeated ties)
     options = highestelected
  options.append("Abstain")
  numlist = [0]*len(options)
  for ppl in range(noofppl):
     print("Each student will now place their votes from the following choice: ")
     print(options)
     selection = int(input("Enter your choice from 1 to {}: ".format(len(options))))
     while not(selection >=1 and selection <= len(options)):
       selection = int(input("Please re-enter your choice from 1 to {}: ".format(len(options))))
     numlist[selection-1] = numlist[selection-1] + 1
  highestvotecount = 0
  highestelected = []
  for index in range(len(numlist)-1):
     if numlist[index] > highestvotecount:
       highestvotecount = numlist[index]
       highestelected = [options[index]]
     elif numlist[index] == highestvotecount:
       highestelected = highestelected + [options[index]]
  print(classroom)
  for i in range(len(options)-1):
     print("{}\t{}\tvotes".format(options[i],numlist[i]))
  if len(highestelected)>1:
                                                  #3 1mark check if there is a need to restart
     print("Since there is a tie, the voting will restart.") #4 1mark appropriate message to inform
restart of vote
print("{} won the election.".format(highestelected))
```

-End of Paper-