Software Quality And Testing
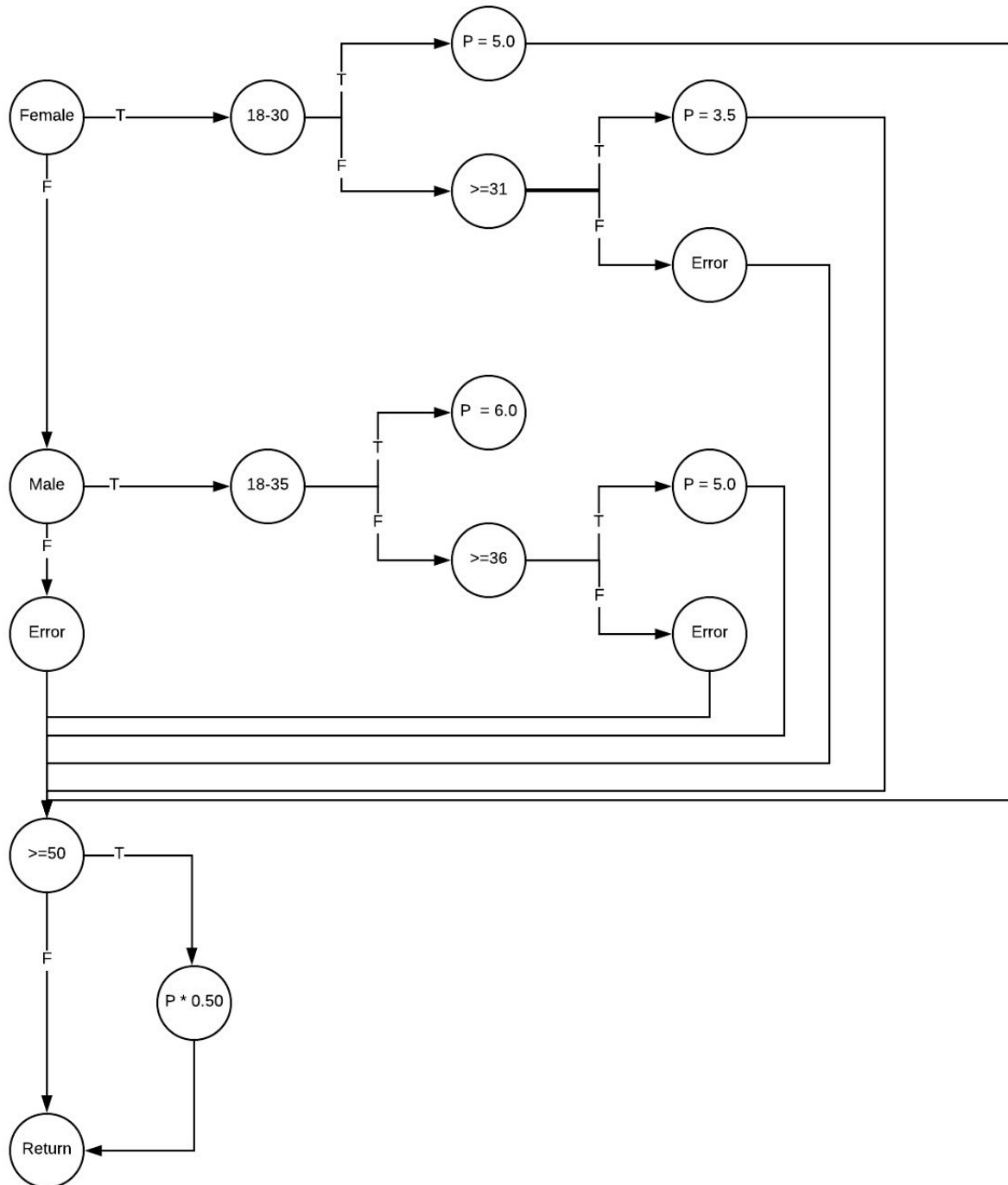

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Flow Graph

```
                                              ┌─────────┐
                                         ┌─T──│ P = 5.0 │──────────────────────────┐
                                         │    └─────────┘                          │
                                         │                    ┌─────────┐          │
┌────────┐        ┌───────┐              │               ┌─T──│ P = 3.5 │────────┐ │
│ Female │──T──▶ │ 18-30 │──T────────────┤               │    └─────────┘        │ │
└────────┘        └───────┘              │   ┌───────┐   │                       │ │
     │                               └─F─▶│ >=31  │──T────┤                       │ │
     F                                    └───────┘   │    ┌─────────┐            │ │
     │                                                └─F──▶│  Error  │─────────┐ │ │
     ▼                                                      └─────────┘         │ │ │
                         ┌─────────┐                                            │ │ │
                    ┌─T──│ P = 6.0 │                                            │ │ │
┌────────┐   ┌───────┐   │         └─────────┐                                  │ │ │
│  Male  │─T─▶│ 18-35 │─┤                                ┌─────────┐            │ │ │
└────────┘   └───────┘   │                           ┌─T──│ P = 5.0 │────────┐  │ │ │
     │                   │   ┌───────┐               │    └─────────┘        │  │ │ │
     F               └─F──▶│ >=36  │──T──────────────┤                       │  │ │ │
     │                     └───────┘               │    ┌─────────┐          │  │ │ │
     ▼                                             └─F──▶│  Error  │───────┐  │  │ │ │
┌────────┐                                              └─────────┘       │  │  │ │ │
│ Error  │                                                                │  │  │ │ │
└────────┘                                                                │  │  │ │ │
     │───────────────────────────────────────────────────────────────────┴──┴──┴─┴─┘
     │
     ▼
┌────────┐
│ >=50   │──T────────┐
└────────┘           │
     │               ▼
     F          ┌──────────┐
     │          │ P * 0.50 │
     ▼          └──────────┘
┌────────┐           │
│ Return │◀──────────┘
└────────┘
```

Cyclomatic Complexity (E - N + 2 (P))

21 Edges, 16 Nodes and 1 Output

21 - 16 + 2 (1) = 7

White Box Test Cases

#	Data	Expected	Status
1	Female, 18	P = 5.0	
2	Female, 30	P = 5.0	
3	Female, 31	P = 3.50	
4	Male, 18	P = 6.0	
5	Male, 35	P = 6.0	
6	Male, 36	P = 5.0	
7	Male, 50	P = 5.0 * 0.50 = 3.50	
8	Female, 50	P = 3.50 * 0.50 = 1.25	

Equivalence Partitioning

#	Data	Expected	Status
1	Female, 15	Error	Invalid
2	Female, 25	P = 5.0	Valid
3	Female, 50	P = 3.50 * 0.50 = 1.75	Valid
4	Male, 15	Error	Invalid
5	Male, 25	P = 6.0	Valid
6	Male, 50	P = 5.0 * 0.50 = 2.50	Valid

Boundary Value Analysis

Female Boundary Values

#	Data	Expected	Status
1	Female, 17	Error	Invalid
2	Female, 18	P = 5.0	Valid
3	Female, 19	P = 5.0	Valid
4	Female, 29	P = 5.0	Valid
5	Female, 30	P = 5.0	Valid
6	Female, 31	P = 3.50	Valid
7	Female, 49	P = 3.50	Valid
8	Female, 50	P = 3.50 * 0.50	Valid
9	Female, 51	P = 3.50 * 0.50	Valid

Male Boundary Values

#	Data	Expected	Status
1	Male, 17	Error	Invalid
2	Male, 18	P = 6.0	Valid
3	Male, 19	P = 6.0	Valid
4	Male, 29	P = 6.0	Valid
5	Male, 30	P = 6.0	Valid
6	Male, 31	P = 5.0	Valid
7	Male, 49	P = 5.0	Valid
8	Male, 50	P = 5.0 * 0.50	Valid
9	Male, 51	P = 5.0 * 0.50	Valid

FitNesse Testing

QualityTesting

variable defined: COMMAND_PATTERN=%m -r fitnesse.fitserver.FitServer,fit\fit.dll %p
variable defined: TEST_RUNNER=fit\Runner.exe
classpath: C:\Users\Colin\Desktop\SoftwareQualityTesting\QTesting\QTesting\bin\QTesting.dll

QTesting.Premium		
age	gender	premium
15	female	0.0
25	female	5.0
50	fmeale	1.75
15	male	0.0
25	male	6.0
50	male	2.5

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