Homework 2

4.28) Calculating Weekly Pay

Code:

```c
#include <stdio.h>

int main(void)
{
    // initialize variables
    int code = 0;
    float weekSalary;
    float hours;
    float hourRate;
    float weekSale;
    float itemAmount;
    float itemFee;
    unsigned int count1 = 0;
    unsigned int count2 = 0;
    unsigned int count3 = 0;
    unsigned int count4 = 0;
    float salary1 = 0;
    float salary2 = 0;
    float salary3 = 0;
    float salary4 = 0;
    float totalSalary = 0;
    unsigned int totalEmployees = 0;
    // prompt for user input
    printf("Enter Employee Paycode(-1 to end): ");
    scanf("%i",&code);

    // loop until -1 is typed
    while (code != -1 ) {

        // determine which code was the input
        switch (code)
        {
        case 1:
            ++count1;
            printf("Enter weekly salary: ");
            scanf("%f", &weekSalary);
            salary1 += weekSalary;
            break;
```

```
40                  case 2:
41                      ++count2;
42                      printf("Working hour:");
43                      scanf("%f", &hours);
44                      printf("Hourly payment:");
45                      scanf("%f", &hourRate);
46                      if (hours <= 40)
47                          salary2 += hours * hourRate;
48                      else
49                          salary2 += hourRate * (40 + (hours-40) * 1.5);
50                      break;
51
52                  case 3:
53                      ++count3;
54                      printf("Weekly sale amount: ");
55                      scanf("%f", &weekSale);
56                      salary3 += (250 + 0.057 * weekSale);
57                      break;
58
59                  case 4:
60                      ++count4;
61                      printf("Amount of items: ");
62                      scanf("%f", &itemAmount);
63                      printf("Fee per item: ");
64                      scanf("%f", &itemFee);
65                      salary4 += itemAmount * itemFee;
66                      break;
67
68                  default:
69                      printf("Incorrect code entered.\n");
70                      printf("Enter new paycode please.\n");
71                      break;
72              } //end switch
73              printf("%s", "\nEnter Employee Paycode(-1 to end): ");
74              scanf("%i", &code);
75          } //end while
76
77      // sum total employees and salaries
78      totalEmployees = count1+count2+count3+count4;
79      totalSalary = salary1+salary2+salary3+salary4;
80
81      // display table
82      printf("\n%s%43s%11s\n","Role","Number of Employees","Salary");
83      printf("Managers: %28u%19.2f\n",count1, salary1);
84      printf("Hourly workers: %22u%19.2f\n",count2, salary2);
85      printf("Comission workers: %19u%19.2f\n",count3, salary3);
86      printf("Pieceworkers: %24u%19.2f\n\n",count4, salary4);
87      printf("Total: %31u %18.2f\n", totalEmployees, totalSalary);
88  } // end function main
```

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Output:

- Calculations have been performed and table is displayed successfully.

```
Enter Employee Paycode(-1 to end): 1
Enter weekly salary: 420

Enter Employee Paycode(-1 to end): 2
Working hour: 45
Hourly payment: 9.5

Enter Employee Paycode(-1 to end): 3
Weekly sale amount: 550

Enter Employee Paycode(-1 to end): 4
Amount of items: 25
Fee per item: 29.9

Enter Employee Paycode(-1 to end): -1

Role                    Number of Employees    Salary
Managers:                         1            420.00
Hourly workers:                   1            451.25
Comission workers:                1            281.35
Pieceworkers:                     1            747.50

Total:                            4            1900.10
```

- Another terminal output.

```
Role                    Number of Employees    Salary
Managers:                         2            1150.00
Hourly workers:                   1            120.00
Comission workers:                3            838.94
Pieceworkers:                     1            399.50

Total:                            7            2508.44
```

- Displays error message if an invalid paycode is entered.

```
Enter Employee Paycode(-1 to end): 395
Incorrect code entered.
Enter a paycode between 1 to 4 please.
```

4.31) Printed calender, the years in the range 1994 through 1999.
Code:

```c
1    #include <stdio.h>
2
3    int main( void )
4    {
5        // initialize variables
6        int year;
7        int month;
8        int days;
9        int leapYear;
10       int dayPos;
11       int dayNum;
12       int space;
13
14       // prompt user for year input
15       do {
16           printf("1994 ile 1999 arasi bir yil giriniz: ");
17           scanf("%d", &year);
18           if (year < 1994 || year > 1999) {
19               printf("Yanlis girdi, lutfen 1994-1999 arasinda bir yil giriniz.\n");
20           }
21       } while (year < 1994 || year > 1999);
22       // switch cases for starting positions of days
23       switch (year)
24       {
25       case 1994:
26           dayPos = 6;
27           break;
28
29       case 1995:
30           dayPos = 7;
31           break;
32
33       case 1996:
34           dayPos = 1;
35           break;
36
37       case 1997:
38           dayPos = 3;
39           break;
40
41       case 1998:
42           dayPos = 4;
43           break;
44
45       case 1999:
46           dayPos = 5;
47           break;
48
49       } // end while
```

```
50
51        // checks if its a leap year or not
52        if (year % 4 == 0 && year % 100 != 0 || year % 400 == 0) {
53            leapYear = 1;
54        }
55        else {
56            leapYear = 0;
57        } // end if
58
59        // display months
60        for (month = 1; month <= 12; month++) {
61            switch (month)
62            {
63            case 1:
64                printf( "\n%14s %d\n", "Ocak", year);
65                days = 31;
66                break;
67
68            case 2:
69                printf("\n\n%14s %d\n", "Subat", year);
70                days = leapYear == 1 ? 29 : 28;
71                break;
72
73            case 3:
74                printf("\n\n%14s %d\n", "Mart", year);
75                days = 31;
76                break;
77
78            case 4:
79                printf("\n\n%14s %d\n", "Nisan", year);
80                days = 30;
81                break;
82
83            case 5:
84                printf("\n\n%14s %d\n", "Mayis", year);
85                days = 31;
86                break;
87
```

```
 88              case 6:
 89                  printf("\n\n%14s %d\n", "Haziran", year);
 90                  days = 30;
 91                  break;
 92
 93              case 7:
 94                  printf("\n\n%14s %d\n", "Temmuz", year);
 95                  days = 31;
 96                  break;
 97
 98              case 8:
 99                  printf("\n\n%14s %d\n", "Agustos", year);
100                  days = 31;
101                  break;
102
103              case 9:
104                  printf("\n\n%14s %d\n", "Eylul", year);
105                  days = 30;
106                  break;
107
108              case 10:
109                  printf("\n\n%14s %d\n", "Ekim", year);
110                  days = 31;
111                  break;
112
113              case 11:
114                  printf("\n\n%14s %d\n", "Kasim", year);
115                  days = 30;
116                  break;
117
118              case 12:
119                  printf("\n\n%14s %d\n", "Aralik", year);
120                  days = 31;
121                  break;
122          } // end for
123
124      // display weekdays
125      printf("Pts Sal Car Per Cum Cmt Paz\n");
126
127          for (space = 1; space < dayPos; space++) {
128              printf("    ");
129          } // end for
130          for (dayNum = 1; dayNum <= days; dayNum++) {
131              printf("%2d  ", dayNum);
132              if (dayPos % 7 == 0) {
133                  printf("\n");
134                  dayPos = 1;
135              }
136              else {
137                  ++dayPos;
138              } // end if
139          } // end for
140      } // end for
141  } // end function main
```

Output:

- Calender printed out succesfully.

```
1994 ile 1999 arasi bir yil giriniz: 1995

         Ocak 1995                      Haziran 1995
Pts Sal Car Per Cum Cmt Paz      Pts Sal Car Per Cum Cmt Paz
                          1                1   2   3   4
 2   3   4   5   6   7   8        5   6   7   8   9  10  11
 9  10  11  12  13  14  15       12  13  14  15  16  17  18
16  17  18  19  20  21  22       19  20  21  22  23  24  25
23  24  25  26  27  28  29       26  27  28  29  30
30  31
                                         Temmuz 1995
         Subat 1995              Pts Sal Car Per Cum Cmt Paz
Pts Sal Car Per Cum Cmt Paz                        1   2
         1   2   3   4   5        3   4   5   6   7   8   9
 6   7   8   9  10  11  12       10  11  12  13  14  15  16
13  14  15  16  17  18  19       17  18  19  20  21  22  23
20  21  22  23  24  25  26       24  25  26  27  28  29  30
27  28                           31

         Mart 1995                      Agustos 1995
Pts Sal Car Per Cum Cmt Paz      Pts Sal Car Per Cum Cmt Paz
         1   2   3   4   5            1   2   3   4   5   6
 6   7   8   9  10  11  12        7   8   9  10  11  12  13
13  14  15  16  17  18  19       14  15  16  17  18  19  20
20  21  22  23  24  25  26       21  22  23  24  25  26  27
27  28  29  30  31               28  29  30  31

         Nisan 1995                      Eylul 1995
Pts Sal Car Per Cum Cmt Paz      Pts Sal Car Per Cum Cmt Paz
                     1   2                        1   2   3
 3   4   5   6   7   8   9        4   5   6   7   8   9  10
10  11  12  13  14  15  16       11  12  13  14  15  16  17
17  18  19  20  21  22  23       18  19  20  21  22  23  24
24  25  26  27  28  29  30       25  26  27  28  29  30

                                         Ekim 1995
         Mayis 1995             Pts Sal Car Per Cum Cmt Paz
Pts Sal Car Per Cum Cmt Paz                              1
 1   2   3   4   5   6   7        2   3   4   5   6   7   8
 8   9  10  11  12  13  14        9  10  11  12  13  14  15
15  16  17  18  19  20  21       16  17  18  19  20  21  22
22  23  24  25  26  27  28       23  24  25  26  27  28  29
29  30  31                       30  31
```

- Leap years are taken into account and one leap day is added to February 1996.

```
1994 ile 1999 arasi bir yil giriniz: 1996

          Ocak 1996
Pts Sal Car Per Cum Cmt Paz
 1   2   3   4   5   6   7
 8   9  10  11  12  13  14
15  16  17  18  19  20  21
22  23  24  25  26  27  28
29  30  31

          Subat 1996
Pts Sal Car Per Cum Cmt Paz
             1   2   3   4
 5   6   7   8   9  10  11
12  13  14  15  16  17  18
19  20  21  22  23  24  25
26  27  28  29
```

- Error message is displayed if an invalid year is entered.

```
1994 ile 1999 arasi bir yil giriniz: 2020
Yanlis girdi, lutfen 1994-1999 arasinda bir yil giriniz.
```