



Graphic Era
HILL UNIVERSITY

Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)

Term Work

On

COMPUTER BASED NUMERICAL AND STATISTICAL TECHNIQUE

(PMA502)

Submitted to:

Submitted by:

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Assistant Professor University Roll. No.: 2018550

GEHU, D. Dun Class Roll No./Section: 39/A

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

GRAPHIC ERA HILL UNIVERSITY, DEHRADUN



Graphic Era

HILL UNIVERSITY

Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)

DEPARTMENT OF CSE STUDENT LAB REPORT SHEET

Name of StudentMob.No.....

Address Permanent

.....

Father's NameOccupation Mob. No

.....

Mother's Name OccupationMob. No.....

Section Branch Semester Class Roll NoGrade A BC

Local Address Email Marks 5 31

Photograph
Passport Size

S.No.	Practical	D.O.P.	Date of Submission	Grade (Viva)	Grade (Report File)	Total Marks (out of 10)	Student's Signature	Teacher's Signature
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

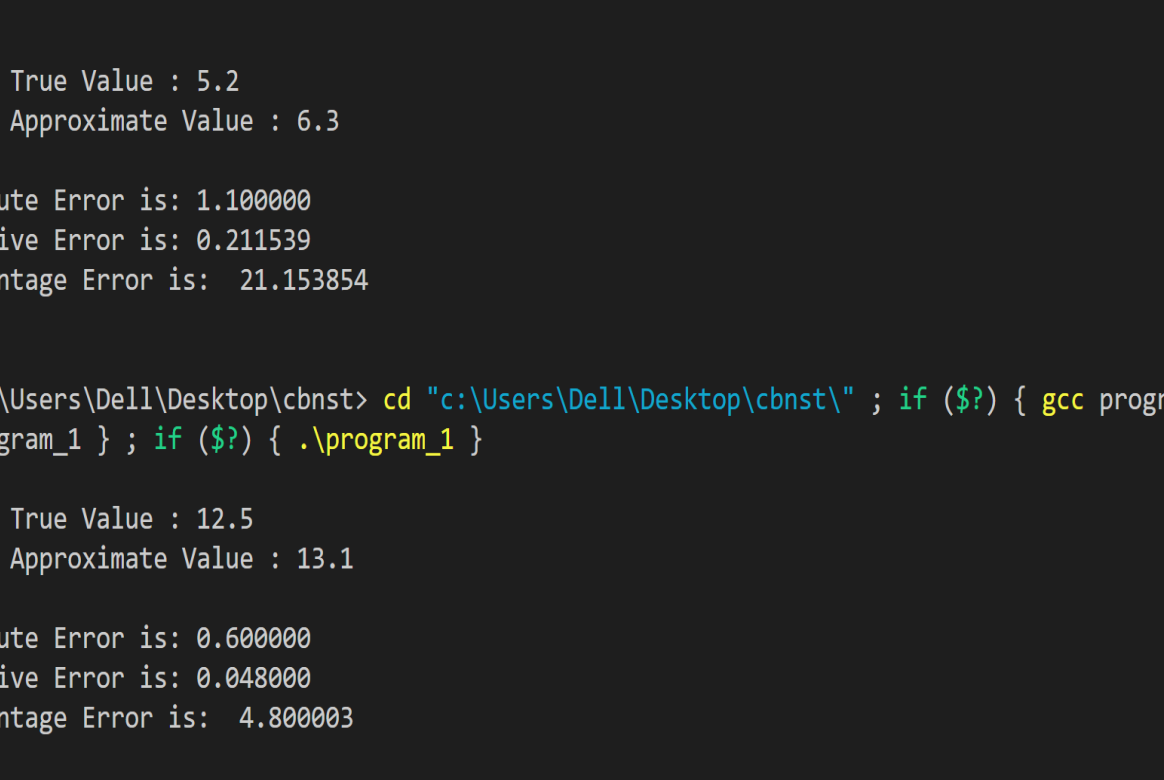
S.No.	Practical	D.O.P.	Date of Submission	Grade (Viva)	Grade (Report File)	Total Marks (out of 10)	Student's Signature	Teacher's Signature
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

Total No of Practical allotted

Total No of Practical completed

Percentage Attendance of Practical

Output



```
program_1.c - cbnst - Visual Studio Code

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER

Enter True Value : 5.2
Enter Approximate Value : 6.3

Absolute Error is: 1.100000
Relative Error is: 0.211539
Percentage Error is: 21.153854

PS C:\Users\Dell\Desktop\cbnst> cd "c:\Users\Dell\Desktop\cbnst\" ; if ($?) { gcc program_1.c -o program_1 } ; if ($?) { .\program_1 }

Enter True Value : 12.5
Enter Approximate Value : 13.1

Absolute Error is: 0.600000
Relative Error is: 0.048000
Percentage Error is: 4.800003

PS C:\Users\Dell\Desktop\cbnst>
```

Output

Equation: $-(x*x*x) - (5*x) + 1$

```
File Edit Selection View Go Run Terminal Help
program_2.c - cbnst - Visual Studio Code

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER
Code + - - - - X

PS C:\Users\Dell\Desktop\cbnst> cd "c:\Users\Dell\Desktop\cbnst\" ; if ($?) { gcc program_2.c -
o program_2 } ; if ($?) { .\program_2 }

Enter the first value: 0
Enter the second value: 1
Enter the allowed error: 0.001

Roots are 0.000000 and 1.000000
Iteration no 1: root value is : 0.500000 at x = 0.000000 and b = 0.500000
Iteration no 2: root value is : 0.250000 at x = 0.000000 and b = 0.250000
Iteration no 3: root value is : 0.125000 at x = 0.125000 and b = 0.250000
Iteration no 4: root value is : 0.187500 at x = 0.187500 and b = 0.250000
Iteration no 5: root value is : 0.218750 at x = 0.187500 and b = 0.218750
Iteration no 6: root value is : 0.203125 at x = 0.187500 and b = 0.203125
Iteration no 7: root value is : 0.195313 at x = 0.195313 and b = 0.203125
Iteration no 8: root value is : 0.199219 at x = 0.199219 and b = 0.203125
Iteration no 9: root value is : 0.201172 at x = 0.201172 and b = 0.203125
Iteration no 10: root value is : 0.202148 at x = 0.201172 and b = 0.202148
Iteration no 11: root value is : 0.201660 at x = 0.201172 and b = 0.201660

PS C:\Users\Dell\Desktop\cbnst>
```

```
File Edit Selection View Go Run Terminal Help
program_2.c - cbnst - Visual Studio Code

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER
Code + - - - - X

Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Dell\Desktop\cbnst> cd "c:\Users\Dell\Desktop\cbnst\" ; if ($?) { gcc program_2.c -
o program_2 } ; if ($?) { .\program_2 }

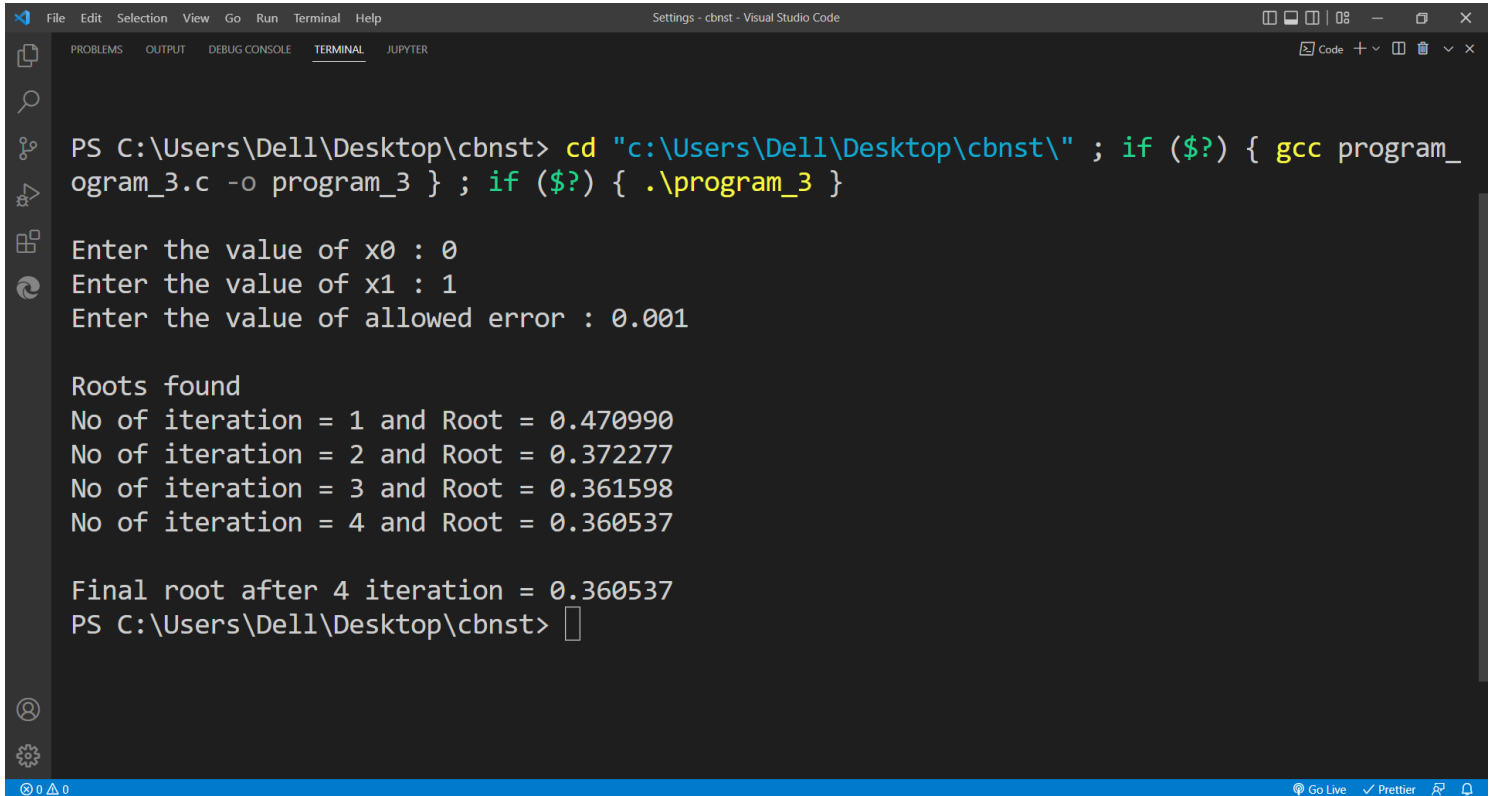
Enter the first value: 0
Enter the second value: 1
Enter the allowed error: 0.1

Roots are 0.000000 and 1.000000
Iteration no 1: root value is : 0.500000 at x = 0.000000 and b = 0.500000
Iteration no 2: root value is : 0.250000 at x = 0.000000 and b = 0.250000
Iteration no 3: root value is : 0.125000 at x = 0.125000 and b = 0.250000
Iteration no 4: root value is : 0.187500 at x = 0.187500 and b = 0.250000

PS C:\Users\Dell\Desktop\cbnst>
```

OUTPUT

Equation:- $(3 * x) + \sin(x) - \exp(x)$

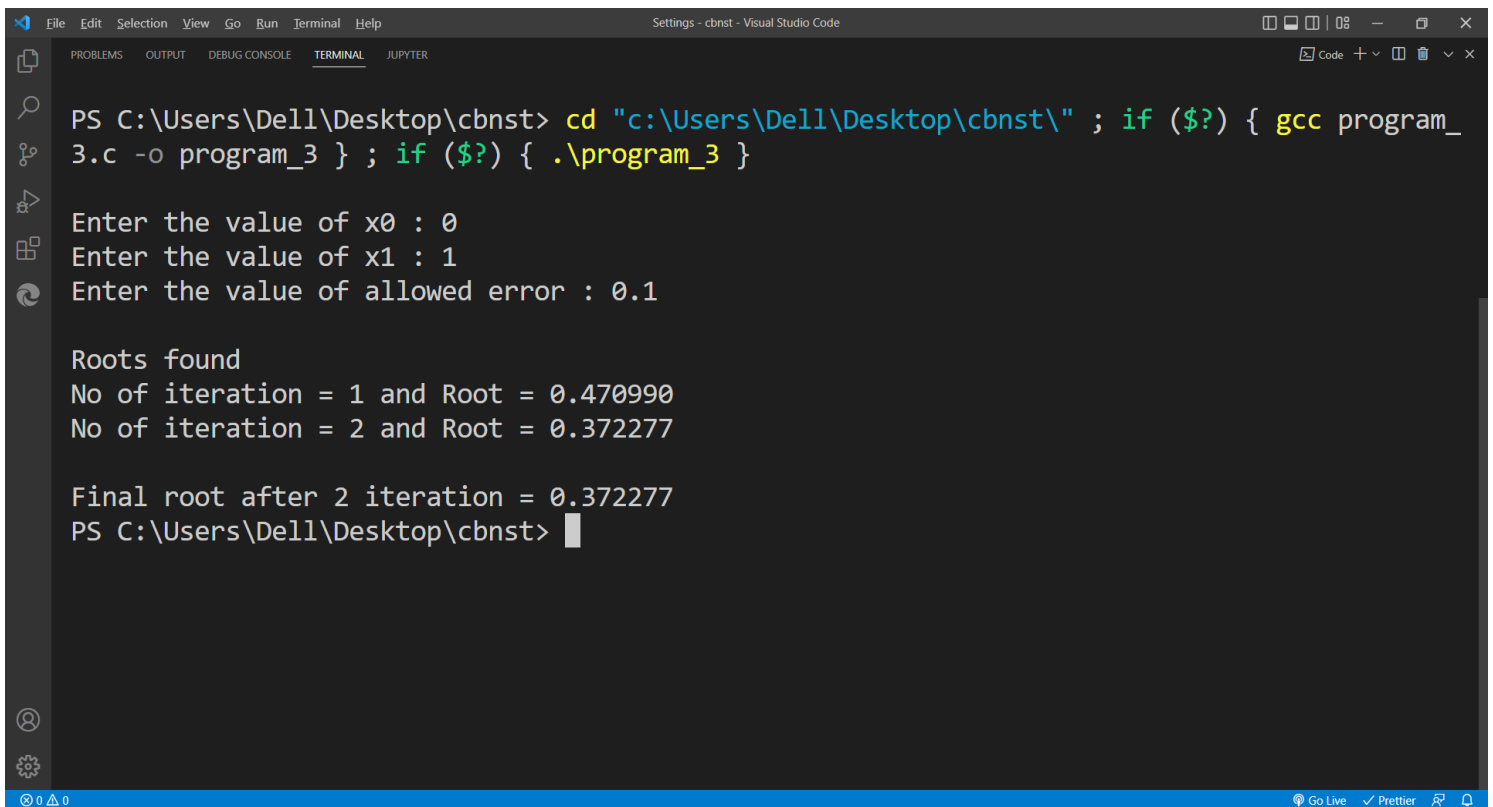


```
PS C:\Users\Dell\Desktop\cbnst> cd "c:\Users\Dell\Desktop\cbnst\" ; if ($?) { gcc program_ogram_3.c -o program_3 } ; if ($?) { .\program_3 }

Enter the value of x0 : 0
Enter the value of x1 : 1
Enter the value of allowed error : 0.001

Roots found
No of iteration = 1 and Root = 0.470990
No of iteration = 2 and Root = 0.372277
No of iteration = 3 and Root = 0.361598
No of iteration = 4 and Root = 0.360537

Final root after 4 iteration = 0.360537
PS C:\Users\Dell\Desktop\cbnst>
```



```
PS C:\Users\Dell\Desktop\cbnst> cd "c:\Users\Dell\Desktop\cbnst\" ; if ($?) { gcc program_3.c -o program_3 } ; if ($?) { .\program_3 }

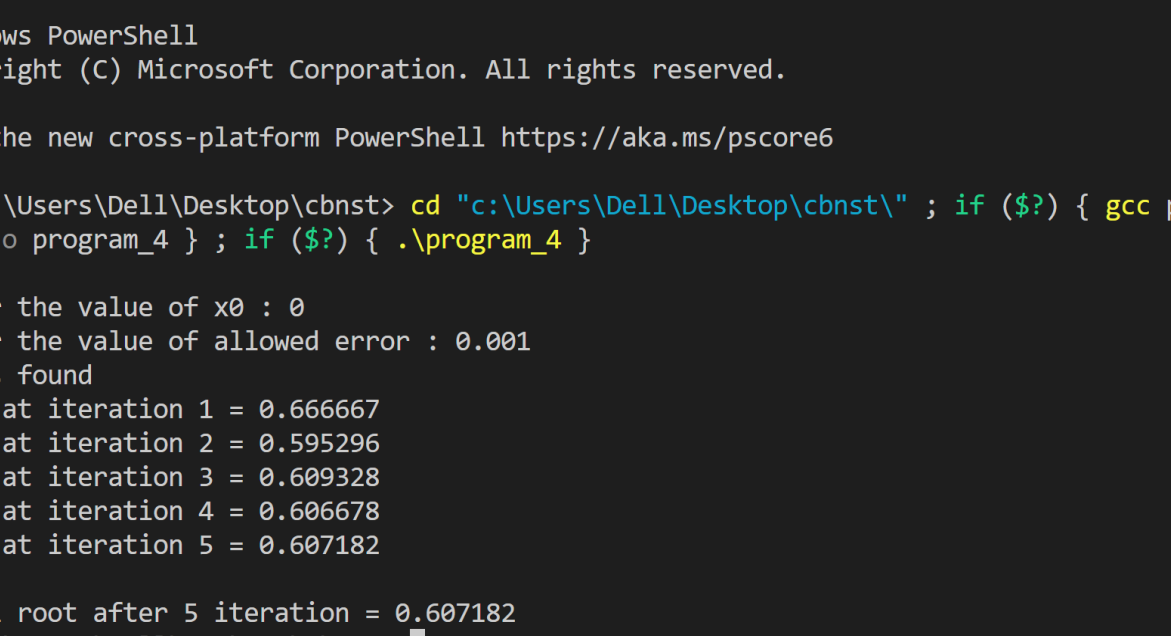
Enter the value of x0 : 0
Enter the value of x1 : 1
Enter the value of allowed error : 0.1

Roots found
No of iteration = 1 and Root = 0.470990
No of iteration = 2 and Root = 0.372277

Final root after 2 iteration = 0.372277
PS C:\Users\Dell\Desktop\cbnst>
```

OUTPUT

Equation:- $\cos(x) - (3 * x) + 1$



The screenshot shows a Visual Studio Code interface with a terminal window open. The terminal output is as follows:

```

Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

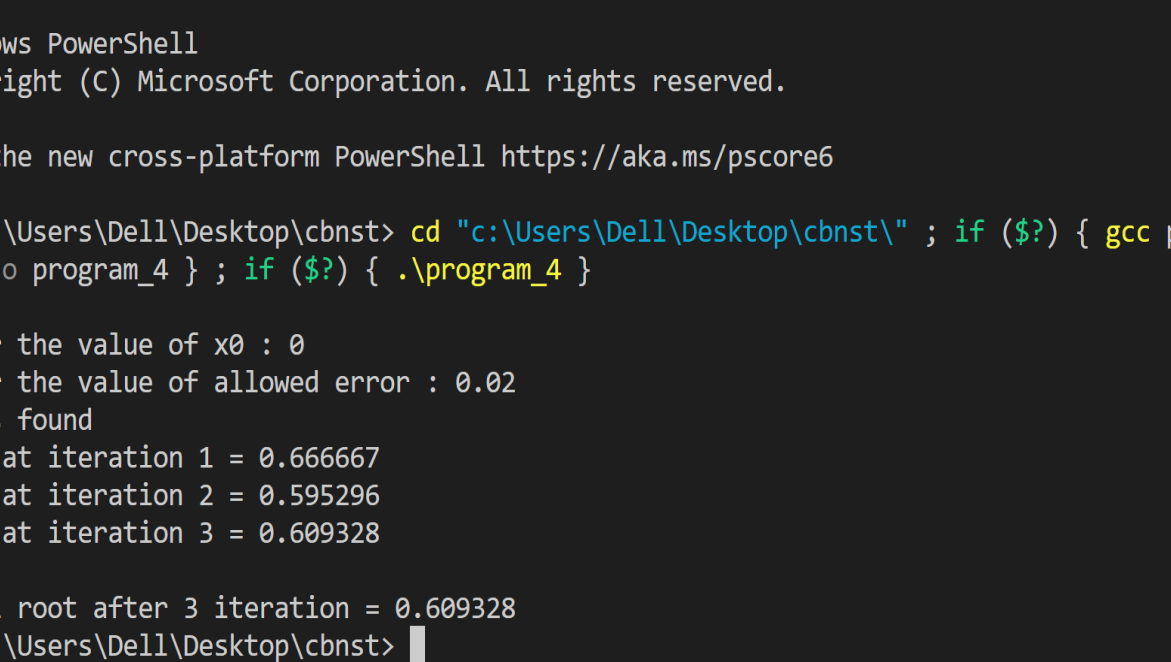
PS C:\Users\Dell\Desktop\cbnst> cd "c:\Users\Dell\Desktop\cbnst\" ; if ($?) { gcc program_4.c -o program_4 } ; if ($?) { .\program_4 }

Enter the value of x0 : 0
Enter the value of allowed error : 0.001
Roots found
Root at iteration 1 = 0.666667
Root at iteration 2 = 0.595296
Root at iteration 3 = 0.609328
Root at iteration 4 = 0.606678
Root at iteration 5 = 0.607182

Final root after 5 iteration = 0.607182
PS C:\Users\Dell\Desktop\cbnst>

```

The status bar at the bottom indicates the current file is 'program_4.c' at line 11, column 15, with a UTF-8 encoding and CRLF line endings. It also shows various extensions like Go Live, Win32, Prettier, and others are installed.



```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Dell\Desktop\cbnst> cd "c:\Users\Dell\Desktop\cbnst\" ; if ($?) { gcc program_4.c -o program_4 } ; if ($?) { .\program_4 }

Enter the value of x0 : 0
Enter the value of allowed error : 0.02
Roots found
Root at iteration 1 = 0.666667
Root at iteration 2 = 0.595296
Root at iteration 3 = 0.609328

Final root after 3 iteration = 0.609328
PS C:\Users\Dell\Desktop\cbnst>
```

