מעבדה 2 – מערכות הפעלה

מגישים:
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תרגיל 1:
קובץ **sh**:

```sh
echo "START"
mkdir $1
cd ./$1
touch $USER.txt
man wc | head -n 2 >> $USER.txt
man wc | tail -n 2 >> $USER.txt
chmod -w $USER.txt
echo "END"
```

תרגיל 2:
קוד C:

```c
#include <stdio.h>
#include <stdlib.h>

int main(int argc, char* argv[]) {
    // Variable to store the desired result
    int result = atoi(argv[1]);

    // Variables for loop iteration and storing numbers
    int i, j, firstNumber, secondNumber;

    // Check if there are at least four arguments
    if (argc < 4) {
        // Print error message and exit if there are insufficient arguments
        printf("2 numbers do not exist.\n");
        exit(1);
    }

    // Nested loops to compare each pair of numbers
    for (i = 2; i < argc; i++) {
        for (j = i + 1; j < argc; j++) {
            // Convert arguments to integers
            firstNumber = atoi(argv[i]);
            secondNumber = atoi(argv[j]);

            // Check if sum of two numbers equals the desired result
            if (firstNumber + secondNumber == result) {
```

```
                // Print the pair of numbers that satisfies the condition
                printf("2 numbers exist: %d + %d = %d\n", firstNumber, second-
Number, result);
                return 0;
            }
        }
    }

    // Print message if no pair of numbers satisfies the condition
    printf("2 numbers do not exist.\n");
    return 0;
}
```

קובץ sh:

```
cd ~/operatingSystems/lab2/targil2
cc chekNum.c -o chekNum
./chekNum 100 5 6 7 50 50
./chekNum 100 1 2 3
```

טרמינל:

```
yuval-kogan@yuval-kogan-VMware-Virtual-Platform:~$ cd /home/yuval-kogan/operatin
gSystems/lab2/targil2
yuval-kogan@yuval-kogan-VMware-Virtual-Platform:~/operatingSystems/lab2/targil2$
 ls
chekNum  chekNum.c  chekNum.sh
yuval-kogan@yuval-kogan-VMware-Virtual-Platform:~/operatingSystems/lab2/targil2$
 sh chekNum.sh
2 numbers exist: 50 + 50 = 100
2 numbers do not exist.
```

תרגיל 3:

קוד C:

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

int main(int argc, char* argv[]) {
    // Declare variables
    char* mainString = argv[1];  // Store the input string
    char* slicedElement;         // Store the elements after splitting
    int i;                       // Loop variable

    // Check if there are no arguments (excluding the program name)
    if (argc == 1) {
        // Print error message and exit if no arguments are provided
```

```
        printf("The function needs more arguments to start running.");
        exit(1);
    }

    // Convert all lowercase letters to uppercase in the input string
    for (i = 0; i < strlen(mainString); i++) {
        if (mainString[i] >= 'a' && mainString[i] <= 'z') {
            mainString[i] -= 32;  // ASCII conversion to uppercase
        }
    }

    // Tokenize the modified string based on underscore delimiter
    slicedElement = strtok(mainString, "_");
    while (slicedElement != NULL) {
        // Print each tokenized element
        printf("%s\n", slicedElement);
        // Move to the next token
        slicedElement = strtok(NULL, "_");
    }

    return 0;
}
```

קובץ sh:

```
cd ~/operatingSystems/lab2/targil3
cc catByAt.c -o catByAt
./catByAt Linux_Is_Amazing
```

טרמינל:

```
yuval-kogan@yuval-kogan-VMware-Virtual-Platform:~/operatingSystems/lab2/targil3$
 sh catByAt.sh
LINUX
IS
AMAZING
```