UBI 503 Data Structures and Algorithms

2nd Homework

Assignment Date: 12.11.2021

Due Date: 19.11.2021

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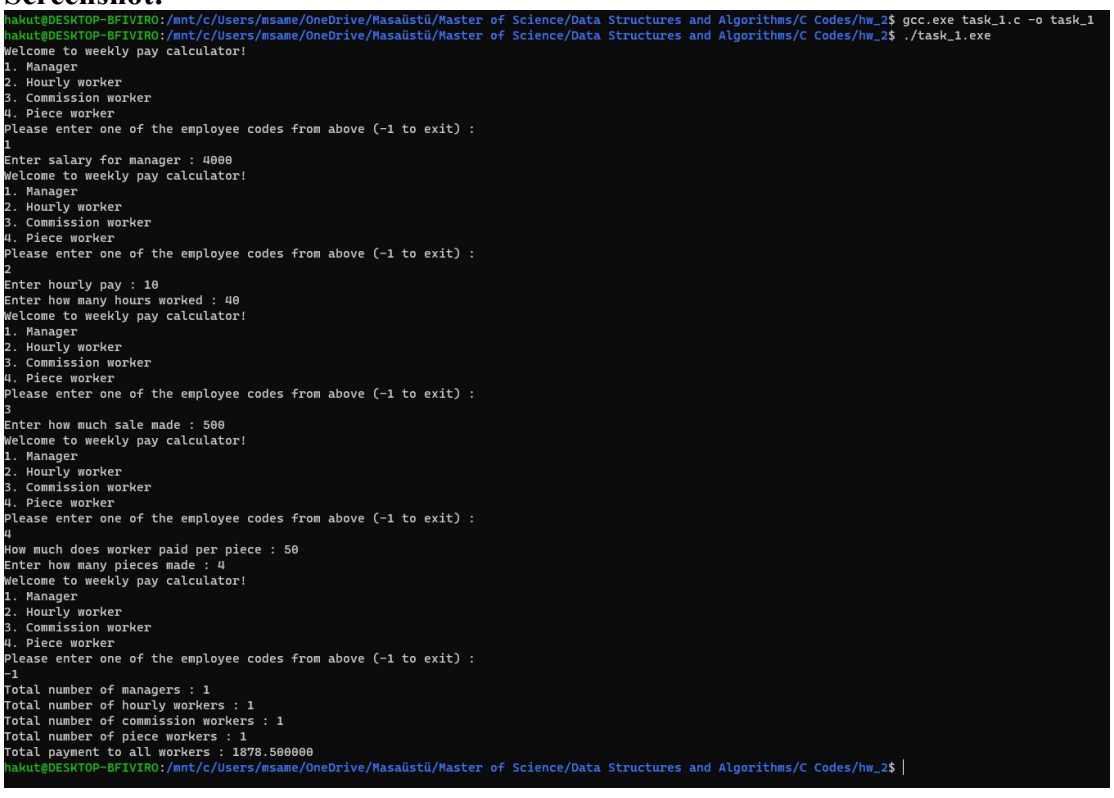
Task 1 : ***(Calculating Weekly Pay)*** A company pays its employees as managers (who receive a fixed weekly salary), hourly workers (who receive a fixed hourly wage for up to the first 40 hours they work and "time-and-a-half"— i.e., 1.5 times their hourly wage—for overtime hours worked), commission workers (who receive $250 plus 5.7% of their gross weekly sales), or pieceworkers (who receive a fixed amount of money for each of the items they produce—each pieceworker in this company works on only one type of item). Write a program to compute the weekly pay for each employee. You do not know the number of employees in advance. Each type of employee has its own pay code: Managers have paycode 1, hourly workers have code 2, commission workers have code 3 and pieceworkers have code 4. Use a switch to compute each employee's pay based on that employee's paycode. Within the switch, prompt the user (i.e., the payroll clerk) to enter the appropriate facts your program needs to calculate each employee's pay based on that employee's paycode. [*Note:* You can input values of type double using the conversion specifier %lf with scanf.]

General Explanation: This program takes employee code as input. Depending on the employee code it asks some specific questions and gets new inputs. If the required information acquired, it prints out the menu again, which will ask for employee code again. This goes on until user enters -1 as input. Then program prints out the final result that includes employee numbers and how much payment should be made as total.

Screenshot:



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hakut@DESKTOP-BFIVIRO:/mnt/c/Users/msame/OneDrive/Masaüstü/Master of Science/Data Structures and Algorithms/C Codes/hw_2$ ./task_1.exe
Welcome to weekly pay calculator!
1. Manager
2. Hourly worker
3. Commission worker
4. Piece worker
Please enter one of the employee codes from above (-1 to exit) :
1
Enter salary for manager : 8000
Welcome to weekly pay calculator!
1. Manager
2. Hourly worker
3. Commission worker
4. Piece worker
Please enter one of the employee codes from above (-1 to exit) :
2
Enter hourly pay : 20
Enter how many hours worked : 80
Welcome to weekly pay calculator!
1. Manager
2. Hourly worker
3. Commission worker
4. Piece worker
Please enter one of the employee codes from above (-1 to exit) :
3
Enter how much sale made : 1200
Welcome to weekly pay calculator!
1. Manager
2. Hourly worker
3. Commission worker
4. Piece worker
Please enter one of the employee codes from above (-1 to exit) :
4
How much does worker paid per piece : 100
Enter how many pieces made : 50
Welcome to weekly pay calculator!
1. Manager
2. Hourly worker
3. Commission worker
4. Piece worker
Please enter one of the employee codes from above (-1 to exit) :
1
Enter salary for manager : 10000
Welcome to weekly pay calculator!
1. Manager
2. Hourly worker
3. Commission worker
4. Piece worker
Please enter one of the employee codes from above (-1 to exit) :
3
Enter how much sale made : 100
Welcome to weekly pay calculator!
1. Manager
2. Hourly worker
3. Commission worker
4. Piece worker
Please enter one of the employee codes from above (-1 to exit) :
-1
Total number of managers : 2
Total number of hourly workers : 1
Total number of commission workers : 2
Total number of piece workers : 1
Total payment to all workers : 12074.100000
hakut@DESKTOP-BFIVIRO:/mnt/c/Users/msame/OneDrive/Masaüstü/Master of Science/Data Structures and Algorithms/C Codes/hw_2$
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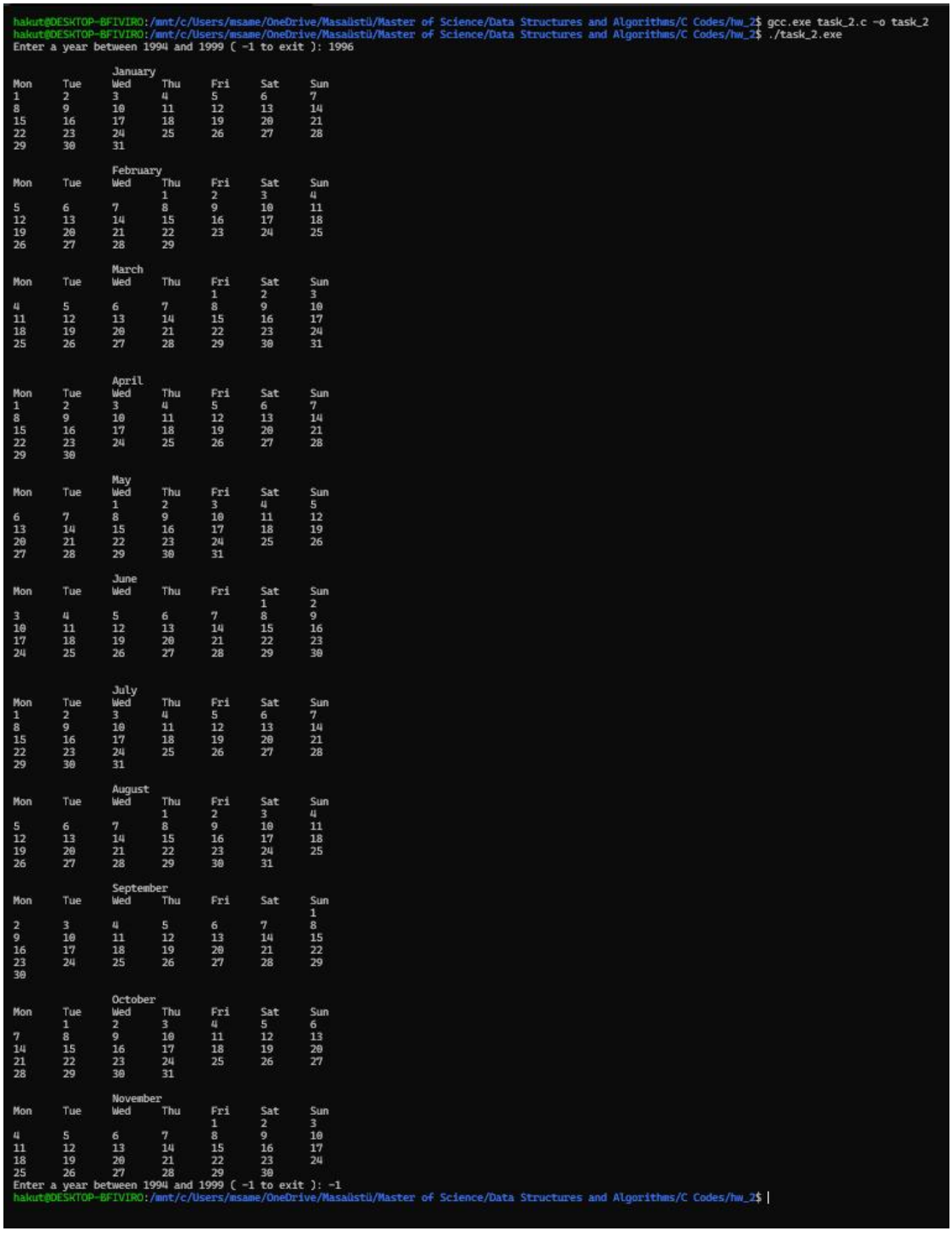
Task 2 : Write a program that inputs the years in the range 1994 through 1999 and uses for-loop repetition to produce a condensed, neatly printed calendar. Watch out for leap years.

General Explanation: This program takes year information as input and prints out the calendar for that year. For doing this it takes leap years consideration and depending on that it calculates if the February has 29 or 28 days. For we have restricted year as input, starting day of the month calculated for each year.

Screenshot:



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hakut@DESKTOP-BFIVIRO:/mnt/c/Users/msame/OneDrive/Masaüstü/Master of Science/Data Structures and Algorithms/C Codes/hw_2$ gcc.exe task_2.c -o task_2
hakut@DESKTOP-BFIVIRO:/mnt/c/Users/msame/OneDrive/Masaüstü/Master of Science/Data Structures and Algorithms/C Codes/hw_2$ ./task_2.exe
Enter a year between 1994 and 1999 ( -1 to exit ): 1996

                January
Mon     Tue     Wed     Thu     Fri     Sat     Sun
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

                February
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                        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

                March
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                                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


                April
Mon     Tue     Wed     Thu     Fri     Sat     Sun
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

                May
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                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

                June
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                                        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


                July
Mon     Tue     Wed     Thu     Fri     Sat     Sun
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

                August
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                        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

                September
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                                                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

                October
Mon     Tue     Wed     Thu     Fri     Sat     Sun
        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

                November
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                                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
Enter a year between 1994 and 1999 ( -1 to exit ): -1
hakut@DESKTOP-BFIVIRO:/mnt/c/Users/msame/OneDrive/Masaüstü/Master of Science/Data Structures and Algorithms/C Codes/hw_2$
```

```
Enter a year between 1994 and 1999 ( -1 to exit ): -1
hakut@DESKTOP-BFIVIRO:/mnt/c/Users/msame/OneDrive/Masaüstü/Master of Science/Data Structures and Algorithms/C Codes/hw_2$ ./task_2.exe
Enter a year between 1994 and 1999 ( -1 to exit ): 1994

                January
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                                        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

                February
Mon     Tue     Wed     Thu     Fri     Sat     Sun
        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

                March
Mon     Tue     Wed     Thu     Fri     Sat     Sun
        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

                April
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                                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

                May
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                                                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

                June
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                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

                July
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                                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


                August
Mon     Tue     Wed     Thu     Fri     Sat     Sun
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

                September
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                        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

                October
Mon     Tue     Wed     Thu     Fri     Sat     Sun
                                        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

                November
Mon     Tue     Wed     Thu     Fri     Sat     Sun
        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
Enter a year between 1994 and 1999 ( -1 to exit ): -1
hakut@DESKTOP-BFIVIRO:/mnt/c/Users/msame/OneDrive/Masaüstü/Master of Science/Data Structures and Algorithms/C Codes/hw_2$
```