



LEEDS
BECKETT
UNIVERSITY

Advanced Software Engineering Component-2 Documentation

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Programs

- A. Basic Drawing:
1. Restricted Drawing:

```
moveto 100,100
pen 0,255,0
circle 50
pen 255,0,0
moveto 150,50
rect 50,100
```

[13:58:20.628] ? Line 5 executed successfully
[13:58:20.629] Line 6: Executing 'rect 50,100' (iteration 6)
[13:58:20.631] ? Line 6 executed successfully
[13:58:20.632] Successfully executed program (total iterations: 6)
Canvas State: X=150, Y=50
[13:58:20.635] === Program Execution Completed Successfully ===

2. Unrestricted Drawing:

Sukriti ASE Assignment

```
file
P:
```

```
moveto 100,150
pen 0,255
circle 150
pen 255,0
moveto 150,50
rect 150,100
moveto 150,200
pen 0,255
circle 250
pen 255,0
moveto 200,250
rect 200,100
```

B. Variables:

1. Restricted Int:

Sukriti ASE Assignment

```
file
P:
```

```
int radius = 50
int width
width = 2*radius
int height = 100
int colour = 255
pen colour,0
moveto 100, 100
circle radius
pen 0,colour,0
rect width, height
```

2. Unrestricted Int:

Sukriti ASE Assignment

file

```
P
```

```
int radius = 50
int width
int number
width = 2*radius
int height = 100
int red = 255
int green = 128
pen red,0
moveto 100, 100
circle radius
rect width, height
pen red,0
moveto 150, 150
circle radius
```

Run

```
[14:20:24.878] ? Line 13 executed successfully
[14:20:24.880] Line 14: Executing 'circle radius' (iteration 14)
[14:20:24.881] ? Line 14 executed successfully
[14:20:24.882] Successfully executed program (total iterations: 14)
Canvas State: X=150, Y=150
[14:20:24.885] === Program Execution Completed Successfully ===
```

3. Restricted Reals:

Sukriti ASE Assignment

file

```
P
```

```
pen 0,0,255
real length = 15.5
real width = 10.0
write length * width
```

Run

```
[14:21:25.998] ? Line 3 executed successfully
[14:21:26.001] Line 4: Executing 'write length * width' (iteration 4)
[14:21:26.036] ? Line 4 executed successfully
[14:21:26.040] Successfully executed program (total iterations: 4)
Canvas State: X=100, Y=100
[14:21:26.047] === Program Execution Completed Successfully ===
```

4. Unrestricted Reals:

Sukriti ASE Assignment

file

```
pen 0,0,255
real length = 15.5
real width = 10.0
real pi = 3.14159
real radius = 27.7
real circ = 2 * pi * radius
real another
real more
moveto 100,100
write length * width
moveto 100,125
write circ
circle circ
```

Run

[14:22:36.278] ? Line 12 executed successfully
[14:22:36.283] Line 13: Executing 'circle circ' (iteration 13)
[14:22:36.292] ? Line 13 executed successfully
[14:22:36.298] Successfully executed program (total iterations: 13)
Canvas State: X=100, Y=125
[14:22:36.311] === Program Execution Completed Successfully ===

5. Restricted Arrays:

Sukriti ASE Assignment

file

```
int x = 0
real y
array int nums 10
poke nums 5 = 99
peek x = nums 5
circle x
array real prices 10
poke prices 5 = 99.99
peek y = prices 5
write "£"+y
```

Run

[14:23:51.267] ? Line 9 executed successfully
[14:23:51.268] Line 10: Executing 'write "£"+y' (iteration 10)
[14:23:51.284] ? Line 10 executed successfully
[14:23:51.286] Successfully executed program (total iterations: 10)
Canvas State: X=100, Y=100
[14:23:51.292] === Program Execution Completed Successfully ===

6. Unrestricted Arrays:

Sukriti ASE Assignment

```

file
P

int x
real y
real z
array int nums 10
array real prices 10
array real logs 10
poke nums 5 = 99
peek x = nums 5
circle x
pen 0,255,0
poke prices 5 = 99.99
peek y = prices 5
write "£" + y
array real logs 10
poke logs 5 = 100.01
peek z = logs 5
moveto 0,25
write z

```

Run

[14:25:07.029] ? Line 17 executed successfully
[14:25:07.031] Line 18: Executing 'write z' (iteration 18)
[14:25:07.043] ? Line 18 executed successfully
[14:25:07.047] Successfully executed program (total iterations: 18)
Canvas State: X=0, Y=25
[14:25:07.050] === Program Execution Completed Successfully ===

C. Ifs and Loops:

1. restricted ifs:

Sukriti ASE Assignment

```

file
P

int control = 50
if control < 10
    pen 255,0,0
    circle 20
else
    pen 0,255,0
    circle 100
end if

```

Run

[14:26:43.217] ? Line 7 executed successfully
[14:26:43.219] Line 8: Executing 'end if' (iteration 8)
[14:26:43.222] ? Line 8 executed successfully
[14:26:43.224] Successfully executed program (total iterations: 8)
Canvas State: X=100, Y=100
[14:26:43.230] === Program Execution Completed Successfully ===

2. Unrestricted ifs:

Sukriti ASE Assignment

```

file
Pi

int control = 50
if control < 10
    if control < 5
        pen 255,0
    else
        pen 0,0,255
    end if
    circle 20
    rect 20,20
else
    pen 0,255,0
    circle 100
    rect 100,100
end if

```

Run

[14:27:45.901] ? Line 13 executed successfully
[14:27:45.903] Line 14: Executing 'end if' (iteration 14)
[14:27:45.904] ? Line 14 executed successfully
[14:27:45.907] Successfully executed program (total iterations: 14)
Canvas State: X=100, Y=100
[14:27:45.913] === Program Execution Completed Successfully ===

3. Restricted whiles:

Sukriti ASE Assignment

```

file
Pi

moveto 100,100
int width = 9
int height = 100
pen 255,128,0
while height > 50
    circle height
    height = height - 15
end while
pen 0,255,0
moveto 25,25
rect 100,100

```

Run

[14:29:20.613] ? Line 10 executed successfully
[14:29:20.615] Line 11: Executing 'rect 100,100' (iteration 24)
[14:29:20.617] ? Line 11 executed successfully
[14:29:20.619] Successfully executed program (total iterations: 24)
Canvas State: X=25, Y=25
[14:29:20.623] === Program Execution Completed Successfully ===

4. Unrestricted whiles:

Sukriti ASE Assignment

```

file
P

moveto 100,100
int width = 9
int height = 150
pen 255,128,128
while height > 50
    circle height
    height = height - 15
    if height < 100
        pen 0,128,255
    end if
end while
pen 0,255,0
moveto 50,50
height = 50
while height > 10
    rect height,height
    height = height - 10
end while

```

Run

[14:28:49.473] Condition: height(10) > 10(10) = False
[14:28:49.475] While condition result: False
[14:28:49.477] Condition false - jumping from line 15 to after line 18
[14:28:49.480] Successfully executed program (total iterations: 74)
Canvas State: X=50, Y=50
[14:28:49.483] === Program Execution Completed Successfully ===

D. Miscellaneous:

Sukriti ASE Assignment

```

file
P

circle 100
circle 50
rect 100,100
rect 200,200

```

Run

[14:30:13.006] ? Line 11 executed successfully
[14:30:13.010] Line 12: Executing 'rect 200,200' (iteration 12)
[14:30:13.013] ? Line 12 executed successfully
[14:30:13.015] Successfully executed program (total iterations: 12)
Canvas State: X=100, Y=100
[14:30:13.019] === Program Execution Completed Successfully ===

Test Cases:

Test Scenario

Validate AppArray, AppInt, AppReal, and AppWhile command execution.

Test Steps and Results

1. Declare Integer Variable

Task: To verify that declaring an integer variable stores it correctly in the program memory.

Test Data: int x = 10

Expected Result: Variable is created and stores the correct value.

Actual Result: As Expected

Status: PASS

2. Create Integer Array

Task: To verify that an integer array can be created with specified dimensions.

Test Data: int array 3 4

Expected Result: Array is created with correct row and column size.

Actual Result: As Expected

Status: PASS

3. Evaluate While Condition

Task: To ensure that a while-loop condition is evaluated correctly using an integer variable.

Test Data: while x > 5

Expected Result: Condition is evaluated without errors.

Actual Result: As Expected

Status: PASS

4. Access Real Array Value

Task: To verify that values in a real array can be accessed correctly.

Test Data: real r = 2.5

Expected Result: Correct real value is returned.

Actual Result: As Expected

Status: PASS

	A	B	C	D	E	F					
1	TEST CASE REPORT										
2											
3	Test Case ID	TC_001 – TC_004		Test Description	BOOSE Command Unit Tests						
4	Created By	Sukriti Baryl		Reviewed By	Module Leader						
5	Date Tested		10/01/2026	Final Result	PASS						
6											
7	Prerequisites	Test Data									
8	1. BOOSE App Installed	1. int x = 10									
9	2. StoredProgram Initialized	2. real r = 2.5									
10	3. Canvas Loads Without Errors	3. int array 3 4									
11	4. Parser Accepts Input	4. while x > 5									
12											
13	Test Scenario: Validate AppArray, AppInt, AppReal, and AppWhile command execution										
14	Step #	Step Details	Expected Results	Actual Results	Status						
15	1	Declare integer variable	Variable stored correctly	As Expected	PASS						
16	2	Create integer array	Array created with dimensions	As Expected	PASS						
17	3	Evaluate while condition	Condition evaluated	As Expected	PASS						
18	4	Access real array value	Correct value returned	As Expected	PASS						
19											
20											
21											

Test case running:

Test Explorer

Ready

Test Duration Traits Error Message

BOOSEAPPTEST1 (31) 43 ms

BooseappTests (31) 43 ms

AppWhileTests (9) 12 ms

- While_WithRealVariableCondition 3 ms
- While_WithLiteralTrueCondition < 1 ms
- While_WithLiteralFalseCondition < 1 ms
- While_WithIntegerVariableCondition < 1 ms
- While_WithExpressionOnIf_While_WithIntegerVariableCondition_EvaluatesCorrectly
- While_UnknownVariable_ThrowsException 1 ms
- While_MissingCondition_ThrowsException 6 ms
- While_MissingComparisonOperator_ThrowsException < 1 ms
- While_InvalidCondition_ThrowsException < 1 ms

AppRealTests (3) 12 ms

- Real_RedeclareExistingVariable_ThrowsException < 1 ms
- Real_MissingVariableName_ThrowsException < 1 ms
- Real_DeclarationWithoutValue_ThrowsException 12 ms

AppIntTests (7) 2 ms

- Int_RedeclareExistingVariable_ThrowsException < 1 ms
- Int_MoreThan100Variables_ThrowsException < 1 ms
- Int_MissingVariableName_ThrowsException < 1 ms
- Int_DeclarationWithoutValue_CreatesObject < 1 ms
- Int_DeclarationWithLiteralValue_ThrowsException < 1 ms
- Int_DeclarationWithExpression_ThrowsException 1 ms
- Int_AssignmentToExistingVariable_ThrowsException 1 ms

AppCircleTests (5) < 1 ms

- Circle_ZeroRadius_ThrowsException < 1 ms
- Circle_TooManyParameters_ThrowsException < 1 ms
- Circle_NegativeRadius_ThrowsException < 1 ms
- Circle_MissingParameter_ThrowsException < 1 ms
- Circle_InvalidVariable_ThrowsException < 1 ms

AppArrayTests (7) 17 ms

- Missing_Parameters_ThrowsException < 1 ms
- Invalid_ArrayType_ThrowsException < 1 ms
- Create_RealArray_2D_Success 9 ms
- Create_RealArray_1D_Success < 1 ms
- Create_IntArray_2D_Success 2 ms

Search (Ctrl+I)

0 Warnings 0 Errors

Run Debug

Group Summary

BOOSEAPPTEST1

Tests in group: 31

Total Duration: 43 ms

Outcomes

31 Passed

This screenshot shows the Test Explorer window in Visual Studio. The left pane displays a hierarchical list of test cases grouped by category. The right pane provides a summary of the test run, including the number of tests, duration, and outcomes. All 31 tests have passed.