ALGORİTMALAR VE PROGRAMLAMA 2 – HAFTA 1

ÖRNEKLER

ÖRNEK 1: Bir işçinin kimlik nosunu, bir ayda toplam çalışılan saati ve saat başına aldığı tutarı kullanıcıdan alan, işçinin belirli bir ay için kimlik nosunu ve maaşını (iki ondalık basamakla) ekrana yazdıran bir C programı yazınız.

```c
#include <stdio.h>
int main() {
    char id[10];        // Variable to store employee ID (up to 10 characters)
    int hour;           // Variable to store working hours
    double value, salary; // Variables for hourly salary and total salary

    // Prompt user for employee ID
    printf("Input the Employees ID(Max. 10 chars): ");
    scanf("%s", &id);

    // Prompt user for working hours
    printf("\nInput the working hrs: ");
    scanf("%d", &hour);

    // Prompt user for hourly salary
    printf("\nSalary amount/hr: ");
    scanf("%lf", &value);

    // Calculate total salary
    salary = value * hour;

    // Print employee ID and salary
    printf("\nEmployees ID = %s\nSalary = U$ %.2lf\n", id, salary);

    return 0;
```
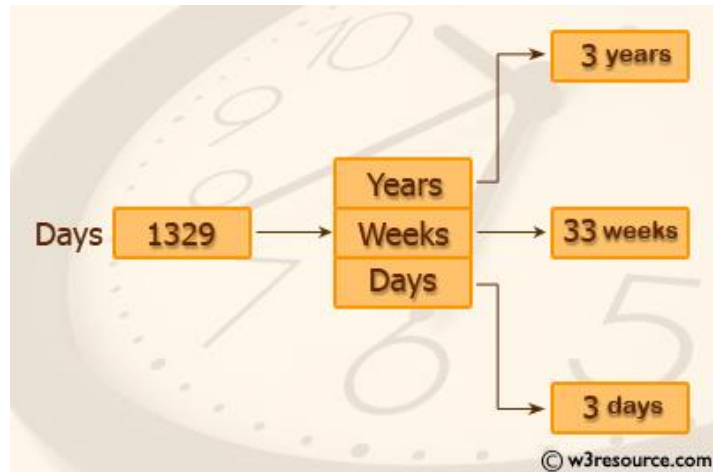
ÖRNEK 2: Verilen gün sayısını yıllara, haftalara ve günlere dönüştüren bir C programı yazınız.

```c
#include <stdio.h>

int main()
{
   int days, years, weeks;

   days = 1329; // Total number of days

   // Converts days to years, weeks and days
   years = days/365; // Calculate years
   weeks = (days % 365)/7; // Calculate weeks
   days = days - ((years*365) + (weeks*7)); // Calculate remaining days

   // Print the results
   printf("Years: %d\n", years);
   printf("Weeks: %d\n", weeks);
   printf("Days: %d \n", days);

   return 0;
}
```

ÖRNEK 3: Giriş olarak saat ve dakika alan ve toplam dakika sayısını hesaplayan bir C programı yazınız.


```c
#include <stdio.h>    // Include the standard input/output header file.

int hrs;        /* given number of hours */
int mins;       /* given number of minutes */
int tot_mins;   /* total number of minutes (to be computed) */

const int MINaHOUR = 60;     /* number of minutes in an hour */
```

```c
char line_text[50];      /* line of input from keyboard */

int main() {
printf("Input hours: ");   // Prompt the user to input hours.
fgets(line_text, sizeof(line_text), stdin);   // Read a line of input from the user and store it in 'line_text'.
sscanf(line_text, "%d", &hrs);   // Convert the input to an integer and store it in 'hrs'.

printf("Input minutes: ");   // Prompt the user to input minutes.
fgets(line_text, sizeof(line_text), stdin);   // Read a line of input from the user and store it in 'line_text'.
sscanf(line_text, "%d", &mins);   // Convert the input to an integer and store it in 'mins'.

tot_mins = mins + (hrs * MINaHOUR);   // Calculate the total number of minutes.

printf("Total: %d minutes.\n", tot_mins);   // Print the total number of minutes.

return(0);   // Return 0 to indicate successful execution of the program.
}
```
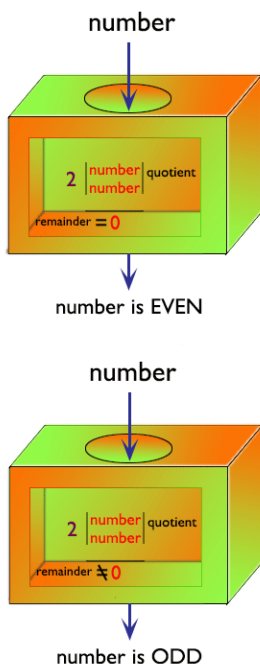
ÖRNEK 4: Verilen bir sayının tek mi çift mi olduğunu kontrol eden bir C programı yazınız.

Check the number is even or odd

number

2 |number|number| quotient

remainder = 0

number is EVEN

number

2 |number|number| quotient

remainder ≠ 0

number is ODD

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```c
#include <stdio.h>   // Include the standard input/output header file.

void main()
{
    int num1, rem1;   // Declare two integer variables 'num1' and 'rem1'.

    printf("Input an integer : ");   // Prompt the user to input an integer.
    scanf("%d", &num1);   // Read and store the user's input in 'num1'.
    rem1 = num1 % 2;   // Calculate the remainder of 'num1' when divided by 2.
    if (rem1 == 0)   // Check if the remainder is equal to 0.
        printf("%d is an even integer\n", num1);    // Print a message indicating that 'num1' is an even integer.
    else
        printf("%d is an odd integer\n", num1);   // Print a message indicating that 'num1' is an odd integer.
}
```

ÖRNEK 5: Rastgele bir sayı üreten bir C programı yazınız.

```c
#include<stdio.h>    // Include the standard input/output header file.
#include<stdlib.h>   // Include the standard library header file.
#include<time.h>     // Include the time header file for generating random numbers.

int main ()          // Start of the main function.
{
int number, input;   // Declare two integer variables 'number' and 'input'.

srand ( time(NULL) );   // Initialize the random seed using the current time.

number = rand() % 10 + 1;   // Generate a random number between 1 and 10 and store it in 'number'.

do {   // Start of a do-while loop.
printf ("\nGuess the number (1 to 10): ");   // Print a message prompting the user to guess the number.
scanf ("%d",&input);    // Read the user's input and store it in 'input'.

if (number > input)   // If the random number is greater than the user's input.
printf ("The number is higher\n");   // Print a message indicating that the number is higher.

   } while (number!=input);   // Continue looping as long as the user's input is not equal to the random number.

printf ("That is correct!\n\n");   // Print a message indicating that the user guessed correctly.

return 0;   // Return 0 to indicate successful execution of the program.
}   // End of the main function.
```