

ID:

Name Surname:

## ME1004 COMPUTER PROGRAMMING-2023-24

### HOMEWORK -2

a) Write a MATLAB program that returns a planet name for a given number. To do this, define the names of the planets in the solar system as an array, respectively (Don't forget to include Pluto ☺). Then, according to entering a number, print out to the screen '**The n'th planet is planet name**'. Use "if-else-end" statements in your code. If the user enters a number greater or lower than the number of the planets in the solar system, then print out '**There is no n'th planet in the solar system!**'. (40P)

b) Write a program that classifies solar system planets according to surface temperature. Assigning surface temperature values to the planet names as variable. Input planet names from keyboard. If the surface temperature of the planet is lower than or equal to zero-degree Celsius display "The **planet is freezing!**". If the surface temperature of the planet is between 0- and 35-degree Celsius display "**The planet is suitable for life!**". If the surface temperature of the planet is greater or equal to 35-degree Celsius display "**The planet is too hot to support life!**" (40P)

c) Write the program outputs which are shown on the command window for a single example. (20P)

The program should change the **red** words according to the entering number and planet name.

**Explanation:** Check your codes in MATLAB and submit your **handwritten** homework at the start of the first lesson in the **following week**. Do not forget to write your name and student ID.

Good Luck. Assoc. Prof. Dr. Nurhan GÜRSEL ÖZMEN Asst. Prof. Dr. Caner SANCAK

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## ANSWERS

a)

```
planets = {'Mercury', 'Venus', 'Earth', 'Mars', 'Jupiter', 'Saturn',  
'Uranus', 'Neptune', 'Pluto'};  
  
number=input ('enter a number ');  
  
if number >= 1 & number <= 9  
    planetName = planets{number};  
    fprintf('The %g th planet is %s\n', number, planetName);  
else  
    fprintf('There is no %g th planet in the solar system!\n',  
number);  
end
```

b)

```
% Assign surface temperature values to the planets  
mercury = 350; % Mercury's surface temperature in Celsius  
venus = 465; % Venus's surface temperature in Celsius  
earth = 15; % Earth's surface temperature in Celsius  
mars = -65; % Mars's surface temperature in Celsius  
jupiter = -110; % Jupiter's surface temperature in Celsius  
saturn = -140; % Saturn's surface temperature in Celsius  
uranus = -195; % Uranus's surface temperature in Celsius  
neptune = -200; % Neptune's surface temperature in Celsius
```

```
planetName=input('planet name: ');
```

```
% Classify planets based on surface temperature
```

```
if planetName <= 0  
    disp('The planet is freezing!');  
elseif planetName > 0 && planet < 35  
    disp('The planet is suitable for life!');  
else  
    disp('The planet is too hot to support life!');  
end
```

c)

```
enter a number 3  
The 3 th planet is Earth  
>>
```

---

```
planet name: earth  
The planet is suitable for life!  
>>
```