```
 1:
 2: ****************************************
 3: ./ode_mod.f90
 4:
 5: MODULE ode_mod
 6: !****
 7: !**** Module file to hold various numerical methods for
 8: !**** solving ordinary differential equations.
 9: !****
10:
11:   IMPLICIT NONE
12:
13:
14:   CONTAINS
15:
16:   SUBROUTINE euler(y,x,h)
17:   !******** Does one step of Euler's Method ********
18:
19:     ! *** Dummy declarations ***
20:     [ Declarations ]
21:
22:     y= ?
23:     x= ?
24:
25:   END SUBROUTINE euler
26:
27:   !*********************************************
28:
29:   FUNCTION ode(x,y)
30:   !** Function to return the value of the the differential
31:   !** equation for a given x and y
32:
33:     !*** Dummy declarations
34:     [ Declarations ]
35:
36:
37:     !*** Function declaration ***
38:     [ Declaration ]
39:
40:
41:     ode= ?
42:
43:   END FUNCTION ode
44:
45:   !*********************************************
46:
47: END MODULE ode_mod
48: ****************************************
49:
50:
51: ****************************************
52: ./main.f90
53:
54: PROGRAM main
55: !**
56: !**  Driver program for ode module
57: !**  Incomplete Code
58: !**
59: !**
60:
61:
62:   USE  [ module to use ]
63:
64:   IMPLICIT NONE
65:
66:   [ Declare Required Variables here ]
67:
```



```
68:   [ print out  table header]
69:   [ print first line of table (inital condition) ]
70:
71:   DO i=1,10
72:
73:
74:     CALL euler(y,x,h)
75:     !CALL heun(y,x,h)
76:     !CALL adam4(y,x,h)
77:     !CALL modmilne(y,x,h)
78:     !CALL rk4(y,x,h)
79:
80:     [ Calculate error      ]
81:     [ output line to table ]
82:
83:   ENDDO
84:
85: END PROGRAM main
86: ****************************************
87:
```