EXPERIMENT - 6

APPLIED MATHEMATICS LAB

Aim

To solve ordinary differential equations using Runge- Kutta Method.

Syeda Reeha Quasar
14114802719
4C7

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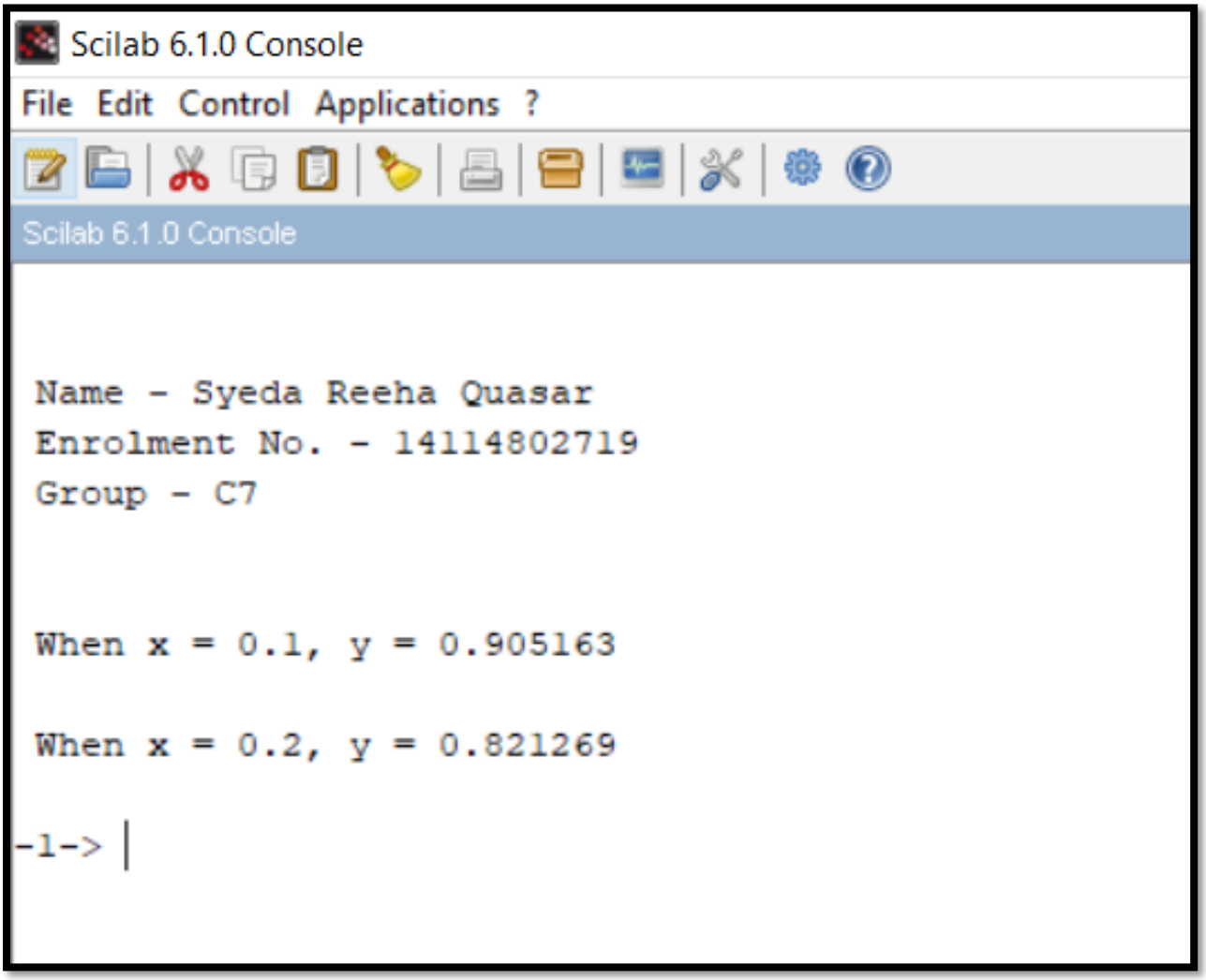
Aim:

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:


Scilab 6.1.0 Console
File Edit Control Applications ?
Scilab 6.1.0 Console
Name - Syeda Reeha Quasar
Enrolment No. - 14114802719
Group - C7
When x = 0.1, y = 0.905163
When x = 0.2, y = 0.821269
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