Code Coverage Report for Hilly_Condition

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Analysis Information

Coverage Data Information

Collected in version	(R2021a)

Model Information

Model version	1.80
Author	hp
Last saved	Fri Aug 23 22:15:53 2024

File Information

Last modified time	23-Aug-2024 22:07:41
File size	4.5 KB
MD5 checksum	000E74B001443000414700400 1A88300

Harness information

Harness model(s)	Hilly_Condition_Harness1
Harness model owner	Hilly_Condition

Coverage Options

Analyzed model	Hilly_Condition
Decision	on
Condition	off
MCDC	off
Relational Boundary	off
Filter name(s):	

Tests

Test	Started execution	Ended execution
Run 6	23-Aug-2024 22:53:27	23-Aug-2024 22:53:28

Summary

File Contents/Complexity		Test 1		
		Decision	Statement	Function
1 . Hilly_Condition.c	6	100%	100%	100%
2 . . . Hilly_Condition_step	4	100%	100%	100%
3 . . . Hilly_Condition_initialize	1	--	100%	100%
4 . . . Hilly_Condition_terminate	1	--	100%	100%

Details

1. File Hilly_Condition.c

Function: Hilly_Condition_step (line 30)
Hilly_Condition_initialize (line 124)
Hilly_Condition_terminate (line 130)

Metric	Coverage
Cyclomatic Complexity	6
Decision	100% (10/10) decision outcomes
Statement	100% (17/17) covered statements
Function	100% (3/3) covered functions

2. Function Hilly_Condition_step (line 30)

File: Hilly_Condition.c (code)
Model Objects: Hilly_Condition, HillyCond, HillyCond, AND, Data Type Conversion1, Data Type Conversion2, Data Type Conversion3, Data Type Conversion4, Switch
Covered expressions: ((Hilly_Condition_U.S_LongiDistOppVeh > 20) || (Hilly_Condition_U.S_LongiDistOppVeh == 0)) &&
((Hilly_Condition_U.S_LatDistPrlVeh > 7) || (Hilly_Condition_U.S_LatDistPrlVeh == 0)) (line 59)
Hilly_Condition_U.S_SlfVehSteerAng >= 10 (line 71)
Hilly_Condition_U.S_SlfVehSteerAng <= -15 (line 76)
(rtb_HillyCond_LoHi_Oppveh != 0) && (rtb_HillyCond_LoHi_Prlveh != 0) (line 101)
(rtb_HillyCond_LoHi_Oppveh != 0) && (rtb_HillyCond_LoHi_Prlveh != 0) && (rtb_HillyCond_LoHi_Oppveh_0 != 0) (line 116)

Metric	Coverage
Cyclomatic Complexity	4
Decision	100% (10/10) decision outcomes
Statement	100% (15/15) covered statements (1 Function entry + 14 executable statements)

Full Coverage

Covered expressions

((Hilly_Condition_U.S_LongiDistOppVeh > 20) || (Hilly_Condition_U.S_LongiDistOppVeh == 0)) && ((Hilly_Condition_U.S_LatDistPrlVeh > 7) || (Hilly_Co
Hilly_Condition_U.S_SlfVehSteerAng >= 10 (line 71)
Hilly_Condition_U.S_SlfVehSteerAng <= -15 (line 76)
(rtb_HillyCond_LoHi_Oppveh != 0) && (rtb_HillyCond_LoHi_Prlveh != 0) (line 101)
(rtb_HillyCond_LoHi_Oppveh != 0) && (rtb_HillyCond_LoHi_Prlveh != 0) && (rtb_HillyCond_LoHi_Oppveh_0 != 0) (line 116)

3. Function Hilly_Condition_initialize (line 124)

File: Hilly_Condition.c (code)
Model Object: Hilly_Condition

Metric	Coverage
Cyclomatic Complexity	1
Statement	100% (1/1) covered statements (1 Function entry)

4. Function Hilly_Condition_terminate (line 130)

File: Hilly_Condition.c (code)
Model Object: Hilly_Condition

Metric	Coverage
Cyclomatic Complexity	1
Statement	100% (1/1) covered statements (1 Function entry)

Code

```
1  /*
2   * File: Hilly_Condition.c
3   *
4   * Code generated for Simulink model 'Hilly_Condition'.
5   *
6   * Model version                  : 1.79
7   * Simulink Coder version         : 9.5 (R2021a) 14-Nov-2020
8   * C/C++ source code generated on : Fri Aug 23 22:07:29 2024
9   *
10  * Target selection: ert.tlc
11  * Embedded hardware selection: Intel->x86-64 (Windows64)
12  * Code generation objectives: Unspecified
13  * Validation result: Not run
14  */
15
```

```c
#include "Hilly_Condition.h"
#include "Hilly_Condition_private.h"

/* External inputs (root inport signals with default storage) */
ExtU_Hilly_Condition_T Hilly_Condition_U;

/* External outputs (root outports fed by signals with default storage) */
ExtY_Hilly_Condition_T Hilly_Condition_Y;

/* Real-time model */
static RT_MODEL_Hilly_Condition_T Hilly_Condition_M_;
RT_MODEL_Hilly_Condition_T *const Hilly_Condition_M = &Hilly_Condition_M_;

/* Model step function */
void Hilly_Condition_step(void)
{
  int8_T rtb_HillyCond_LoHi_Oppveh;
  int8_T rtb_HillyCond_LoHi_Oppveh_0;
  int8_T rtb_HillyCond_LoHi_Prlveh;

  /* Outputs for Atomic SubSystem: '<Root>/HillyCond' */
  /* Outputs for Atomic SubSystem: '<S1>/HillyCond' */
  /* Switch: '<S4>/Switch' incorporates:
   *  Constant: '<S4>/Constant'
   *  Inport: '<Root>/S_SlfLuxInt'
   *  RelationalOperator: '<S4>/Relational Operator'
   */
  rtb_HillyCond_LoHi_Oppveh = (int8_T)(Hilly_Condition_U.S_SlfLuxInt < 20);

  /* Switch: '<S5>/Switch1' incorporates:
   *  Constant: '<S5>/Constant'
   *  Constant: '<S5>/Constant1'
   *  Constant: '<S5>/Constant4'
   *  Inport: '<Root>/S_LatDistPrlVeh'
   *  Inport: '<Root>/S_LongiDistOppVeh'
   *  Logic: '<S5>/AND1'
   *  Logic: '<S5>/AND2'
   *  Logic: '<S5>/AND3'
   *  RelationalOperator: '<S5>/Relational Operator'
   *  RelationalOperator: '<S5>/Relational Operator1'
   *  RelationalOperator: '<S5>/Relational Operator2'
   *  RelationalOperator: '<S5>/Relational Operator3'
   */
  rtb_HillyCond_LoHi_Prlveh = (int8_T)(((Hilly_Condition_U.S_LongiDistOppVeh >
    20) || (Hilly_Condition_U.S_LongiDistOppVeh == 0)) &&
    ((Hilly_Condition_U.S_LatDistPrlVeh > 7) ||
     (Hilly_Condition_U.S_LatDistPrlVeh == 0)));

  /* Switch: '<S6>/Switch' incorporates:
   *  Constant: '<S6>/Constant1'
   *  Inport: '<Root>/S_SlfVehSteerAng'
   *  RelationalOperator: '<S6>/Relational Operator'
   *  RelationalOperator: '<S6>/Relational Operator1'
   *  Switch: '<S6>/Switch1'
   */
  if (Hilly_Condition_U.S_SlfVehSteerAng >= 10) {
    /* Outport: '<Root>/HillyCond_RiLfInd' incorporates:
     *  Constant: '<S6>/Constant3'
     */
    Hilly_Condition_Y.HillyCond_RiLfInd = 1;
  } else if (Hilly_Condition_U.S_SlfVehSteerAng <= -15) {
    /* Switch: '<S6>/Switch1' incorporates:
     *  Constant: '<S6>/Constant5'
     *  Outport: '<Root>/HillyCond_RiLfInd'
     */
    Hilly_Condition_Y.HillyCond_RiLfInd = -1;
  } else {
    /* Outport: '<Root>/HillyCond_RiLfInd' incorporates:
     *  Constant: '<S6>/Constant4'
     *  Switch: '<S6>/Switch1'
     */
    Hilly_Condition_Y.HillyCond_RiLfInd = 0;
  }

  /* End of Switch: '<S6>/Switch' */

  /* Switch: '<S3>/Switch' incorporates:
   *  Constant: '<S3>/Constant2'
   *  Constant: '<S3>/Constant3'
   *  DataTypeConversion: '<S3>/Data Type Conversion'
   *  DataTypeConversion: '<S3>/Data Type Conversion1'
   *  Inport: '<Root>/S_SlfVehSpd'
   *  Logic: '<S3>/OR1'
   *  RelationalOperator: '<S3>/Relational Operator'
   */
  if ((rtb_HillyCond_LoHi_Oppveh != 0) && (rtb_HillyCond_LoHi_Prlveh != 0)) {
```

```
102     rtb_HillyCond_LoHi_Oppveh_0 = (int8_T)(Hilly_Condition_U.S_SlfVehSpd >= 60);
103   } else {
104     rtb_HillyCond_LoHi_Oppveh_0 = 0;
105   }
106
107   /* End of Switch: '<S3>/Switch' */
108
109   /* Outport: '<Root>/HillyCond_LoHiBeam' incorporates:
110    *  DataTypeConversion: '<S2>/Data Type Conversion1'
111    *  DataTypeConversion: '<S2>/Data Type Conversion2'
112    *  DataTypeConversion: '<S2>/Data Type Conversion3'
113    *  DataTypeConversion: '<S2>/Data Type Conversion4'
114    *  Logic: '<S2>/AND'
115    */
116   Hilly_Condition_Y.HillyCond_LoHiBeam = (uint8_T)((rtb_HillyCond_LoHi_Oppveh !=
117     0) && (rtb_HillyCond_LoHi_Prlveh != 0) && (rtb_HillyCond_LoHi_Oppveh_0 != 0));
118
119   /* End of Outputs for SubSystem: '<S1>/HillyCond' */
120   /* End of Outputs for SubSystem: '<Root>/HillyCond' */
121 }
122
123 /* Model initialize function */
124 void Hilly_Condition_initialize(void)
125 {
126   /* (no initialization code required) */
127 }
128
129 /* Model terminate function */
130 void Hilly_Condition_terminate(void)
131 {
132   /* (no terminate code required) */
133 }
134
135 /*
136  * File trailer for generated code.
137  *
138  * [EOF]
139  */
140
```

Summary By Model Object

Model Object	Test 1		
	Decision	Statement	Function
1. Hilly_Condition	100%	100%	100%
2. . . . HillyCond	100%	100%	--
3. . . . . HillyCond	100%	100%	--
4. . . . . HillyCond_LoHi_SlfVehSpd	100%	100%	--
5. . . . . HillyCond_OppVeh	--	100%	--
6. . . . . HillyCond_PrlVeh	100%	100%	--
7. . . . . SlfVehSteerAng	100%	100%	--

Details By Model Object

1. Model "Hilly_Condition"

Child Systems: HillyCond

Metric	Coverage (this object)	Coverage (inc. descendants)
Decision	NA	100% (10/10) decision outcomes
Statement	100% (13/13) covered statements	100% (17/17) covered statements
Function	100% (3/3) covered functions	100% (3/3) covered functions

Covered code:
Function `Hilly_Condition_step`, line 31..62
Function `Hilly_Condition_step`, line 75
Function `Hilly_Condition_step`, line 81..87
Function `Hilly_Condition_step`, line 102
Function `Hilly_Condition_step`, line 116
Function `Hilly_Condition_initialize`, line 125
Function `Hilly_Condition_terminate`, line 131

2. SubSystem block "HillyCond"

Parent: /Hilly_Condition
Child Systems: HillyCond

Metric	Coverage (this object)	Coverage (inc. descendants)
Decision	100% (10/10) decision outcomes	100% (10/10) decision outcomes
Statement	100% (11/11) covered statements	100% (11/11) covered statements

Covered expressions:
`((Hilly_Condition_U.S_LongiDistOppVeh > 20) || (Hilly_Condition_U.S_LongiDistOppVeh == 0)) &&`
`((Hilly_Condition_U.S_LatDistPrlVeh > 7) || (Hilly_Condition_U.S_LatDistPrlVeh == 0))` (line 59)
`Hilly_Condition_U.S_SlfVehSteerAng >= 10` (line 71)
`Hilly_Condition_U.S_SlfVehSteerAng <= -15` (line 76)
`(rtb_HillyCond_LoHi_Oppveh != 0) && (rtb_HillyCond_LoHi_Prlveh != 0)` (line 101)
`(rtb_HillyCond_LoHi_Oppveh != 0) && (rtb_HillyCond_LoHi_Prlveh != 0) && (rtb_HillyCond_LoHi_Oppveh_0 != 0)` (line 116)

Covered code: Function `Hilly_Condition_step`, line 43..117

3. SubSystem block "HillyCond"

Parent: /Hilly_Condition/HillyCond
Child Systems: HillyCond_LoHi_SlfVehSpd, HillyCond_OppVeh, HillyCond_PrlVeh, SlfVehSteerAng

Metric	Coverage (this object)	Coverage (inc. descendants)
Decision	100% (10/10) decision outcomes	100% (10/10) decision outcomes
Statement	100% (11/11) covered statements	100% (11/11) covered statements

Covered expressions:
`((Hilly_Condition_U.S_LongiDistOppVeh > 20) || (Hilly_Condition_U.S_LongiDistOppVeh == 0)) &&`
`((Hilly_Condition_U.S_LatDistPrlVeh > 7) || (Hilly_Condition_U.S_LatDistPrlVeh == 0))` (line 59)
`Hilly_Condition_U.S_SlfVehSteerAng >= 10` (line 71)
`Hilly_Condition_U.S_SlfVehSteerAng <= -15` (line 76)
`(rtb_HillyCond_LoHi_Oppveh != 0) && (rtb_HillyCond_LoHi_Prlveh != 0)` (line 101)
`(rtb_HillyCond_LoHi_Oppveh != 0) && (rtb_HillyCond_LoHi_Prlveh != 0) && (rtb_HillyCond_LoHi_Oppveh_0 != 0)` (line 116)

Covered code: Function `Hilly_Condition_step`, line 43..117

Full Coverage

Model Object	Metric
Logic block "AND"	Decision, Statement
DataTypeConversion block "Data Type Conversion1"	Statement
DataTypeConversion block "Data Type Conversion2"	Statement
DataTypeConversion block "Data Type Conversion3"	Statement
DataTypeConversion block "Data Type Conversion4"	Statement

4.

Parent: /Hilly_Condition/HillyCond/HillyCond
Child Systems: HillyCond_OppVeh, HillyCond_PrlVeh, SlfVehSteerAng

Metric	Coverage (this object)	Coverage (inc. descendants)
Decision	NA	100% (2/2) decision outcomes
Statement	NA	100% (4/4) covered statements

Logic block "OR1"

Parent: /Hilly_Condition/HillyCond/HillyCond/HillyCond_LoHi_SlfVehSpd
Uncovered Links: 

Metric	Coverage

DataTypeConversion block "Data Type Conversion"

Parent: /Hilly_Condition/HillyCond/HillyCond/HillyCond_LoHi_SlfVehSpd
Uncovered Links: 

Metric	Coverage

DataTypeConversion block "Data Type Conversion1"

Parent: /Hilly_Condition/HillyCond/HillyCond/HillyCond_LoHi_SlfVehSpd
Uncovered Links: 

Metric	Coverage

Full Coverage

Model Object	Metric
Switch block "Switch"	Decision, Statement
RelationalOperator block "Relational Operator"	Statement
Constant block "Constant2"	Statement
Constant block "Constant3"	Statement

5.

Parent: /Hilly_Condition/HillyCond/HillyCond
Child Systems: HillyCond_PrlVeh, SlfVehSteerAng

Metric	Coverage (this object)	Coverage (inc. descendants)
Statement	NA	100% (1/1) covered statements

Full Coverage

Model Object	Metric
Switch block "Switch"	Statement
RelationalOperator block "Relational Operator"	Statement
Constant block "Constant"	Statement

6.

Parent: /Hilly_Condition/HillyCond/HillyCond
Child Systems: SlfVehSteerAng

Metric	Coverage (this object)	Coverage (inc. descendants)
Decision	NA	100% (2/2) decision outcomes
Statement	NA	100% (1/1) covered statements

Full Coverage

Model Object	Metric
Logic block "AND1"	Decision, Statement
Logic block "AND2"	Statement
Logic block "AND3"	Statement
Switch block "Switch1"	Statement
RelationalOperator block "Relational Operator"	Statement
RelationalOperator block "Relational Operator1"	Statement
RelationalOperator block "Relational Operator2"	Statement
RelationalOperator block "Relational Operator3"	Statement
Constant block "Constant"	Statement
Constant block "Constant1"	Statement
Constant block "Constant4"	Statement

7.

Parent: /Hilly_Condition/HillyCond/HillyCond

Metric	Coverage (this object)	Coverage (inc. descendants)
Decision	NA	100% (4/4) decision outcomes
Statement	NA	100% (5/5) covered statements

Full Coverage

Model Object	Metric
Switch block "Switch"	Decision, Statement
Switch block "Switch1"	Decision, Statement
RelationalOperator block "Relational Operator"	Decision
RelationalOperator block "Relational Operator1"	Decision
Constant block "Constant3"	Statement
Constant block "Constant4"	Statement

Model Object	Metric
Constant block "Constant5"	Statement