



# EXPERIMENT - 6

## APPLIED MATHEMATICS LAB

### Aim

To solve ordinary differential equations using Runge- Kutta Method.

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4C7

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To solve ordinary differential equations using Runge- Kutta Method.

### Source Code:

```
clc; clear; close;

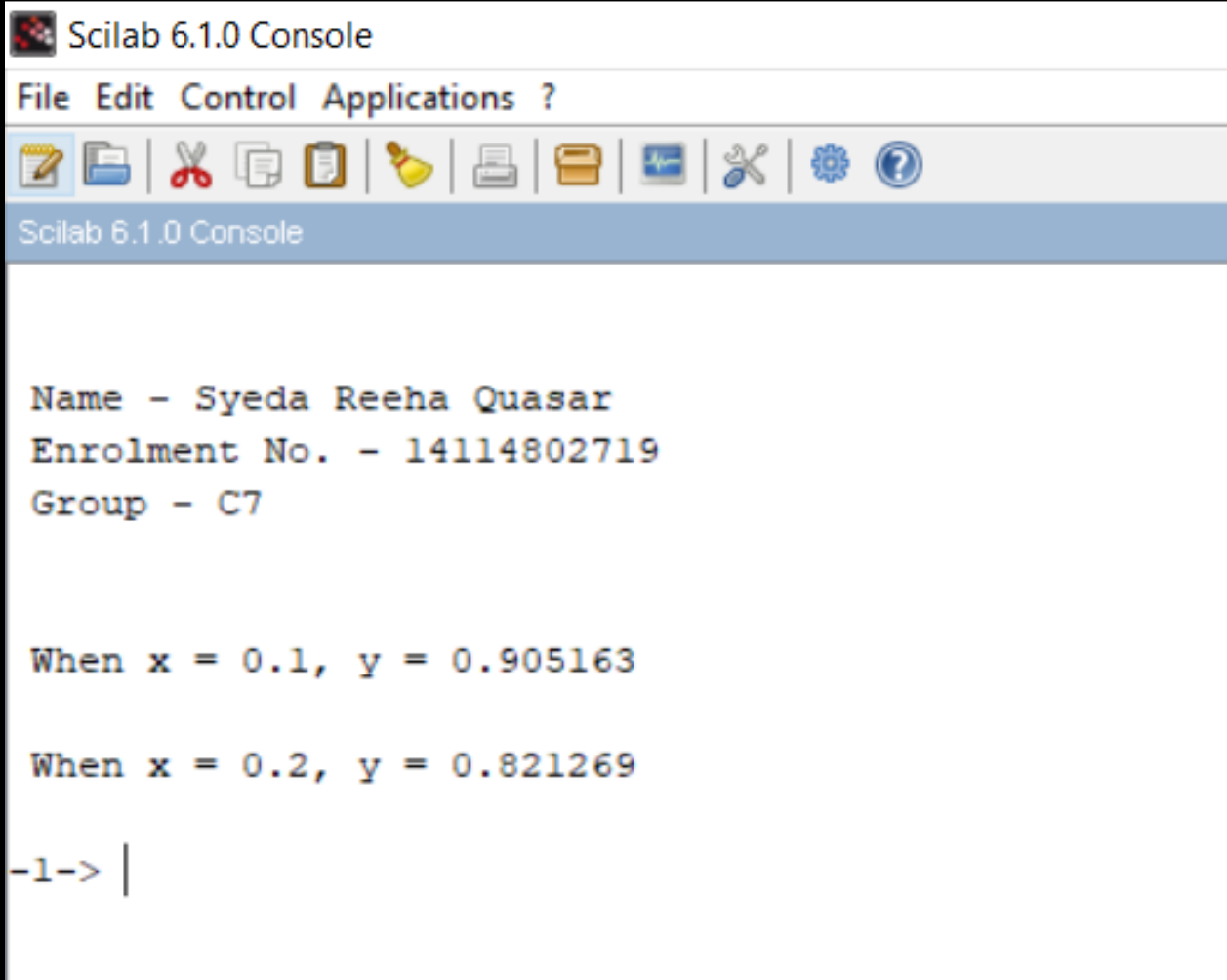
printf('\n\n Name - Syeda Reeha Quasar \n Enrolment No. - 14114802719 \n Group - C7\n\n')

deff ('z = f(x,y)', 'z = x*x - y')

x0 = 0; y0 = 1; xn = 0.2; h=0.1;
x = x0;
y = y0;

while x ~= xn
    k1 = h * f(x,y);
    k2 = h * f(x+h/2, y+k1/2);
    k3 = h * f(x+h/2,y+k2/2);
    k4 = h * f(x+h, y+k3);
    k = (k1 + (k2 + k3) * 2 + k4)/6;
    x = x + h;
    y = y + k;
    printf("\n When x = %g, y = %g\n", x, y)
end
```

## Output:



The image shows a screenshot of the Scilab 6.1.0 Console window. The window has a title bar that says "Scilab 6.1.0 Console". Below the title bar is a menu bar with the options "File", "Edit", "Control", "Applications", and "?". Under the menu bar is a toolbar with various icons for file operations (like open, save, print) and editing (like copy, paste, undo, redo). The main area of the console is a text editor with a light blue background. It contains the following text:

```
Name - Syeda Reeha Quasar  
Enrolment No. - 14114802719  
Group - C7  
  
When x = 0.1, y = 0.905163  
  
When x = 0.2, y = 0.821269  
  
-1-> |
```