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Numerical Analysis

SUBMITTED TO:

SIR HASEEB

SUBMITTED BY:

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CLASS: BSCS-5(B)

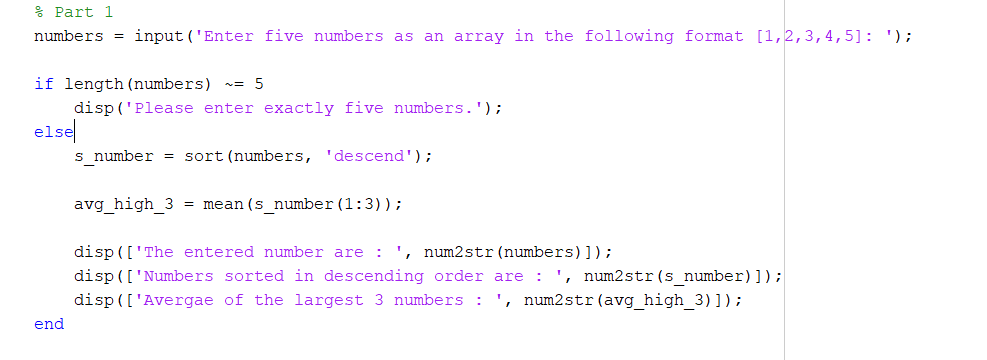
DEPARTMENT OF COMPUTER SCIENCE

AIR UNIVERSITY ISLAMABAD

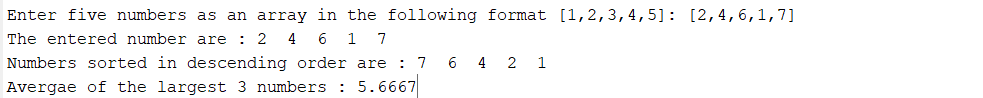
**LAB MID**

# **Question 1:**

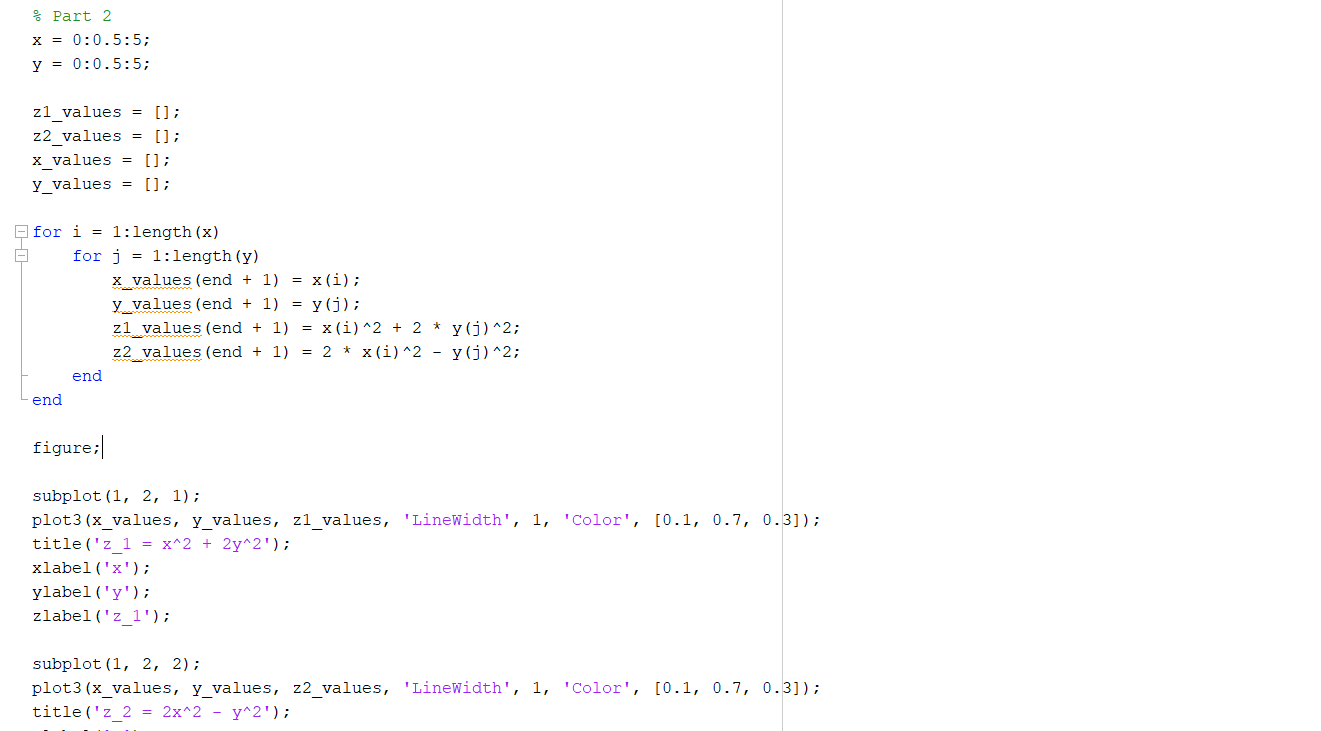
## **PART 1 – Input 5 number, calculate the sum of the highest 3**

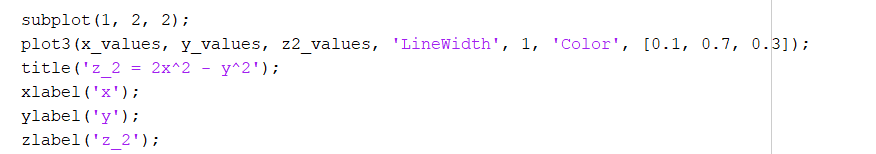


## **Output:**

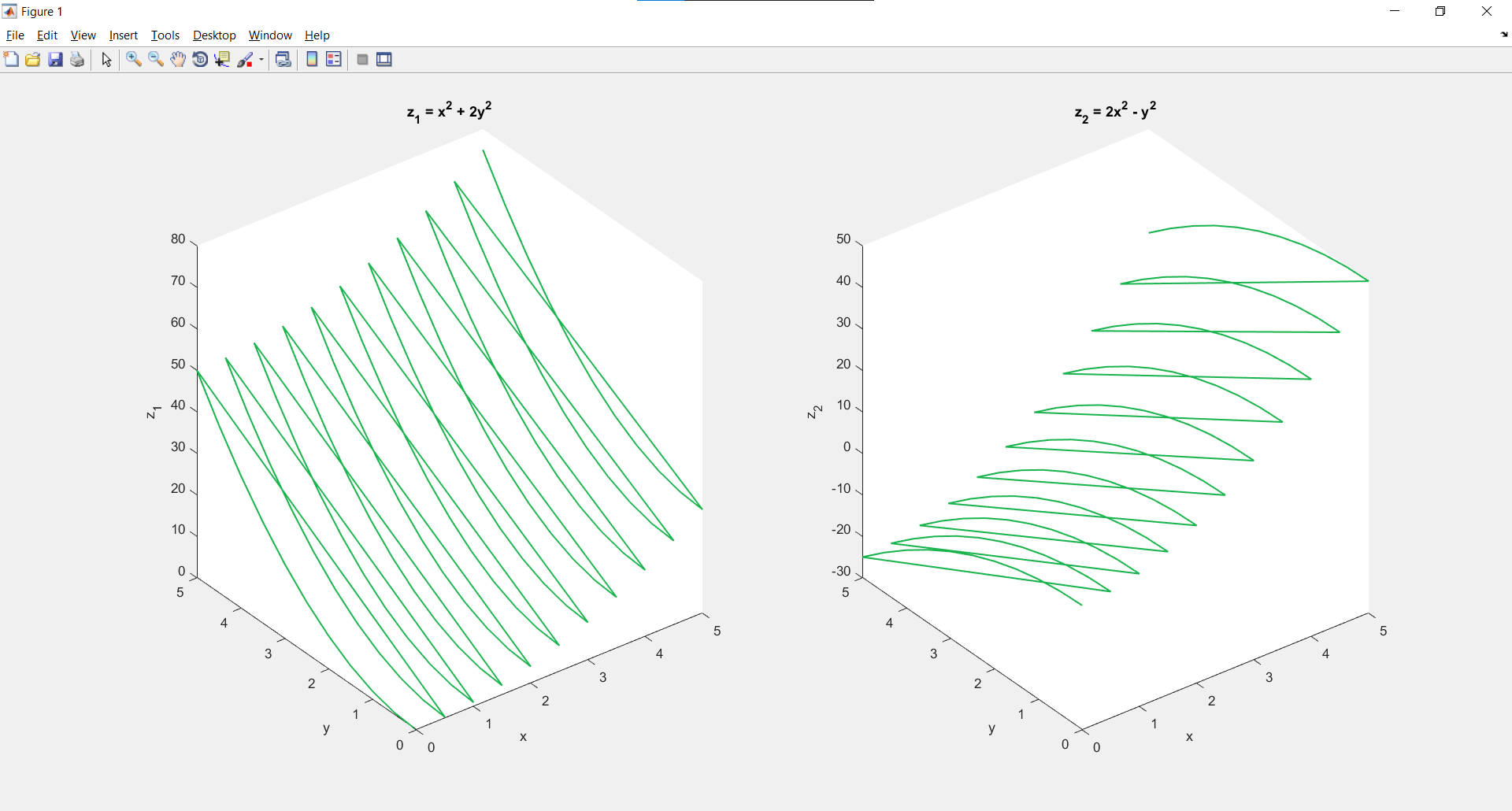


## **PART 2 – 3D graph of the given functions**





## **Output:**



# **Question 2:**

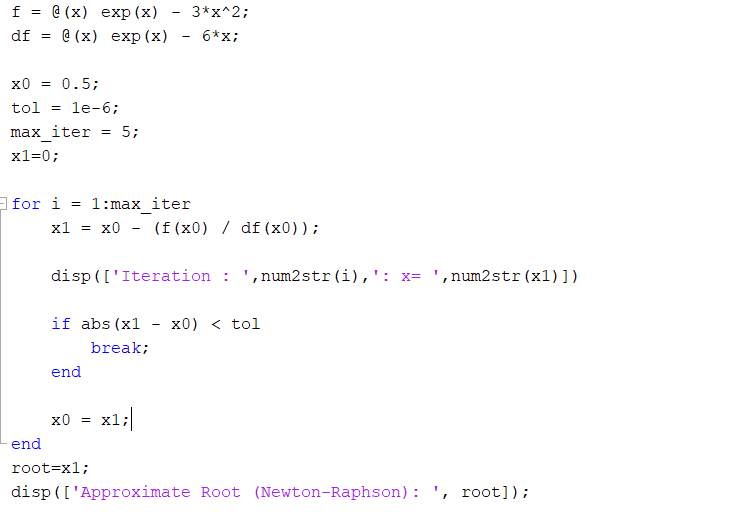
## Algorithm:

* The first step is to give the input which is always a continuous function along with the derivate of it. Lets say the function as F(x) and F’(x) as the derivate
* Next we initialize the values of x0 and x1 which can be given and if not we start it from zero
* Next we calculate the approximation using the formula

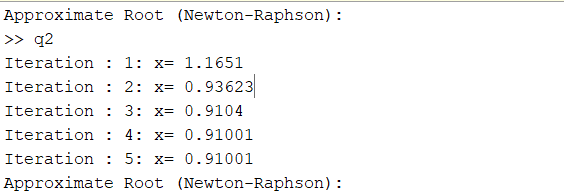
x(n+1) = x(n) – f(x(n)/f’(x(n))

* Next we check the convergence, if | x(n+1) – x(n) | < tol then we assume the x(n+1) as the root;
* We repeat until the difference is smaller than tolerance.
* Display the output

## **Code to get the answer of given function**

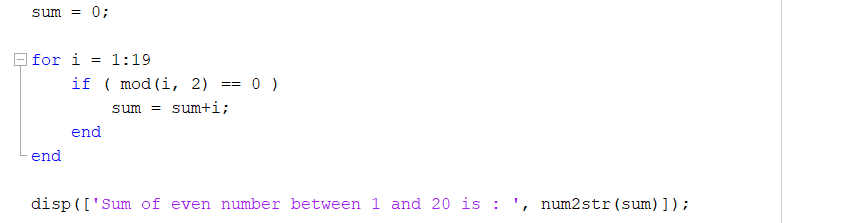


## **Output:**



# **Question 3:**

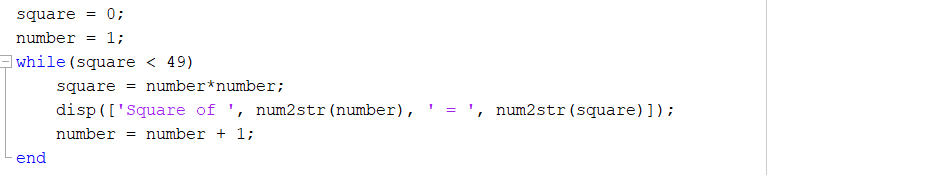
## **For Loop to print the sum of even number is range of 1 to 20**



## **Output:**



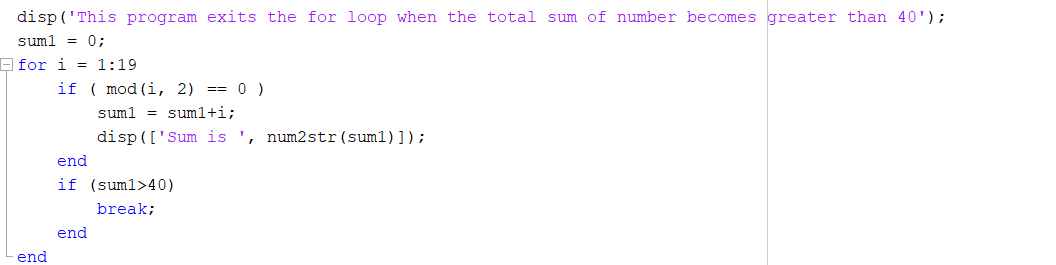
## **While loop to print the square of numbers below 50**



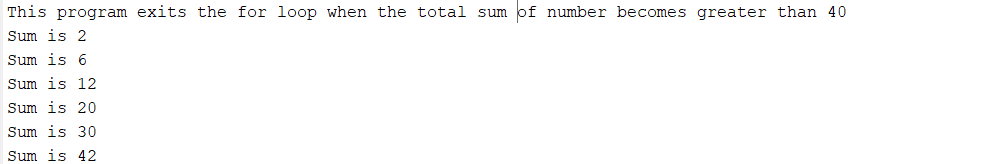
## **Output:**



## **Loop breaking on a condition**

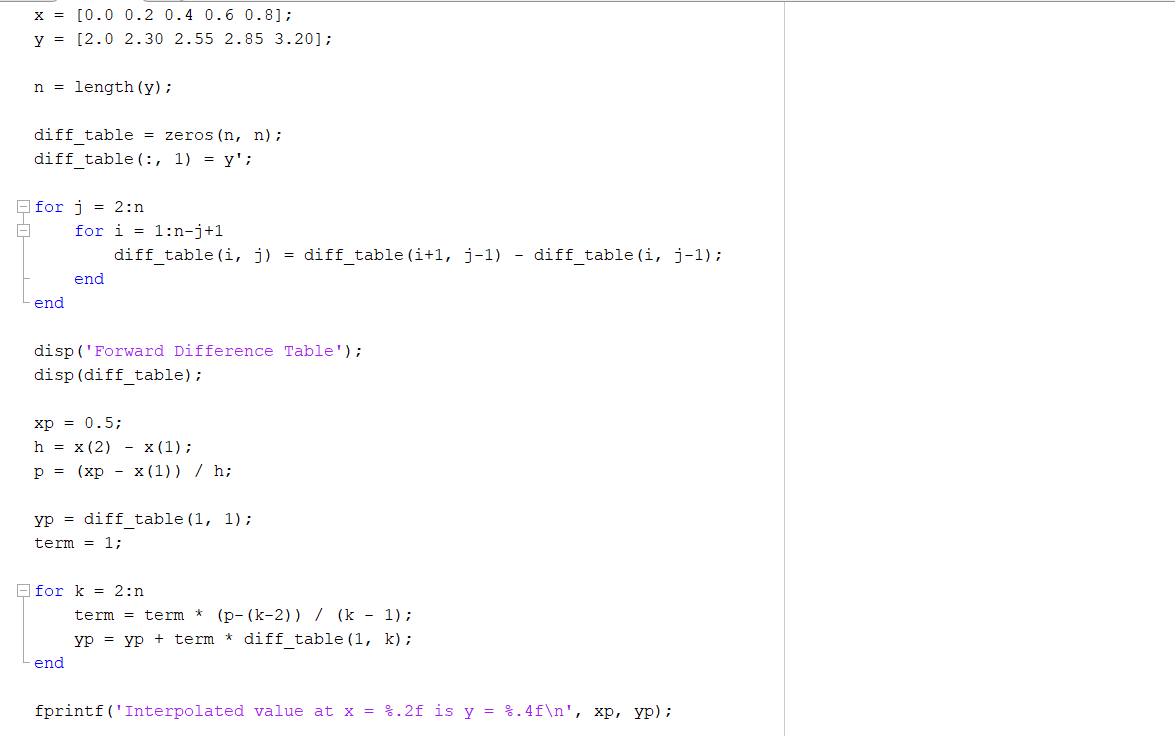


## **Output:**



# **Question 4:**

## **Code using Newton Forward Method**



## **Output:**

