Bonus Exercise 1

Algoritm

```
START
    WeekDay = 0 , WeekendDay = 0
    input GearType , TotalRentDay
      FOR num = 1 TO TotalRentDay
          input Day
            IF Day == "Saturday" || Day == "Sunday" THEN
              IF Gear Type == "Basic Tent" THEN
                  RatePerDay  = 25 + 8
              ELSE IF Gear Type == "Advanced Tent" THEN
                  RatePerDay  = 50 + 15
              ELSE IF Gear Type == "Backpack" THEN
                  RatePerDay  = 15 + 5
              ENDIF
                  WeekendDay = WeekendDay ++
                  TotalWeekendCost = RatePerDay * WeekendDay
          ELSE
              IF Gear Type == "Basic Tent" THEN
                  RatePerDay  = 25
              ELSE IF Gear Type == "Advanced Tent" THEN
                  RatePerDay  = 50
              ELSE IF Gear Type == "Backpack" THEN
                  RatePerDay  = 15
              ENDIF
                  WeekDay = WeekDay ++
                  TotalWeekDayCost = RatePerDay * WeekDay
          ENDIF
      ENDFOR
      TotalRentalCost = TotalWeekDayCost + TotalWeekendCost
END
```

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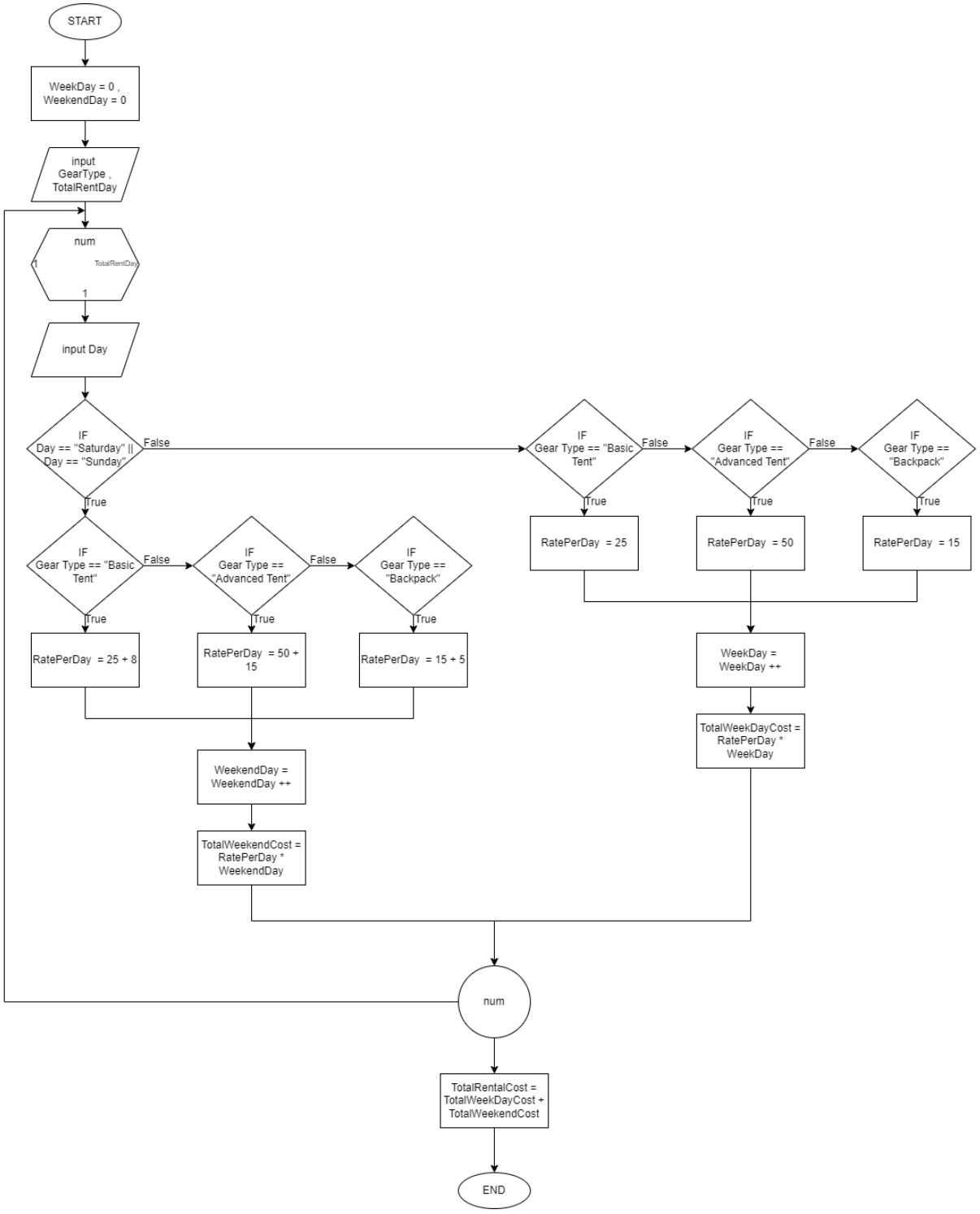
Flowchart



Bonus Exercise 2

Question 1

```
PRINT(NunmbeR_Of_DaY , EnerY_PeR_DaY , TotaL_CumulativE_EnergY)

    FOR NuM = 1 TO NunmbeR_Of_DaY

          Display "Energy consumption for day " , NuM , EnerY_PeR_DaY

      ENDFOR

      Display "Total cumulative energy consumption for " , NunmbeR_Of_DaY
, TotaL_CumulativE_EnergY

EXIT


CALCULATE(POWER_RATING , HOURS_USED , NUMBER_OF_DAY , *ENERGY_PER_DAY)

    TOTAL_CUMULATIVE_ENERGY = 0

    IF POWER_RATING < 500 THEN

         HOURS_USED_RATE = 1.5

      ELSE IF POWER_RATING >= 500 && POWER_RATING <= 1500 THEN

          HOURS_USED_RATE = 3.0

      ELSE IF POWER_RATING > 1500 THEN

          HOURS_USED_RATE = 5.0

      ENDIF

      *ENERGY_PER_DAY = HOURS_USED_RATE * HOURS_USED

      FOR num = 1 TO NUMBER_OF_DAY

          TOTAL_CUMULATIVE_ENERGY = TOTAL_CUMULATIVE_ENERGY +
*ENERGY_PER_DAY

      ENDFOR

      PRINT(NUMBER_OF_DAY , *ENERGY_PER_DAY , TOTAL_CUMULATIVE_ENERGY)

EXIT


READ(power_rating , hours_used , number_of_day , *energy_per_day)

    IF power_rating > 100 && power_rating < 3000 THEN
```

```
          CALCULATE (power_rating , hours_used , number_of_day ,
energy_per_day)

      ELSE

          display Error message

      ENDIF

EXIT



START

    EnergyPerDay = 0

      DO

       input PowerRating , HoursUsed , NumberOfDay

       READ(PowerRating , HoursUsed , NumberOfDay , &EnergyPerDay)

      WHILE EnergyPerDay == 0.00

END
```

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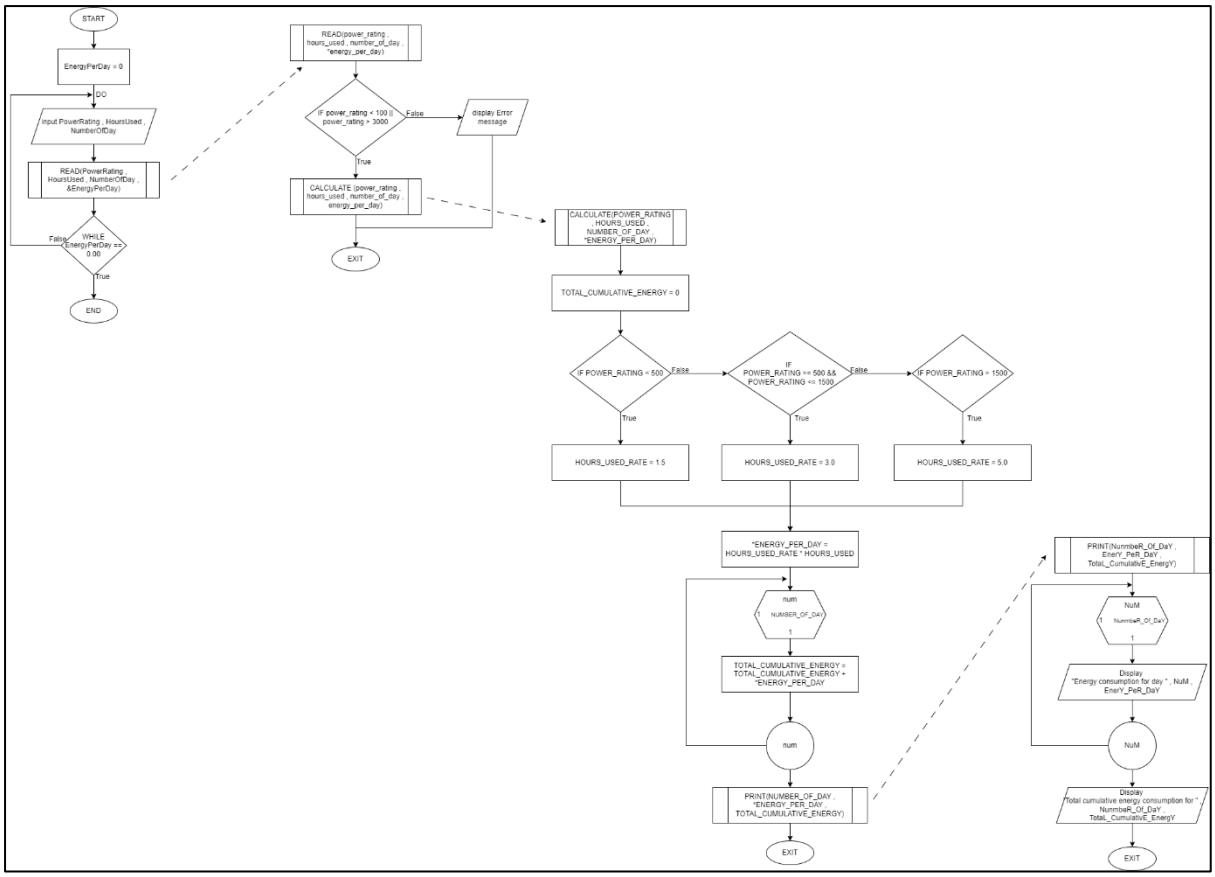
Question 2



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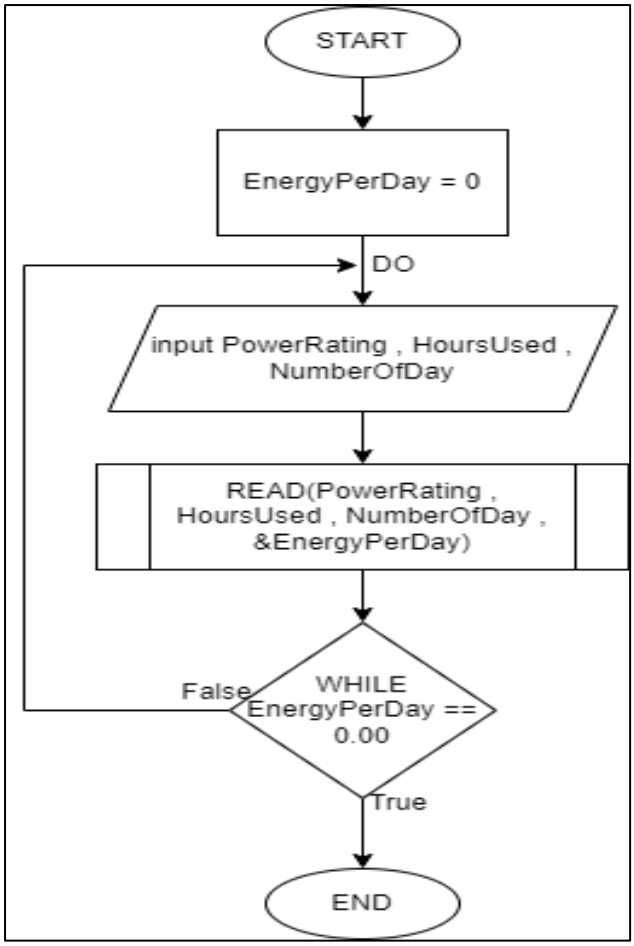

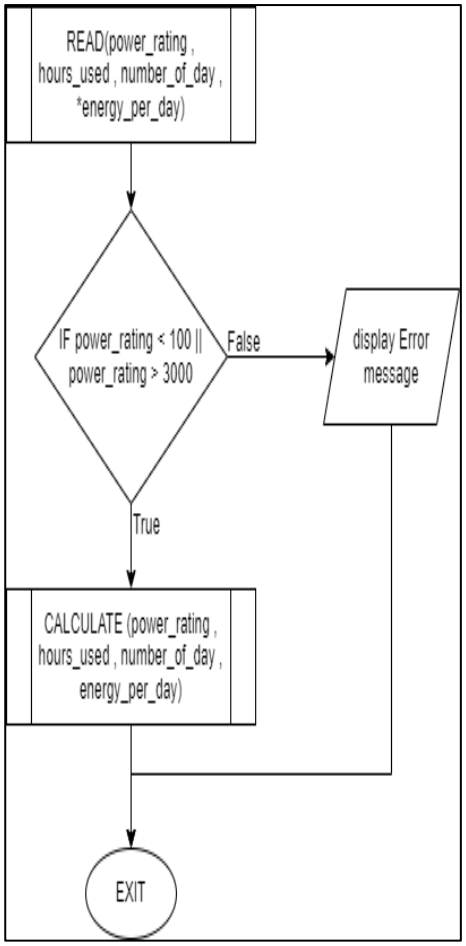

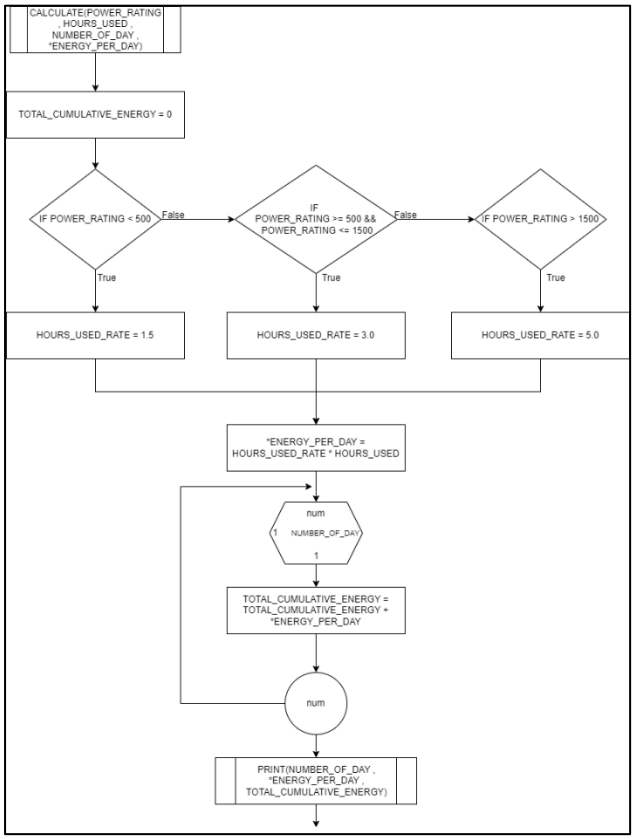

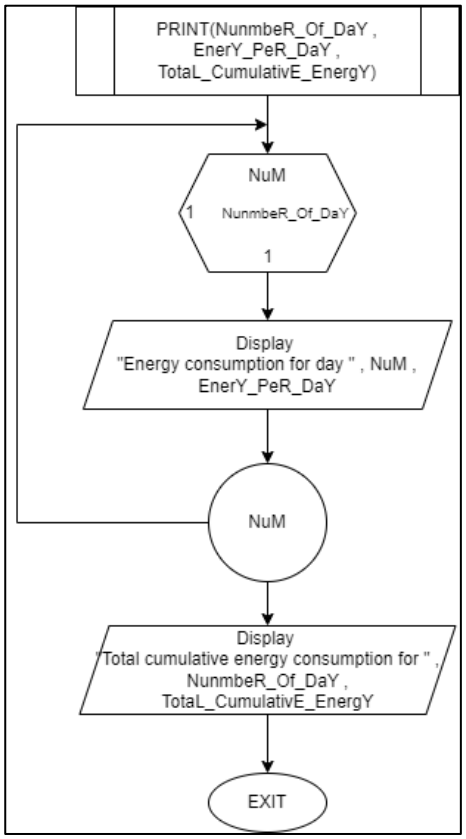

Question 3

Codding Base on algorihm in Question 1 (With Module)

```
//CB24019 - PUTERA NAQIB KHUSAIRI BIN ASRI

#include <stdio.h>

#include <string.h>



void print(int NumbeR_Of_DaY ,float EnerY_PeR_DaY ,float
TotaL_CumulativE_EnergY)

{

    for(int NuM = 1; NuM <= NumbeR_Of_DaY ; NuM++)

    {

        printf("\nEnergy consumption for day %d: %.1f kWh", NuM ,
EnerY_PeR_DaY);

    }

    printf("\nTotal cumulative energy consumption for %d days: %.1f
kWh\n", NumbeR_Of_DaY , TotaL_CumulativE_EnergY);

}



void calculate(int POWER_RATING ,int HOURS_USED ,int  NUMBER_OF_DAY
,float *ENERGY_PER_DAY)

{

    float TOTAL_CUMULATIVE_ENERGY = 0 , HOURS_USED_RATE;

    if(POWER_RATING < 500)

    {

        HOURS_USED_RATE = 1.5;

    }

    else if(POWER_RATING >= 500 && POWER_RATING <= 1500)

    {

        HOURS_USED_RATE = 3.0;

    }

    else if(POWER_RATING > 1500)
```

```
    {
        HOURS_USED_RATE = 5.0;
    }
    *ENERGY_PER_DAY = HOURS_USED_RATE * HOURS_USED;
    for(int num = 1; num <= NUMBER_OF_DAY; num++)
    {
        TOTAL_CUMULATIVE_ENERGY = TOTAL_CUMULATIVE_ENERGY +
*ENERGY_PER_DAY;
    }
    print(NUMBER_OF_DAY , *ENERGY_PER_DAY , TOTAL_CUMULATIVE_ENERGY);
}


void read(int power_rating ,int  hours_used ,int  number_of_day ,float
*energy_per_day , char name[250] , char address [250] , char mobile_no
[250])
{
    if(power_rating > 100 && power_rating < 3000)
    {
        calculate(power_rating , hours_used , number_of_day ,
energy_per_day);
    }
    else
    {
        printf("Please Insert power rating between 100 and 3000 only\n");
        system("pause");
        system("cls");
        printf("Name: %s\n",name);
        printf("Address: %s\n",address);
        printf("Mobile No: %s\n",mobile_no);
    }
}
```

```
int main()

{

    char Name[250] , Address [250] , MobileNo [250];

    int PowerRating , HoursUsed , NumberOfDay;

    float EnergyPerDay;


    printf("Name: ");

    gets(&Name);

    printf("Address: ");

    gets(&Address);

    printf("Mobile No: ");

    gets(&MobileNo);


    do

    {

        printf("\nEnter power rating for appliance (W): ");

        scanf("%d",&PowerRating);

        printf("Enter number of hours used per day: ");

        scanf("%d", &HoursUsed);

        printf("Enter number of days: ");

        scanf("%d", &NumberOfDay);

        read(PowerRating , HoursUsed , NumberOfDay , &EnergyPerDay , Name
, Address , MobileNo);

    }

    while(EnergyPerDay == 0.00);

    printf("Thank you");

    return 0;

}
```

Codding Not Base on algorihm in Question 12 (Without Module)

```
//CB24019 - PUTERA NAQIB KHUSAIRI BIN ASRI
#include <stdio.h>
#include <string.h>
int main()
{
    char Name[250] , Address [250] , MobileNo [250];
    int PowerRating , HoursUsed , NumberOfDay;
    float EnergyPerDay , TotalCumlativeEnergy = 0 , HoursUsedRate;

    printf("Name: ");
    gets(&Name);
    printf("Address: ");
    gets(&Address);
    printf("Mobile Number: ");
    gets(&MobileNo);

    do
    {
        printf("\nEnter power rating for appliance (W): ");
        scanf("%d",&PowerRating);
        printf("Enter number of hours used per day: ");
        scanf("%d", &HoursUsed);
        printf("Enter number of days: ");
        scanf("%d", &NumberOfDay);
        if(PowerRating > 100 && PowerRating < 3000)
        {
            if(PowerRating < 500)
            {
                HoursUsedRate = 1.5;
```

```
            }
            else if(PowerRating >= 500 && PowerRating <=1500)
            {
                HoursUsedRate = 3.0;
            }
            else if(PowerRating > 1500)
            {
                HoursUsedRate = 5.0;
            }
            EnergyPerDay = HoursUsedRate * HoursUsed;
            for(int num  = 1; num <= NumberOfDay; num++)
            {
                TotalCumlativeEnergy     =     TotalCumlativeEnergy     +
EnergyPerDay;
            }
            printf("\nTotal    Energy    Consumption:    %.1f    kWh\n",
TotalCumlativeEnergy);
        }
        else
        {
            printf("Please  Insert  power  rating  between  100  and  300
only\n");
            system("pause");
            system("cls");
            printf("Name: %s\n",Name);
            printf("Address: %s\n",Address);
            printf("Mobile Number: %s\n",MobileNo);
        }
    }
    while(EnergyPerDay == 0.00);
    printf("Thank You");
```

```
    return 0;

}
```