機率與統計 HW1 資訊乙 114 何寬羿 C34104032

(1.20)

(a)

Double-Stem-And-Leaf- Plot for the life span of fruit flies		
Stem	Leaf	Frequency
0*	34	2
0.	56667777777889999	17
1*	0000001223333344	16
1.	5566788899	10
2*	034	3
2.	7	1
3*	2	1

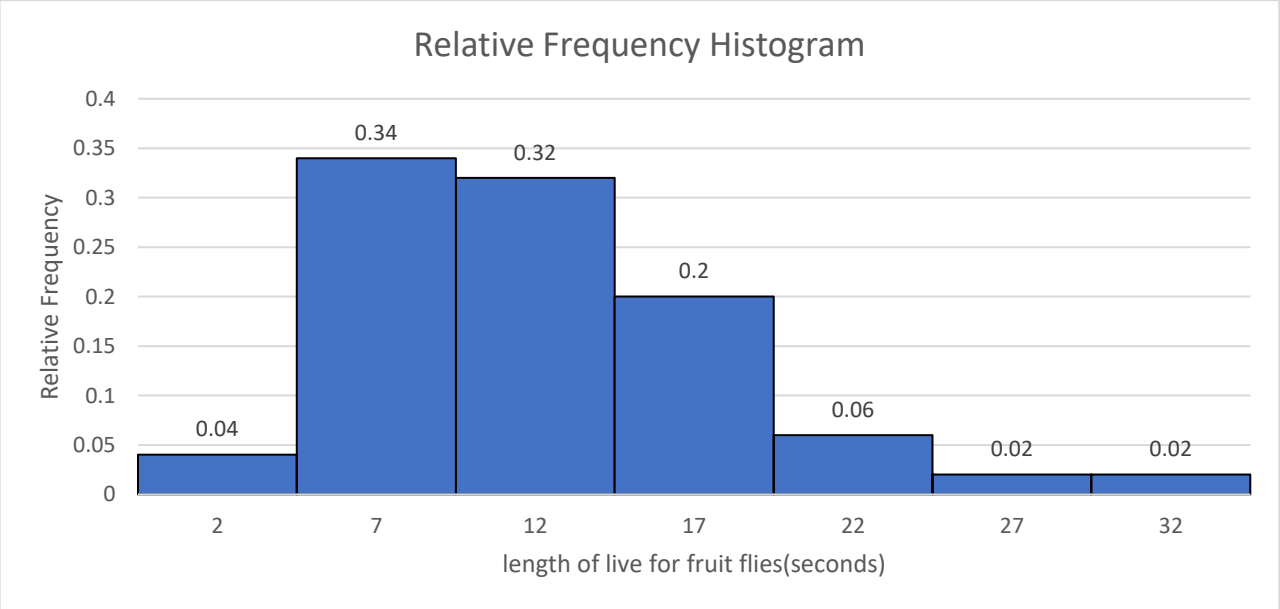
(b)

Add up all the frequency from (a):

2+17+16+10+3+1+1 = 50

Relative Frequency Distribution			
Class interval (sec-sec)	Class midpoint (sec)	Frequency, f	Relative Frequency
0-4	2 (= (0+4)/2)	2	0.04 (= 2/50)
5-9	7	17	0.34
10-14	12	16	0.32
15-19	17	10	0.20
20-24	22	3	0.06
24-29	27	1	0.02
30-34	32	1	0.02

(c)



(d)

median = (10+11)/2 = 10.5 (sec)

(2.10)

(a) F: safe, N: not safe，Sample Space 有 2^3 種 elements

S = {FFF, FFN, FNF, NFF, FNN, NNF, NFN, NNN}

(b) Elements in event E, number of F must more than 1

E = {FFF, FFN, FNF, NFF}

(c)

For all the elements in this event, the second river is F(safe).

(2.20)

(a) region 6

$M' \cap T' \cap V$

(b) region 2

$M \cap V \cap T'$

(c) region 5 or 6

either M or V means (M XOR V)

(M XOR V)$\cap T'$

(d) region 4 or 5 or 7 or 8

V'

(2.38)

(a) 6! = 720 種

(b) 先排列情侶，每對情侶中的兩人亦可換位

$3! \times (2^3) =$ 48 種

(c) 左邊三個女生排列，右邊三個男生排列

$3! \times 3! =$ 36 種

(1.25)

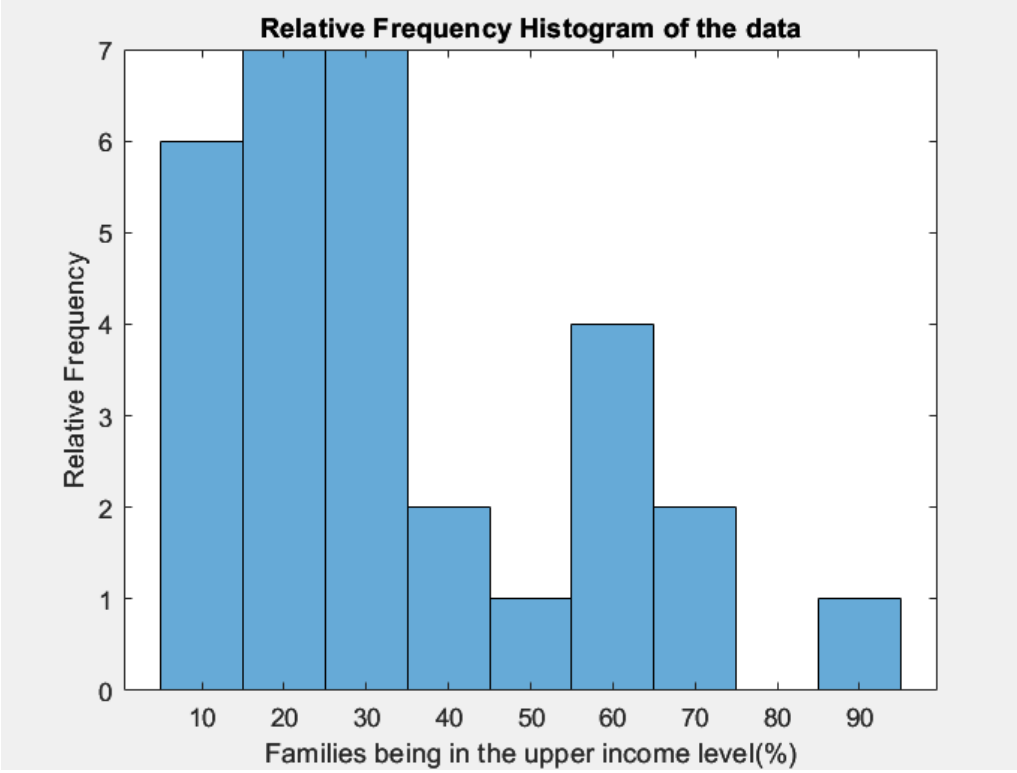
(a) Sample Mean = 33.31 (%)

calculated by Matlab: `(a) sample mean = 33.31`

(b) Sample Median = 26.35 (%)

calculated by Matlab: `(b) sample median = 26.35`

(c) Relative Frequency Histogram



(d) 10% trimmed mean = 30.9708 (%)

calculated by Matlab`(d) trimmed mean = 30.9708`

**比起原始的平均值(a)，刪掉一些 outliers 後，10% trimmed mean 更靠近中位數(b)(往(c)圖表的左側偏移)。這是因為原始數據的 Data Distribution 是呈現 Right-Skewed 的，即資料較集中在(c)圖表中左側的位置。

(1.30)

Box Plot for the data