CHAPTER 4
RESULTS AND DISCUSSION

Table (4.1) shows the raw data from January of 2001 to December of 2012. The initial data collected were from January 2001 to December 2011. The rainfall data for January 2012 to December 2012 were collected after one year for comparison of the predicted values. The data for May 2006 was initially missing. Using bootstrapping method in R, the missing May 2006 data was generated.

Table 4.1: Amount of Precipitation Per Month in mm, from 2001 to 2012

Month	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
JANUARY	14.6	5	0*	17	0.2	160.6	0*	24	8	0*	94	17.5
FEBRUARY	39.5	2	25.4	128.6	0*	8.8	0.6	97	64.5	0*	13.8	80.3
MARCH	289.8	0.6	4.8	0*	54.6	38.4	31.8	78.7	82.9	15.3	88.9	151.9
APRIL	76	71.2	46.8	37.8	32	29.6	25.4	149.8	407.3	148.6	11.9	72.6
MAY	291	264.4	662.7	428.6	291	245.5048△	308.6	839.8	298.5	248.6	462.5	207.7
JUNE	451.4	411	792.4	1306.5	425.7	188.2	358.4	302	810	254	529.1	659
JULY	1642	1883.4	721.3	445.4	292.4	1769.8	219	681.2	758.4	543.7	435.9	1020.2
AUGUST	274	525.6	1089.4	1432.9	690.2	735.8	1201.6	999.5	1087.7	536.6	1096.3	2,207
SEPTEMBER	842.2	301.5	303.2	225.6	694.6	207.6	408.4	761	516.9	296.8	819.2	288.3
OCTOBER	97	224.8	179.7	42.4	256.6	316	410.3	178.1	1981.8	920.1	332.4	72.4
NOVEMBER	61.6	67.3	60.4	114.5	55.2	72.4	444.8	82.6	22.2	226.4	81.6	57.8
DECEMBER	23.2	10	4.4	154.9	68	43.2	21.6	0*	0*	47.4	67.4	10.8

* Trace amount, < 0.01 mm
$^\triangle$ Bootstrapped value

Analysis of Data

The data was saved in a file named `baguiorainfall.dat`. This data was then inputted in R and stored in a variable `baguiorainseries` using the `ts` function.

```
baguiorain ← read.table("baguiorainfall.dat")
baguiorainseries ← ts(baguiorain, frequency = 12, start = c(2001, 1))
```

Figure (4.1) shows the graph of the rain fall time series from January 2001 to December 2011. It can be seen that the data is seasonal, peaking every July to August every year.