# **Team TövisASAP Robot Code Listing**

A close up of a map

Description generated with very high confidence



**WF18-19FLL.ev3 CopyrightYear=2018 | ProjectTitle=Tövis&ASAP | ProjectDescription=Tövis&ASAP**

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**Kajzinger Anna Virág,**

**Kiss Bálint,**

**Kiss Bogi**

**Coach:**

**Faragó Attila**

**├─** [**LSQ**](http://ev3treevis.azurewebsites.net/#LSQ) **#=15**

**│ └─** [**ToColor**](http://ev3treevis.azurewebsites.net/#ToColor) **#=7**

**├─** [**m\_North**](http://ev3treevis.azurewebsites.net/#m_North) **#=15**

**│ ├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **#=106 | Vars=IsBraking[B], Speed[N], SummaRot[N]**

**│ └─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **#=31 | Vars=LoopGrPerLr[N], Speed[N]**

**├─** [**MasterMenu**](http://ev3treevis.azurewebsites.net/#MasterMenu) **#=65 | Vars=\_MasterMenu\_Counter[N], \_MasterMenu\_FirstProgramStarted[B], 1stMeas[N], isRunStarted[B], Scene[N]**

**│ ├─** [**MM\_Secondary**](http://ev3treevis.azurewebsites.net/#MM_Secondary) **#=28 | Vars=\_MasterMenu\_Counter[N], \_MasterMenu\_FirstProgramStarted[B], \_MasterMenu\_TimeOfLastRun[N]**

**│ │ ├─** [**MM\_Sec\_1Step**](http://ev3treevis.azurewebsites.net/#MM_Sec_1Step) **#=82 | Vars=\_MasterMenu\_Counter[N], \_MasterMenu\_FirstProgramStarted[B], \_MasterMenu\_TimeOfLastRun[N]**

**│ │ │ ├─** [**m\_HUB**](http://ev3treevis.azurewebsites.net/#m_HUB) **#=34**

**│ │ │ │ ├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **#=31 | Vars=LoopGrPerLr[N], Speed[N]**

**│ │ │ │ ├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **#=106 | Vars=IsBraking[B], Speed[N], SummaRot[N]**

**│ │ │ │ └─** [**STALL**](http://ev3treevis.azurewebsites.net/#STALL) **#=23**

**│ │ │ ├─** [**m\_Meteor**](http://ev3treevis.azurewebsites.net/#m_Meteor) **#=22**

**│ │ │ │ ├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **#=106 | Vars=IsBraking[B], Speed[N], SummaRot[N]**

**│ │ │ │ ├─** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **#=68 | Vars=Speed[N], Steering[N]**

**│ │ │ │ ├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **#=31 | Vars=LoopGrPerLr[N], Speed[N]**

**│ │ │ │ └─** [**STALL**](http://ev3treevis.azurewebsites.net/#STALL) **#=23**

**│ │ │ ├─** [**m\_Lander**](http://ev3treevis.azurewebsites.net/#m_Lander) **#=36**

**│ │ │ │ ├─** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **#=68 | Vars=Speed[N], Steering[N]**

**│ │ │ │ ├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **#=106 | Vars=IsBraking[B], Speed[N], SummaRot[N]**

**│ │ │ │ ├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **#=31 | Vars=LoopGrPerLr[N], Speed[N]**

**│ │ │ │ └─** [**STALL**](http://ev3treevis.azurewebsites.net/#STALL) **#=23**

**│ │ │ ├─** [**mi\_North**](http://ev3treevis.azurewebsites.net/#mi_North) **#=3**

**│ │ │ │ └─** [**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter) **#=95 | Vars=Comm\_Inter[S], QueSelection[N], Var1\_Inter[N], Var2\_Inter[N], Var3\_Inter[N], Var4\_Inter[N]**

**│ │ │ │ ├─** [**CURV**](http://ev3treevis.azurewebsites.net/#CURV) **#=59 | Vars=GyroAngle[N], LoopGrPerLr[N], Speed[N], Steering[N]**

**│ │ │ │ ├─** [**Num\_to\_logic**](http://ev3treevis.azurewebsites.net/#Num_to_logic) **#=4**

**│ │ │ │ ├─** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **#=68 | Vars=Speed[N], Steering[N]**

**│ │ │ │ ├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **#=106 | Vars=IsBraking[B], Speed[N], SummaRot[N]**

**│ │ │ │ ├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **#=31 | Vars=LoopGrPerLr[N], Speed[N]**

**│ │ │ │ ├─** [**ATU**](http://ev3treevis.azurewebsites.net/#ATU) **#=4**

**│ │ │ │ │ └─** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **#=68 | Vars=Speed[N], Steering[N]**

**│ │ │ │ ├─** [**STALL**](http://ev3treevis.azurewebsites.net/#STALL) **#=23**

**│ │ │ │ └─** [**InterPreter\_Read**](http://ev3treevis.azurewebsites.net/#InterPreter_Read) **#=9**

**│ │ │ └─** [**m\_Thor**](http://ev3treevis.azurewebsites.net/#m_Thor) **#=24**

**│ │ │ ├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **#=106 | Vars=IsBraking[B], Speed[N], SummaRot[N]**

**│ │ │ ├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **#=31 | Vars=LoopGrPerLr[N], Speed[N]**

**│ │ │ ├─** [**STALL**](http://ev3treevis.azurewebsites.net/#STALL) **#=23**

**│ │ │ └─** [**TU\_fast**](http://ev3treevis.azurewebsites.net/#TU_fast) **#=68 | Vars=Speed[N], Steering[N]**

**│ │ └─** [**MM\_Display\_Runs**](http://ev3treevis.azurewebsites.net/#MM_Display_Runs) **#=10**

**│ └─** [**GyroReset**](http://ev3treevis.azurewebsites.net/#GyroReset) **#=11**

**└─ (Variables)**

**├─ GyroAngle Type=Single | usedBy=**[**CURV**](http://ev3treevis.azurewebsites.net/#CURV)

**├─ Speed Type=Single | usedBy=**[**CURV**](http://ev3treevis.azurewebsites.net/#CURV) **|** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **|** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **|** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **|** [**TU\_fast**](http://ev3treevis.azurewebsites.net/#TU_fast)

**├─ Steering Type=Single | usedBy=**[**CURV**](http://ev3treevis.azurewebsites.net/#CURV) **|** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **|** [**TU\_fast**](http://ev3treevis.azurewebsites.net/#TU_fast)

**├─ LoopGrPerLr Type=Single | usedBy=**[**CURV**](http://ev3treevis.azurewebsites.net/#CURV) **|** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM)

**├─ SummaRot Type=Single | usedBy=**[**DRV**](http://ev3treevis.azurewebsites.net/#DRV)

**├─ IsBraking Type=Boolean | usedBy=**[**DRV**](http://ev3treevis.azurewebsites.net/#DRV)

**├─ \_MasterMenu\_Counter Type=Single | usedBy=**[**MasterMenu**](http://ev3treevis.azurewebsites.net/#MasterMenu) **|** [**MM\_Sec\_1Step**](http://ev3treevis.azurewebsites.net/#MM_Sec_1Step) **|** [**MM\_Secondary**](http://ev3treevis.azurewebsites.net/#MM_Secondary)

**├─ \_MasterMenu\_FirstProgramStarted Type=Boolean | usedBy=**[**MasterMenu**](http://ev3treevis.azurewebsites.net/#MasterMenu) **|** [**MM\_Sec\_1Step**](http://ev3treevis.azurewebsites.net/#MM_Sec_1Step) **|** [**MM\_Secondary**](http://ev3treevis.azurewebsites.net/#MM_Secondary)

**├─ \_MasterMenu\_TimeOfLastRun Type=Single | usedBy=**[**MM\_Sec\_1Step**](http://ev3treevis.azurewebsites.net/#MM_Sec_1Step) **|** [**MM\_Secondary**](http://ev3treevis.azurewebsites.net/#MM_Secondary)

**├─ Scene Type=Single | usedBy=**[**MasterMenu**](http://ev3treevis.azurewebsites.net/#MasterMenu)

**├─ isRunStarted Type=Boolean | usedBy=**[**MasterMenu**](http://ev3treevis.azurewebsites.net/#MasterMenu)

**├─ 1stMeas Type=Single | usedBy=**[**MasterMenu**](http://ev3treevis.azurewebsites.net/#MasterMenu)

**├─ QueSelection Type=Single | usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter)

**├─ Comm\_Inter Type=String | usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter)

**├─ Var1\_Inter Type=Single | usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter)

**├─ Var2\_Inter Type=Single | usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter)

**├─ Var3\_Inter Type=Single | usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter)

**└─ Var4\_Inter Type=Single | usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter)

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**ATU Angle=(dNw11[Angle]->) | Mstop=(dBw13[Mstop]->) | usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter)

**├─ StartBlock**

**├─ Gyro.MeasureAngle Port=2 | Angle=(dNw15->)**

**├─ Math.Advanced A=(->dNw11[Angle]) | B=(->dNw15) | C=0 | D=0 | Equation=(a-b%360)%360 | Result=(dNw17->)**

**└─** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **Angle=(->dNw17) | Mstop=(->dBw13[Mstop])**

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**CURV Steering=(dNw29[Steering]->) | Angle=(dNw33[Angle]->) | Speed=(dNw37[Speed]->) | Mstop=(dBw40[Mstop]->) | usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter)

**├─ StartBlock**

**├─ CommentBlock Comment=Debug mode -->**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=True**

**│ ├─ CommentBox Comment=Debug mode**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ CONNECTOR from=(dNw29[Steering]->) | to=(->dw66)**

**│ │ ├─ CONNECTOR from=(dNw33[Angle]->) | to=(->dw49)**

**│ │ ├─ CONNECTOR from=(dNw37[Speed]->) | to=(->dw110)**

**│ │ └─ CONNECTOR from=(dBw40[Mstop]->) | to=(->dw42)**

**│ └─ CASE# Pattern=False**

**│ ├─ Constant.Numeric valueOut=(dw66->) | valueIn=30**

**│ ├─ Constant.Numeric valueOut=(dw49->) | valueIn=90**

**│ ├─ Constant.Numeric valueOut=(dw110->) | valueIn=-10**

**│ └─ Constant.Boolean valueOut=(dw42->) | valueIn=True**

**├─ CommentBlock Comment=Változók inicializálása -->**

**├─ Math.AbsoluteValue A=(->dw66) | Result=(dNw67->)**

**├─ Variable.Write.WriteNumeric name=Steering | valueIn=(->dNw67)**

**├─ CommentBox Comment=Variables**

**├─ CommentBlock Comment=Kötött-e az előző blokk check -->**

**├─ Variable.Read.ReadNumeric valueOut=(dNw108->) | name=Speed**

**├─ Compare.GreaterThan x=(->dNw108) | y=0 | Result=(dBw109->)**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw109)**

**│ ├─ CASE# Pattern=True\***

**│ │ └─ (None)**

**│ └─ CASE# Pattern=False**

**│ └─ Variable.Write.WriteNumeric name=Speed | valueIn=(->dw110)**

**├─ Variable.Write.WriteNumeric name=GyroAngle | valueIn=(->dw49)**

**├─ CommentBlock Comment=Gyro célérték kiszámolás -->**

**├─ Gyro.MeasureAngle Port=2 | Angle=(dNw72->)**

**├─ CommentBox Comment=Gyro target value counting**

**├─ Variable.Read.ReadNumeric valueOut=(dNw86->) | name=GyroAngle**

**├─ Math.Add A=(->dNw72) | B=(->dNw86) | Result=(dNw118->)**

**├─ CommentBlock Comment=Steering +/- eldöntése -->**

**├─ CommentBlock Comment=Gyro Value 0-hoz lévő viszonya check -->**

**├─ Variable.Read.ReadNumeric valueOut=(dNw87->) | name=GyroAngle**

**├─ CommentBox Comment=Steering +/- deciding depending on the Gyro value**

**├─ Compare.GreaterThan x=(->dNw87) | y=0 | Result=(dBw85->)**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw85)**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ CommentBox Comment=Mstop**

**│ │ └─ Variable.Write.WriteNumeric name=LoopGrPerLr | valueIn=3**

**│ └─ CASE# Pattern=False**

**│ └─ Variable.Write.WriteNumeric name=LoopGrPerLr | valueIn=5**

**├─ Variable.Read.ReadNumeric valueOut=(dNw82->) | name=Speed**

**├─ Compare.LessThan x=(->dNw82) | y=0 | Result=(dBw84->)**

**├─ BooleanOperations.And A=(->dBw84) | B=(->dBw85) | Result=(dBw98->)**

**├─ Variable.Read.ReadNumeric valueOut=(dNw94->) | name=GyroAngle**

**├─ Compare.LessThan x=(->dNw94) | y=0 | Result=(dBw91->)**

**├─ Variable.Read.ReadNumeric valueOut=(dNw89->) | name=Speed**

**├─ Compare.GreaterThan x=(->dNw89) | y=0 | Result=(dBw92->)**

**├─ BooleanOperations.And A=(->dBw92) | B=(->dBw91) | Result=(dBw99->)**

**├─ BooleanOperations.Or A=(->dBw98) | B=(->dBw99) | Result=(dBw100->)**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw100)**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw10->) | name=Steering**

**│ │ ├─ Math.Multiply A=(->dNw10) | B=-1 | Result=(dNw11->)**

**│ │ └─ Variable.Write.WriteNumeric name=Steering | valueIn=(->dNw11)**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**├─ Variable.Read.ReadNumeric valueOut=(dNw120->) | name=LoopGrPerLr**

**├─ ConfigurableWhileLoop InterruptName=DRV01 | Stop=Gyro.CompareAngle | Port=2 | Comparison=(->dNw120) | Threshold=(->dNw118)**

**│ ├─ CommentBlock Comment=MotorBlokk -->**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw8->) | name=Steering**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw20->) | name=Speed**

**│ ├─ Math.Multiply A=(->dNw20) | B=-1 | Result=(dNw21->)**

**│ ├─ CommentBox Comment=Motorblock**

**│ └─ Move.Unlimited Ports=B+C | Steering=(->dNw8) | Speed=(->dNw21)**

**├─ CommentBlock Comment=Mstop paraméter -->**

**└─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dw42)**

**├─ CASE# Pattern=True\***

**│ ├─ Move.Stop Ports=B+C | BrakeAtEnd=True**

**│ └─ Variable.Write.WriteNumeric name=Speed | valueIn=0**

**└─ CASE# Pattern=False**

**└─ (None)**

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**DRV CM=(dNw44[CM]->) | Mstop=(dBw47[Mstop]->) | usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter) **|** [**m\_HUB**](http://ev3treevis.azurewebsites.net/#m_HUB) **|** [**m\_Lander**](http://ev3treevis.azurewebsites.net/#m_Lander) **|** [**m\_Meteor**](http://ev3treevis.azurewebsites.net/#m_Meteor) **|** [**m\_North**](http://ev3treevis.azurewebsites.net/#m_North) **|** [**m\_Thor**](http://ev3treevis.azurewebsites.net/#m_Thor)

**├─ StartBlock**

**├─ CommentBlock Comment=Debug Mode -->**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=True**

**│ ├─ CommentBox Comment=Debug/Live mode**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ CONNECTOR from=(dNw44[CM]->) | to=(->dw45)**

**│ │ └─ CONNECTOR from=(dBw47[Mstop]->) | to=(->dw72)**

**│ └─ CASE# Pattern=False**

**│ ├─ Constant.Numeric valueOut=(dw45->) | valueIn=100**

**│ └─ Constant.Boolean valueOut=(dw72->) | valueIn=True**

**├─ CommentBlock Comment=Változók inicializálása -->**

**├─ Gyro.MeasureAngle Port=2 | Angle=(dNw74->)**

**├─ CommentBlock Comment=SummaRot - Cél fordulat érték beállítása.**

**├─ CommentBox Comment=SummaRot - target rotation value counting and setting**

**├─ Math.Advanced A=(->dw45) | B=7 | C=0 | D=0 | Equation=a/(3.1415\*b)\*-1 | Result=(dNw53->)**

**├─ RotationSensor.MeasureRotation MotorPort=B | Rotations=(dNw56->)**

**├─ CommentBox Comment=Variables**

**├─ Math.Add A=(->dNw56) | B=(->dNw53) | Result=(dNw77->)**

**├─ Variable.Write.WriteNumeric name=SummaRot | valueIn=(->dNw77)**

**├─ CommentBlock Comment=Ha a speed > mint 15, akkor kötni akarunk -->**

**├─ Variable.Read.ReadNumeric valueOut=(dNw63->) | name=Speed**

**├─ Compare.LessOrEqual x=(->dNw63) | y=15 | Result=(dBw64->)**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw64)**

**│ ├─ CASE# Pattern=True\***

**│ │ └─ Variable.Write.WriteNumeric name=Speed | valueIn=15**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**├─ FORK# #=1**

**│ ├─ ConfigurableWhileLoop InterruptName=DRV01 | Stop=RotationSensor.CompareRotation | MotorPort=B | Comparison=<= | ThresholdRotations=(->dNw33)**

**│ │ ├─ CommentBlock Comment=Gyro Correction k: 1.1 -->**

**│ │ ├─ CommentBox Comment=Gyro correction k:1.1**

**│ │ ├─ Gyro.MeasureAngle Port=2 | Angle=(dNw27->)**

**│ │ ├─ Math.Advanced A=(->dNw74) | B=(->dNw27) | C=1.1 | D=0 | Equation=(a-b)\*c | Result=(dNw28->)**

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw24->) | name=Speed**

**│ │ ├─ Math.Multiply A=(->dNw24) | B=-1 | Result=(dNw25->)**

**│ │ ├─ CommentBlock Comment=Motorblokk -->**

**│ │ ├─ CommentBox Comment=Motor block**

**│ │ ├─ Move.Unlimited Ports=B+C | Steering=(->dNw28) | Speed=(->dNw25)**

**│ │ ├─ CommentBlock Comment=Leállítás az elért fordulatoknál -->**

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw49->) | name=SummaRot**

**│ │ ├─ CommentBox Comment=Stopping when the robot reached the target rotation value**

**│ │ └─ Math.Multiply A=(->dNw49) | B=1 | Result=(dNw33->)**

**│ ├─ CommentBlock Comment=Kilépés a másik loopból -->**

**│ ├─ CommentBox Comment=Out from the other loop**

**│ ├─ Interrupt InterruptName=DRV01**

**│ ├─ CommentBlock Comment=Mstop paraméter -->**

**│ └─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dw72)**

**│ ├─ CommentBox Comment=Mstop**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ Move.Stop Ports=B+C | BrakeAtEnd=True**

**│ │ └─ Variable.Write.WriteNumeric name=Speed | valueIn=0**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**├─ Variable.Write.WriteBoolean name=IsBraking | valueIn=False**

**├─ CommentBox Comment=Opcional debug loop**

**├─ CommentBox Comment=We stop the endless loop only on the other branch**

**├─ CommentBlock Comment=Végtelen loopot csak a másik ágon állítjuk le-->**

**└─ ConfigurableWhileLoop InterruptName=DRV01 | Stop=LoopCondition.Unlimited**

**├─ CommentBox Comment=IsBraking check**

**├─ CommentBlock Comment=IsBraking check -->**

**├─ Variable.Read.ReadBoolean valueOut=(dBw11->) | name=IsBraking**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw11)**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ CommentBox Comment=We brake when the Mstop is true**

**│ │ ├─ CommentBlock Comment=Ha a fékezés = TRUE, csak akkor lassítunk -->**

**│ │ └─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dw72)**

**│ │ ├─ CASE# Pattern=True\***

**│ │ │ ├─ CommentBox Comment=We decrease the speed by 1 continuously**

**│ │ │ ├─ CommentBlock Comment=A Speedet 1-gyel csökkentjük folyamatosan -->**

**│ │ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw17->) | name=Speed**

**│ │ │ ├─ Math.Subtract A=(->dNw17) | B=1 | Result=(dNw21->)**

**│ │ │ ├─ Variable.Write.WriteNumeric name=Speed | valueIn=(->dNw21)**

**│ │ │ ├─ CommentBox Comment=Min speed check**

**│ │ │ ├─ CommentBlock Comment=MinSpeed check**

**│ │ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw16->) | name=Speed**

**│ │ │ ├─ Compare.LessOrEqual x=(->dNw16) | y=10 | Result=(dBw22->)**

**│ │ │ └─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw22)**

**│ │ │ ├─ CASE# Pattern=True\***

**│ │ │ │ └─ Variable.Write.WriteNumeric name=Speed | valueIn=10**

**│ │ │ └─ CASE# Pattern=False**

**│ │ │ └─ (None)**

**│ │ └─ CASE# Pattern=False**

**│ │ └─ (None)**

**│ └─ CASE# Pattern=False**

**│ ├─ CommentBox Comment=We increase the speed by 1 continuously**

**│ ├─ CommentBlock Comment=Speedet 1-el növeljük folyamatosan -->**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw10->) | name=Speed**

**│ ├─ Math.Add A=(->dNw10) | B=1 | Result=(dNw11->)**

**│ ├─ Variable.Write.WriteNumeric name=Speed | valueIn=(->dNw11)**

**│ ├─ CommentBox Comment=Max speed check**

**│ ├─ CommentBlock Comment=MaxSpeed check és beállítás -->**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw16a->) | name=Speed**

**│ ├─ Compare.GreaterOrEqual x=(->dNw16a) | y=90 | Result=(dBw22a->)**

**│ ├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw22a)**

**│ │ ├─ CASE# Pattern=True\***

**│ │ │ └─ Variable.Write.WriteNumeric name=Speed | valueIn=90**

**│ │ └─ CASE# Pattern=False**

**│ │ └─ (None)**

**│ ├─ CommentBox Comment=From the current speed we count the brake distance**

**│ ├─ CommentBlock Comment=Sebességből brake távolság számítás -->**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw62->) | name=Speed**

**│ ├─ Math.Advanced A=0 | B=(->dNw62) | C=50 | D=0 | Equation=((b-20)/c)\*-1 | Result=(dNw51->)**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw48->) | name=SummaRot**

**│ ├─ RotationSensor.MeasureRotation MotorPort=B | Rotations=(dNw61->)**

**│ ├─ Math.Subtract A=(->dNw48) | B=(->dNw61) | Result=(dNw53a->)**

**│ ├─ CommentBox Comment=Remaining distance and brake distance comparison**

**│ ├─ CommentBlock Comment=Hátralévő táv és a Brake táv --> összehasonlítás**

**│ ├─ Compare.LessOrEqual x=(->dNw51) | y=(->dNw53a) | Result=(dBw50->)**

**│ ├─ CommentBlock Comment=IsBraking megfelelő kezelése -->**

**│ └─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw50)**

**│ ├─ CASE# Pattern=True\***

**│ │ └─ Variable.Write.WriteBoolean name=IsBraking | valueIn=True**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**└─ Wait.Wait HowLong=0.01**

**================================================================================**

**GyroReset GyroPort=(dNw13[GyroPort]->) | usedBy=**[**MasterMenu**](http://ev3treevis.azurewebsites.net/#MasterMenu)

**├─ StartBlock**

**├─ InfraredSensor.MeasureProximity Port=(->dNw13[GyroPort])**

**├─ Gyro.MeasureAngle Port=(->dNw13[GyroPort])**

**├─ CommentBox Comment=How it works?**

**First we interpret the gyro sensor as an ultrasonic sensor, than we interpret it as a gyro sensor. This method is similar to, when we plug out and than plug in the cabel, but it not harmful for the cabel and you don't have to disassemble your robot**

**└─ ConfigurableWhileLoop InterruptName=01 | Stop=LoopCondition.Boolean | DoStop=(->dBw16)**

**├─ Gyro.MeasureAngle Port=(->dNw13[GyroPort]) | Angle=(dNw12->)**

**├─ Compare.GreaterOrEqual x=(->dNw12) | y=0 | Result=(dBw13->)**

**├─ Compare.LessOrEqual x=(->dNw12) | y=0 | Result=(dBw14->)**

**└─ BooleanOperations.Or A=(->dBw13) | B=(->dBw14) | Result=(dBw16->)**

**================================================================================**

**Interpreter FileName=(dSw17[FileName]->) | usedBy=**[**mi\_North**](http://ev3treevis.azurewebsites.net/#mi_North)

**├─ StartBlock**

**│ ├─ CommentBox Comment=First we close the wired file then if we are not reading the variables now, we read a new couple of lines from the file and then we go to the execute branches. And here you have the question why this 3 branches are working paralelly. These 3 execute "block" works because when we read the variables we just set the "QueSelector" variable to 0 and the reding starts again and if the next block has 2 in the QueSelector section then the program will starts reading the variables again but in another Que branch and while the other block is being executed this block is starts to be executed and there it goes until the file ends. So with this method we are able to make endless number of paralell executing branches.**

**│ ├─ FileAccess.Close FileName=(->dSw17)**

**│ ├─ Variable.Write.WriteNumeric name=QueSelection | valueIn=0**

**│ └─ ConfigurableWhileLoop InterruptName=Interpreter | Stop=LoopCondition.Unlimited**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw17->) | name=QueSelection**

**│ ├─ Compare.Equal x=(->dNw17) | y=0 | Result=(dBw14->)**

**│ └─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw14)**

**│ ├─ CommentBox Comment=**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─** [**InterPreter\_Read**](http://ev3treevis.azurewebsites.net/#InterPreter_Read) **File=(->dSw17) | Command=(dSw20->) | Param1=(dNw21->) | Param2=(dNw22->) | Param3=(dNw23->) | Param4=(dNw24->) | QueSelection=(dNw19->)**

**│ │ ├─ Variable.Write.WriteText name=Comm\_Inter | valueIn=(->dSw20)**

**│ │ ├─ Variable.Write.WriteNumeric name=Var1\_Inter | valueIn=(->dNw21)**

**│ │ ├─ Variable.Write.WriteNumeric name=Var2\_Inter | valueIn=(->dNw22)**

**│ │ ├─ Variable.Write.WriteNumeric name=Var3\_Inter | valueIn=(->dNw23)**

**│ │ ├─ Variable.Write.WriteNumeric name=Var4\_Inter | valueIn=(->dNw24)**

**│ │ └─ Variable.Write.WriteNumeric name=QueSelection | valueIn=(->dNw19)**

**│ └─ CASE# Pattern=False**

**│ └─ Wait.Wait HowLong=0.05**

**├─ StartBlock**

**│ └─ ConfigurableWhileLoop InterruptName=Interpreter | Stop=LoopCondition.Unlimited**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw16->) | name=QueSelection**

**│ ├─ Compare.Equal x=(->dNw16) | y=3 | Result=(dBw17->)**

**│ └─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw17)**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ Variable.Read.ReadText valueOut=(dSw24->) | name=Comm\_Inter**

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw25->) | name=Var1\_Inter**

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw27->) | name=Var2\_Inter**

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw30->) | name=Var3\_Inter**

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw32->) | name=Var4\_Inter**

**│ │ ├─ Variable.Write.WriteNumeric name=QueSelection | valueIn=0**

**│ │ └─ Switch.CaseSelector.String Cases=["MEDSEC","MEDROT","0","MEDON","WAITSEC"] | String=(->dSw24)**

**│ │ ├─ CASE# Pattern="MEDSEC"**

**│ │ │ └─ MediumMotor.Time MotorPort=(->dNw25) | Speed=(->dNw27) | Seconds=(->dNw30) | BrakeAtEnd=True**

**│ │ ├─ CASE# Pattern="MEDROT"**

**│ │ │ └─ MediumMotor.Rotations MotorPort=(->dNw25) | Speed=(->dNw27) | Rotations=(->dNw30) | BrakeAtEnd=True**

**│ │ ├─ CASE# Pattern="0"\***

**│ │ │ └─ Wait.Wait HowLong=0.1**

**│ │ ├─ CASE# Pattern="MEDON"**

**│ │ │ └─ MediumMotor.Unlimited MotorPort=(->dNw25) | Speed=(->dNw27)**

**│ │ └─ CASE# Pattern="WAITSEC"**

**│ │ └─ Wait.Wait HowLong=(->dNw25)**

**│ └─ CASE# Pattern=False**

**│ └─ Wait.Wait HowLong=0.05**

**├─ StartBlock**

**│ └─ ConfigurableWhileLoop InterruptName=Interpreter | Stop=LoopCondition.Unlimited**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw16a->) | name=QueSelection**

**│ ├─ Compare.Equal x=(->dNw16a) | y=2 | Result=(dBw17a->)**

**│ └─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw17a)**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ Variable.Read.ReadText valueOut=(dSw24a->) | name=Comm\_Inter**

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw25a->) | name=Var1\_Inter**

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw27a->) | name=Var2\_Inter**

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw30a->) | name=Var3\_Inter**

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw32a->) | name=Var4\_Inter**

**│ │ ├─ Variable.Write.WriteNumeric name=QueSelection | valueIn=0**

**│ │ └─ Switch.CaseSelector.String Cases=["STALL","MEDSEC","MEDROT","0","MEDON","WAITSEC"] | String=(->dSw24a)**

**│ │ ├─ CASE# Pattern="STALL"**

**│ │ │ └─** [**STALL**](http://ev3treevis.azurewebsites.net/#STALL)

**│ │ ├─ CASE# Pattern="MEDSEC"**

**│ │ │ └─ MediumMotor.Time MotorPort=(->dNw25a) | Speed=(->dNw27a) | Seconds=(->dNw30a) | BrakeAtEnd=True**

**│ │ ├─ CASE# Pattern="MEDROT"**

**│ │ │ └─ MediumMotor.Rotations MotorPort=(->dNw25a) | Speed=(->dNw27a) | Rotations=(->dNw30a) | BrakeAtEnd=True**

**│ │ ├─ CASE# Pattern="0"\***

**│ │ │ └─ Wait.Wait HowLong=0.1**

**│ │ ├─ CASE# Pattern="MEDON"**

**│ │ │ └─ MediumMotor.Unlimited MotorPort=(->dNw25a) | Speed=(->dNw27a)**

**│ │ └─ CASE# Pattern="WAITSEC"**

**│ │ └─ Wait.Wait HowLong=(->dNw25a)**

**│ └─ CASE# Pattern=False**

**│ └─ Wait.Wait HowLong=0.05**

**└─ StartBlock**

**└─ ConfigurableWhileLoop InterruptName=Interpreter | Stop=LoopCondition.Unlimited**

**├─ Variable.Read.ReadNumeric valueOut=(dNw22a->) | name=QueSelection**

**├─ Compare.Equal x=(->dNw22a) | y=1 | Result=(dBw21->)**

**└─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw21)**

**├─ CASE# Pattern=True\***

**│ ├─ Variable.Read.ReadText valueOut=(dSw39->) | name=Comm\_Inter**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw34->) | name=Var1\_Inter**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw35->) | name=Var2\_Inter**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw36->) | name=Var3\_Inter**

**│ ├─ CommentBox Comment=This first executoing section can handle all of our moving MyBlocks and the basic green moving blocks and the wait block, it can't handle the"STALL" myblock because we use it paralelly with our moving MyBlocks**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw37->) | name=Var4\_Inter**

**│ ├─ CommentBox Comment=This third que can handle the basic green moving blocks and the wait block, but it can't handle the STALL because we don't want to use it more times paralelly**

**│ ├─ CommentBox Comment=This second que can handle the basic green moving blocks and the wait block also. And as i said it the previous branch it can handle the STALL myblock**

**│ ├─ Variable.Write.WriteNumeric name=QueSelection | valueIn=0**

**│ └─ Switch.CaseSelector.String Cases=["CURV","TU","DRV","TOCM","ATU","MEDSEC","MEDROT","0","END","MEDON","WAITSEC","LRGSEC"] | String=(->dSw39)**

**│ ├─ CASE# Pattern="CURV"**

**│ │ ├─** [**Num\_to\_logic**](http://ev3treevis.azurewebsites.net/#Num_to_logic) **Number=(->dNw37) | Logic=(dBw16->)**

**│ │ └─** [**CURV**](http://ev3treevis.azurewebsites.net/#CURV) **Steering=(->dNw34) | Angle=(->dNw35) | Speed=(->dNw36) | Mstop=(->dBw16)**

**│ ├─ CASE# Pattern="TU"**

**│ │ ├─** [**Num\_to\_logic**](http://ev3treevis.azurewebsites.net/#Num_to_logic) **Number=(->dNw35) | Logic=(dBw15->)**

**│ │ └─** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **Angle=(->dNw34) | Mstop=(->dBw15)**

**│ ├─ CASE# Pattern="DRV"**

**│ │ ├─** [**Num\_to\_logic**](http://ev3treevis.azurewebsites.net/#Num_to_logic) **Number=(->dNw35) | Logic=(dBw14a->)**

**│ │ └─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **CM=(->dNw34) | Mstop=(->dBw14a)**

**│ ├─ CASE# Pattern="TOCM"**

**│ │ ├─** [**Num\_to\_logic**](http://ev3treevis.azurewebsites.net/#Num_to_logic) **Number=(->dNw37) | Logic=(dBw16a->)**

**│ │ └─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=(->dNw34) | Speed=(->dNw35) | Steering=(->dNw36) | Mstop=(->dBw16a)**

**│ ├─ CASE# Pattern="ATU"**

**│ │ ├─** [**Num\_to\_logic**](http://ev3treevis.azurewebsites.net/#Num_to_logic) **Number=(->dNw35) | Logic=(dBw14b->)**

**│ │ └─** [**ATU**](http://ev3treevis.azurewebsites.net/#ATU) **Angle=(->dNw34) | Mstop=(->dBw14b)**

**│ ├─ CASE# Pattern="MEDSEC"**

**│ │ └─ MediumMotor.Time MotorPort=(->dNw34) | Speed=(->dNw35) | Seconds=(->dNw36) | BrakeAtEnd=True**

**│ ├─ CASE# Pattern="MEDROT"**

**│ │ └─ MediumMotor.Rotations MotorPort=(->dNw34) | Speed=(->dNw35) | Rotations=(->dNw36) | BrakeAtEnd=True**

**│ ├─ CASE# Pattern="0"\***

**│ │ └─ Wait.Wait HowLong=0.1**

**│ ├─ CASE# Pattern="END"**

**│ │ └─ Interrupt InterruptName=Interpreter**

**│ ├─ CASE# Pattern="MEDON"**

**│ │ └─ MediumMotor.Unlimited MotorPort=(->dNw34) | Speed=(->dNw35)**

**│ ├─ CASE# Pattern="WAITSEC"**

**│ │ └─ Wait.Wait HowLong=(->dNw34)**

**│ └─ CASE# Pattern="LRGSEC"**

**│ └─ Move.Time Ports=B+C | Steering=(->dNw34) | Speed=(->dNw35) | Seconds=(->dNw36) | BrakeAtEnd=True**

**└─ CASE# Pattern=False**

**└─ Wait.Wait HowLong=0.05**

**================================================================================**

**InterPreter\_Read File=(dSw30[File]->) | Command=(->dSw36[Command]) | Param1=(->dNw37[Param1]) | Param2=(->dNw32[Param2]) | Param3=(->dNw33[Param3]) | Param4=(->dNw34[Param4]) | QueSelection=(->dNw35[QueSelection]) | usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter)

**├─ StartBlock**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=True**

**│ ├─ CASE# Pattern=True\***

**│ │ └─ CONNECTOR from=(dSw30[File]->) | to=(->dw39)**

**│ └─ CASE# Pattern=False**

**│ └─ Constant.Text valueOut=(dw39->) | valueIn=01**

**├─ FileAccess.Read.Text FileName=(->dw39) | Text=(dSw36[Command]->)**

**├─ FileAccess.Read.Numeric FileName=(->dw39) | Numeric=(dNw37[Param1]->)**

**├─ FileAccess.Read.Numeric FileName=(->dw39) | Numeric=(dNw32[Param2]->)**

**├─ FileAccess.Read.Numeric FileName=(->dw39) | Numeric=(dNw33[Param3]->)**

**├─ FileAccess.Read.Numeric FileName=(->dw39) | Numeric=(dNw34[Param4]->)**

**└─ FileAccess.Read.Numeric FileName=(->dw39) | Numeric=(dNw35[QueSelection]->)**

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**LSQ elore=(dBw41[elore]->)**

**├─ StartBlock**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw41[elore])**

**│ ├─ CommentBox Comment=VONALRA IGAZÍTÁS ELŐRÖL/HÁTULRÓL**

**LINE SQUARING**

**paraméter: előre=igaz, hátra=hamis**

**fehér-fekete-fehér vonalakat megközelítve korrigálja előre-, hátramozgással a robot pozícióját**

**Készítette: Luca-2018.10.28.**

**│ ├─ CASE# Pattern=True\***

**│ │ └─ Constant.Numeric valueOut=(dw35->) | valueIn=1**

**│ └─ CASE# Pattern=False**

**│ └─ Constant.Numeric valueOut=(dw35->) | valueIn=-1**

**├─ Math.Multiply A=(->dw35) | B=-30 | Result=(dNw24->)**

**├─** [**ToColor**](http://ev3treevis.azurewebsites.net/#ToColor) **sebesseg=(->dNw24) | relacio=2 | RLI=70**

**├─ Math.Multiply A=(->dw35) | B=-25 | Result=(dNw37->)**

**├─** [**ToColor**](http://ev3treevis.azurewebsites.net/#ToColor) **sebesseg=(->dNw37) | relacio=4 | RLI=20**

**├─ Math.Multiply A=(->dw35) | B=25 | Result=(dNw39->)**

**├─** [**ToColor**](http://ev3treevis.azurewebsites.net/#ToColor) **sebesseg=(->dNw39) | relacio=2 | RLI=70**

**├─** [**ToColor**](http://ev3treevis.azurewebsites.net/#ToColor) **sebesseg=(->dNw37) | relacio=4 | RLI=20**

**├─** [**ToColor**](http://ev3treevis.azurewebsites.net/#ToColor) **sebesseg=(->dNw37) | relacio=2 | RLI=70**

**├─** [**ToColor**](http://ev3treevis.azurewebsites.net/#ToColor) **sebesseg=(->dNw39) | relacio=4 | RLI=20**

**└─** [**ToColor**](http://ev3treevis.azurewebsites.net/#ToColor) **sebesseg=(->dNw39) | relacio=2 | RLI=70**

**================================================================================**

**m\_HUB usedBy=**[**MM\_Sec\_1Step**](http://ev3treevis.azurewebsites.net/#MM_Sec_1Step)

**├─ CommentBox Comment=Misson HUB**

**====================**

**Solving M06, M07**

**Time: 21s**

**Points: 52p**

**Efficiency: 2.48 p/s**

**Attachment: Octopus**

**Frontachment: ---**

**├─ StartBlock**

**├─ FORK# #=1**

**│ ├─ CommentBox Comment=Out from to base**

**│ └─ MediumMotor.Time MotorPort=A | Speed=-100 | Seconds=2.7 | BrakeAtEnd=True**

**├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **CM=68 | Mstop=True**

**├─ Wait.Wait HowLong=1**

**├─ FORK# #=1**

**│ ├─ CommentBox Comment=Tube Module in**

**│ └─** [**STALL**](http://ev3treevis.azurewebsites.net/#STALL)

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=35 | Speed=20 | Steering=0 | Mstop=True**

**├─ Move.Time Ports=B+C | Steering=-100 | Speed=-40 | Seconds=1 | BrakeAtEnd=True**

**├─ CommentBox Comment=Gerhard in**

**├─ MediumMotor.Time MotorPort=D | Speed=-7 | Seconds=2 | BrakeAtEnd=True**

**├─ Wait.Wait HowLong=0.3**

**├F+MediumMotor.Time MotorPort=D | Speed=3 | Seconds=2 | BrakeAtEnd=True**

**├─ MediumMotor.Time MotorPort=A | Speed=100 | Seconds=1.2 | BrakeAtEnd=True**

**├─ CommentBox Comment=Cone Module out**

**├─ Wait.Wait HowLong=0.5**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=5.1 | Speed=-10 | Steering=0 | Mstop=True**

**├─ MediumMotor.Time MotorPort=A | Speed=100 | Seconds=1.31 | BrakeAtEnd=True**

**├─ CommentBox Comment=Trying Gerhard again**

**├─ CommentBox Comment=Back**

**├─ MediumMotor.Time MotorPort=A | Speed=-100 | Seconds=0.21 | BrakeAtEnd=True**

**├─ Move.Time Ports=B+C | Steering=0 | Speed=-20 | Seconds=1.5 | BrakeAtEnd=True**

**├─ FORK# #=1**

**│ ├─ Move.Time Ports=B+C | Steering=-100 | Speed=40 | Seconds=0.5 | BrakeAtEnd=True**

**│ ├─ MediumMotor.Time MotorPort=D | Speed=-9 | Seconds=2 | BrakeAtEnd=True**

**│ ├─ Wait.Wait HowLong=0.3**

**│ └─ MediumMotor.Time MotorPort=D | Speed=3 | Seconds=2 | BrakeAtEnd=True**

**├─ MediumMotor.Time MotorPort=A | Speed=-100 | Seconds=1.5 | BrakeAtEnd=True**

**├─ FORK# #=1**

**│ ├─ Wait.Wait HowLong=2.2**

**│ └─ MediumMotor.Time MotorPort=A | Speed=100 | Seconds=2.3 | BrakeAtEnd=True**

**├─ Wait.Wait HowLong=0.4**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=75 | Speed=-100 | Steering=12 | Mstop=False**

**├F+**[**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=60 | Speed=-100 | Steering=-8 | Mstop=True**

**└─** [**STALL**](http://ev3treevis.azurewebsites.net/#STALL)

**================================================================================**

**m\_Lander usedBy=**[**MM\_Sec\_1Step**](http://ev3treevis.azurewebsites.net/#MM_Sec_1Step)

**├─ StartBlock**

**├─ FORK# #=1**

**│ ├─ CommentBox Comment=Misson LANDER**

**===========================**

**Solving M02, M11, M12 x1, M13, M15**

**Time: 31s**

**Points: 90p**

**Efficiency: 2.9p/s**

**Attachment: T-rex**

**Frontachment: Cobra**

**│ ├─ CommentBox Comment=Go to about thirdway**

**│ └─ MediumMotor.Time MotorPort=D | Speed=40 | Seconds=0.4 | BrakeAtEnd=True**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=50 | Speed=65 | Steering=0 | Mstop=True**

**├─ CommentBox Comment=Waiting for the arm to slam**

**├─ Wait.Wait HowLong=1**

**├─ FORK# #=1**

**│ ├─ CommentBox Comment=Then go to Escape Velocity and drop the arm**

**│ └─** [**STALL**](http://ev3treevis.azurewebsites.net/#STALL)

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=100 | Speed=50 | Steering=3 | Mstop=True**

**├─ MediumMotor.Time MotorPort=D | Speed=-40 | Seconds=0.4 | BrakeAtEnd=True**

**├─ CommentBox Comment=Advance to the lander pod diagonally**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=16 | Speed=-20 | Steering=0 | Mstop=True**

**├─** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **Angle=-40.8 | Mstop=True**

**├F+MediumMotor.Time MotorPort=A | Speed=100 | Seconds=4.3 | BrakeAtEnd=True**

**├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **CM=95 | Mstop=True**

**├─ CommentBox Comment=Turn and Push solar panel to the other field**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=8.2 | Speed=30 | Steering=-30 | Mstop=True**

**├F+**[**STALL**](http://ev3treevis.azurewebsites.net/#STALL)

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=20 | Speed=15 | Steering=0 | Mstop=True**

**├F+MediumMotor.Time MotorPort=A | Speed=-100 | Seconds=4.5 | BrakeAtEnd=True**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=31 | Speed=-40 | Steering=0 | Mstop=True**

**├─ CommentBox Comment=Go to the lander - touchdown and solve it by just go close to it.**

**├─ Wait.Wait HowLong=0.2**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=15 | Speed=30 | Steering=0 | Mstop=True**

**├─** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **Angle=45 | Mstop=True**

**├─ FORK# #=1**

**│ ├─ CommentBox Comment=Back**

**│ └─** [**STALL**](http://ev3treevis.azurewebsites.net/#STALL)

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=27 | Speed=20 | Steering=0 | Mstop=True**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=40 | Speed=-50 | Steering=0 | Mstop=False**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=35 | Speed=-100 | Steering=-20 | Mstop=False**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=25 | Speed=-100 | Steering=0 | Mstop=False**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=32 | Speed=-100 | Steering=35 | Mstop=False**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=38 | Speed=-100 | Steering=0 | Mstop=False**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=32 | Speed=-100 | Steering=-18 | Mstop=False**

**└─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=60 | Speed=-100 | Steering=0 | Mstop=True**

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**m\_Meteor usedBy=**[**MM\_Sec\_1Step**](http://ev3treevis.azurewebsites.net/#MM_Sec_1Step)

**├─ StartBlock**

**├F+MediumMotor.Time MotorPort=A | Speed=-30 | Seconds=1 | BrakeAtEnd=True**

**├─ Wait.Wait HowLong=0.1**

**├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **CM=66 | Mstop=True**

**├─ CommentBox Comment=Outnavigate from the base**

**├─ Wait.Wait HowLong=0.2**

**├─** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **Angle=-66 | Mstop=True**

**├─ CommentBox Comment=We reach the shooting point and release the balls**

**├─ Wait.Wait HowLong=0.2**

**├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **CM=52 | Mstop=True**

**├─ Wait.Wait HowLong=0.2**

**├─** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **Angle=64 | Mstop=True**

**├─ CommentBox Comment=Misson METEOR**

**==================**

**Solving M05, M14**

**Time: 15s**

**Points: 50p**

**Efficiency: 3.33p/s**

**Attachment: STRIKER**

**Frontachment: ---**

**├─ MediumMotor.Time MotorPort=A | Speed=30 | Seconds=1.2 | BrakeAtEnd=True**

**├─ FORK# #=1**

**│ ├─ CommentBox Comment=We collect the samples**

**│ └─** [**STALL**](http://ev3treevis.azurewebsites.net/#STALL)

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=37 | Speed=-40 | Steering=2 | Mstop=False**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=18 | Speed=20 | Steering=0 | Mstop=False**

**├─ CommentBox Comment=Back**

**├─** [**TU**](http://ev3treevis.azurewebsites.net/#TU) **Angle=-75 | Mstop=True**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=45 | Speed=-100 | Steering=-14 | Mstop=False**

**└─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=64 | Speed=-100 | Steering=-4 | Mstop=True**

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**m\_North**

**├─ CommentBox Comment=Misson NORTH**

**====================**

**Solving M01, M02, M03, M04**

**Time: 10s**

**Points: 120p**

**Efficiency: 10.2p/s**

**Attachment: HOOK**

**Frontachment ELEPHANT**

**├─ StartBlock**

**├F+MediumMotor.Unlimited MotorPort=A | Speed=10**

**├─ CommentBox Comment=Go to the slide and activate the pneumatics**

**├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **CM=73.2 | Mstop=True**

**├─ Wait.Wait HowLong=1**

**├─ CommentBox Comment=Go to the good position**

**├─ Move.Time Ports=B+C | Steering=0 | Speed=-35 | Seconds=3 | BrakeAtEnd=True**

**├─ Wait.Wait HowLong=0.3**

**├F+MediumMotor.Unlimited MotorPort=A | Speed=30**

**├─ CommentBox Comment=Go back to get the modules off the holder**

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=7.5 | Speed=-10 | Steering=0 | Mstop=True**

**├─ MediumMotor.Time MotorPort=A | Speed=-10 | Seconds=0.5 | BrakeAtEnd=True**

**├─ CommentBox Comment=Back**

**└─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=77 | Speed=-90 | Steering=0 | Mstop=True**

**================================================================================**

**m\_Thor usedBy=**[**MM\_Sec\_1Step**](http://ev3treevis.azurewebsites.net/#MM_Sec_1Step)

**├─ CommentBox Comment=Misson THOR**

**=========================**

**Solving M05, M08, M09, M10, M12x2**

**Time: 30s**

**Points: 70p**

**Efficiency: 2.6p/s**

**Attachment: THOR**

**Frontachment: ---**

**├─ CommentBox Comment=Go to the northern wall**

**├─ StartBlock**

**├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **CM=63 | Mstop=True**

**├─** [**TU\_fast**](http://ev3treevis.azurewebsites.net/#TU_fast) **Angle=-44 | Mstop=True**

**├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **CM=40 | Mstop=True**

**├─ FORK# #=1**

**│ ├─ MediumMotor.Degrees MotorPort=A | Speed=-30 | Degrees=140 | BrakeAtEnd=True**

**│ ├─ CommentBox Comment=Activate the pneumatics amd reach the exerices**

**│ └─ MediumMotor.Time MotorPort=A | Speed=100 | Seconds=2 | BrakeAtEnd=True**

**├─** [**TU\_fast**](http://ev3treevis.azurewebsites.net/#TU_fast) **Angle=-25 | Mstop=True**

**├─** [**DRV**](http://ev3treevis.azurewebsites.net/#DRV) **CM=40 | Mstop=True**

**├─** [**TU\_fast**](http://ev3treevis.azurewebsites.net/#TU_fast) **Angle=40 | Mstop=True**

**├F+**[**STALL**](http://ev3treevis.azurewebsites.net/#STALL)

**├─** [**ToCM**](http://ev3treevis.azurewebsites.net/#ToCM) **CM=60 | Speed=40 | Steering=0 | Mstop=True**

**├─ CommentBox Comment=Bring the strength exercie's lever up and the do trhe aerobic exercise until the time is up**

**├─ Motor.Time MotorPort=C | Speed=-40 | Seconds=0.5 | BrakeAtEnd=True**

**├F+MediumMotor.Unlimited MotorPort=D | Speed=-100**

**├─ MediumMotor.Time MotorPort=A | Speed=-40 | Seconds=0.7 | BrakeAtEnd=True**

**└─ ConfigurableWhileLoop InterruptName=01 | Stop=LoopCondition.Unlimited**

**├─ MediumMotor.Time MotorPort=A | Speed=80 | Seconds=0.15 | BrakeAtEnd=True**

**├─ MediumMotor.Time MotorPort=A | Speed=-40 | Seconds=0.2 | BrakeAtEnd=True**

**└─ Wait.Wait HowLong=0.1**

**================================================================================**

**MasterMenu**

**├─ StartBlock**

**├─ Display.Shapes.Point ClearScreen=True | X=0 | Y=0 | InvertColor=True**

**├─ Variable.Write.WriteBoolean name=\_MasterMenu\_FirstProgramStarted | valueIn=False**

**├─ Variable.Write.WriteBoolean name=isRunStarted | valueIn=False**

**├─ CommentBox Comment=Go through Menu windows(calibrate and robot run)**

**├─ Variable.Write.WriteNumeric name=\_MasterMenu\_Counter | valueIn=1**

**├─ FORK# #=1**

**│ └─ ConfigurableWhileLoop InterruptName=ValueOfScene1 | Stop=LoopCondition.Unlimited**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw44->) | name=Scene**

**│ ├─ Compare.Equal x=(->dNw44) | y=1 | Result=(dBw25->)**

**│ ├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw25)**

**│ │ ├─ CASE# Pattern=True\***

**│ │ │ ├─ Display.Text.StringGrid Text=Current Scene: | ClearScreen=False | Column=0 | Row=0 | InvertColor=False | Size=0**

**│ │ │ └─ Display.Text.StringGrid Text= Robot Run | ClearScreen=False | Column=0 | Row=3 | InvertColor=False | Size=2**

**│ │ └─ CASE# Pattern=False**

**│ │ └─ (None)**

**│ ├─ BrickButton.Compare Buttons=[Center] | Action=1 | Result=(dBw24->)**

**│ ├─ BooleanOperations.And A=(->dBw24) | B=(->dBw25) | Result=(dBw26->)**

**│ ├─ CommentBox Comment=Activating Robot run section**

**│ └─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw26)**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ Wait.Wait HowLong=0.5**

**│ │ ├─ Gyro.MeasureAngle Port=2 | Angle=(dNw10b->)**

**│ │ ├─ Variable.Write.WriteNumeric name=1stMeas | valueIn=(->dNw10b)**

**│ │ └─** [**MM\_Secondary**](http://ev3treevis.azurewebsites.net/#MM_Secondary)

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**├─ FORK# #=2**

**│ ├─ Variable.Write.WriteNumeric name=Scene | valueIn=1**

**│ └─ ConfigurableWhileLoop InterruptName=ValueOfScene | Stop=LoopCondition.Unlimited**

**│ └─ Switch.BrickButton.Measure Cases=[Left,Right,Nothing]**

**│ ├─ CASE# Pattern=Left**

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw34->) | name=Scene**

**│ │ ├─ Compare.GreaterThan x=(->dNw34) | y=1 | Result=(dBw14->)**

**│ │ └─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw14)**

**│ │ ├─ CASE# Pattern=True\***

**│ │ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw10->) | name=Scene**

**│ │ │ ├─ Math.Subtract A=(->dNw10) | B=1 | Result=(dNw11->)**

**│ │ │ └─ Variable.Write.WriteNumeric name=Scene | valueIn=(->dNw11)**

**│ │ └─ CASE# Pattern=False**

**│ │ └─ (None)**

**│ ├─ CASE# Pattern=Right**

**│ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw13->) | name=Scene**

**│ │ ├─ Compare.LessThan x=(->dNw13) | y=2 | Result=(dBw14a->)**

**│ │ └─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw14a)**

**│ │ ├─ CASE# Pattern=True\***

**│ │ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw10a->) | name=Scene**

**│ │ │ ├─ Math.Add A=(->dNw10a) | B=1 | Result=(dNw11a->)**

**│ │ │ └─ Variable.Write.WriteNumeric name=Scene | valueIn=(->dNw11a)**

**│ │ └─ CASE# Pattern=False**

**│ │ └─ (None)**

**│ └─ CASE# Pattern=Nothing\***

**│ └─ (None)**

**└─ ConfigurableWhileLoop InterruptName=ValueOfScene | Stop=LoopCondition.Unlimited**

**├─ Variable.Read.ReadNumeric valueOut=(dNw29->) | name=Scene**

**├─ Compare.Equal x=(->dNw29) | y=2 | Result=(dBw46->)**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw46)**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ Display.Text.StringGrid Text=Current Scene: | ClearScreen=False | Column=0 | Row=0 | InvertColor=False | Size=0**

**│ │ └─ Display.Text.StringGrid Text= Calibrate | ClearScreen=False | Column=0 | Row=3 | InvertColor=False | Size=2**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**├─ BrickButton.Compare Buttons=[Center] | Action=1 | Result=(dBw32->)**

**├─ BooleanOperations.And A=(->dBw32) | B=(->dBw46) | Result=(dBw38->)**

**└─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw38)**

**├─ CommentBox Comment=Color based visual feedback**

**├─ CommentBox Comment=Calibrating section**

**├─ CASE# Pattern=True\***

**│ ├─ Display.Text.StringGrid Text=calibrating... | ClearScreen=True | Column=0 | Row=3 | InvertColor=False | Size=2**

**│ ├─ Wait.Wait HowLong=0.5**

**│ ├─ LED.On Color=Orange | Pulse=False**

**│ ├─** [**GyroReset**](http://ev3treevis.azurewebsites.net/#GyroReset) **GyroPort=1**

**│ ├─** [**GyroReset**](http://ev3treevis.azurewebsites.net/#GyroReset) **GyroPort=2**

**│ ├─ MediumMotor.Stop MotorPort=A | BrakeAtEnd=False**

**│ ├─ MediumMotor.Stop MotorPort=D | BrakeAtEnd=False**

**│ ├─ RotationSensor.Reset MotorPort=A**

**│ ├─ RotationSensor.Reset MotorPort=B**

**│ ├─ RotationSensor.Reset MotorPort=C**

**│ ├─ RotationSensor.Reset MotorPort=D**

**│ ├─ LED.On Color=Green | Pulse=True**

**│ └─ Display.Shapes.Point ClearScreen=True | X=0 | Y=0 | InvertColor=True**

**└─ CASE# Pattern=False**

**└─ (None)**

**================================================================================**

**mi\_North usedBy=**[**MM\_Sec\_1Step**](http://ev3treevis.azurewebsites.net/#MM_Sec_1Step)

**├─ CommentBox Comment=Misson NORTH**

**====================**

**Solving M01, M02, M03, M04**

**Time: 10s**

**Points: 120p**

**Efficiency: 10.2p/s**

**Attachment: HOOK**

**Frontachment ELEPHANT**

**├─ StartBlock**

**└─** [**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter) **FileName=North**

**================================================================================**

**MM\_Display\_Runs NumberOfRun=(dNw15[NumberOfRun]->) | usedBy=**[**MM\_Secondary**](http://ev3treevis.azurewebsites.net/#MM_Secondary)

**├─ StartBlock**

**├─ Text.Merge A=(->dNw15[NumberOfRun]) | B=. program | C= | Result=(dSw21->)**

**├─ CommentBox Comment=Display the active round's name**

**├─ Display.Text.StringGrid Text=(->dSw21) | ClearScreen=True | Column=0 | Row=1 | InvertColor=False | Size=2**

**└─ Switch.CaseSelector.Numeric Cases=[1,2,3,4,5,99] | Number=(->dNw15[NumberOfRun])**

**├─ CASE# Pattern=1**

**│ └─ Display.Text.StringGrid Text=HUB | ClearScreen=False | Column=0 | Row=4 | InvertColor=False | Size=1**

**├─ CASE# Pattern=2**

**│ └─ Display.Text.StringGrid Text=Meteor | ClearScreen=False | Column=0 | Row=4 | InvertColor=False | Size=1**

**├─ CASE# Pattern=3**

**│ └─ Display.Text.StringGrid Text=Lander | ClearScreen=False | Column=0 | Row=4 | InvertColor=False | Size=1**

**├─ CASE# Pattern=4**

**│ └─ Display.Text.StringGrid Text=North\_int | ClearScreen=False | Column=0 | Row=4 | InvertColor=False | Size=1**

**├─ CASE# Pattern=5**

**│ └─ Display.Text.StringGrid Text=Thor | ClearScreen=False | Column=0 | Row=4 | InvertColor=False | Size=1**

**└─ CASE# Pattern=99\***

**└─ (None)**

**================================================================================**

**MM\_Sec\_1Step usedBy=**[**MM\_Secondary**](http://ev3treevis.azurewebsites.net/#MM_Secondary)

**├─ StartBlock**

**└─ ConfigurableWhileLoop InterruptName=\_MasterMenu | Stop=LoopCondition.Unlimited**

**└─ Switch.BrickButton.Measure Cases=[Center,Top,Bottom,Left,Right,Nothing]**

**├─ CASE# Pattern=Center**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw32->) | name=\_MasterMenu\_Counter**

**│ ├─ FORK# #=1**

**│ │ ├─ Display.Text.StringGrid Text=running... | ClearScreen=False | Column=0 | Row=3 | InvertColor=False | Size=2**

**│ │ ├─ Sound.Note Note=C6 | Duration=0.05 | Volume=50 | PlayType=WaitForCompletion**

**│ │ ├─ Sound.Note Note=E6 | Duration=0.05 | Volume=50 | PlayType=WaitForCompletion**

**│ │ ├─ Sound.Note Note=C6 | Duration=0.05 | Volume=50 | PlayType=WaitForCompletion**

**│ │ ├─ CommentBox Comment=Voice based feedback everywhere**

**│ │ └─ Sound.Note Note=E6 | Duration=0.05 | Volume=50 | PlayType=WaitForCompletion**

**│ ├─ FORK# #=2**

**│ │ ├─ Wait.BrickButton.Compare Buttons=[Center] | Action=0**

**│ │ └─ ConfigurableWhileLoop InterruptName=\_MMCancel | Stop=LoopCondition.Unlimited**

**│ │ └─ Switch.BrickButton.Measure Cases=[Center,Nothing]**

**│ │ ├─ CASE# Pattern=Center**

**│ │ │ ├─ Interrupt InterruptName=\_MMACancel**

**│ │ │ └─ Sound.Note Note=A5 | Duration=0.05 | Volume=100 | PlayType=WaitForCompletion**

**│ │ └─ CASE# Pattern=Nothing\***

**│ │ └─ (None)**

**│ ├─ FORK# #=3**

**│ │ ├─ CommentBlock Comment=mennyi ideig fut a kör**

**│ │ ├─ Variable.Write.WriteBoolean name=\_MasterMenu\_FirstProgramStarted | valueIn=True**

**│ │ ├─ Timer.Reset Timer=7**

**│ │ ├─ ConfigurableWhileLoop InterruptName=01\_MasterMenu\_Idozito | Stop=LoopCondition.Unlimited**

**│ │ │ ├─ Wait.Wait HowLong=0.1**

**│ │ │ ├─ Timer.MeasureTime Timer=7 | TimerValue=(dNw14->)**

**│ │ │ ├─ Round.Truncate Input=(->dNw14) | NumberofDecimals=1 | OutputResult=(dNw15->)**

**│ │ │ └─ Display.Text.StringGrid Text=(->dNw15) | ClearScreen=False | Column=0 | Row=9 | InvertColor=False | Size=2**

**│ │ ├─ CommentBox Comment=How long runs the round?(sec)**

**│ │ ├─ Timer.MeasureTime Timer=7 | TimerValue=(dNw72->)**

**│ │ └─ Variable.Write.WriteNumeric name=\_MasterMenu\_TimeOfLastRun | valueIn=(->dNw72)**

**│ ├─ ConfigurableWhileLoop InterruptName=\_MMACancel | Stop=LoopCondition.Count | IterationsToRun=1**

**│ │ └─ Switch.CaseSelector.Numeric Cases=[1,2,3,4,5,99] | Number=(->dNw32)**

**│ │ ├─ CASE# Pattern=1**

**│ │ │ └─** [**m\_HUB**](http://ev3treevis.azurewebsites.net/#m_HUB)

**│ │ ├─ CASE# Pattern=2**

**│ │ │ └─** [**m\_Meteor**](http://ev3treevis.azurewebsites.net/#m_Meteor)

**│ │ ├─ CASE# Pattern=3**

**│ │ │ └─** [**m\_Lander**](http://ev3treevis.azurewebsites.net/#m_Lander)

**│ │ ├─ CASE# Pattern=4**

**│ │ │ └─** [**mi\_North**](http://ev3treevis.azurewebsites.net/#mi_North)

**│ │ ├─ CASE# Pattern=5**

**│ │ │ ├─ Gyro.Reset Port=2**

**│ │ │ └─** [**m\_Thor**](http://ev3treevis.azurewebsites.net/#m_Thor)

**│ │ └─ CASE# Pattern=99\***

**│ │ └─ (None)**

**│ ├─ CommentBox Comment=\_MMCancel is because we have to stop our current running program without stop the whole MasterMenu**

**│ ├─ Interrupt InterruptName=01\_MasterMenu\_Idozito**

**│ ├─ Interrupt InterruptName=\_MMCancel**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw20->) | name=\_MasterMenu\_Counter**

**│ ├─ Compare.LessThan x=(->dNw20) | y=5 | Result=(dBw46->)**

**│ ├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw46)**

**│ │ ├─ CASE# Pattern=True\***

**│ │ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw22->) | name=\_MasterMenu\_Counter**

**│ │ │ ├─ Math.Add A=(->dNw22) | B=1 | Result=(dNw23->)**

**│ │ │ └─ Variable.Write.WriteNumeric name=\_MasterMenu\_Counter | valueIn=(->dNw23)**

**│ │ └─ CASE# Pattern=False**

**│ │ └─ (None)**

**│ ├─ MediumMotor.Stop MotorPort=A | BrakeAtEnd=False**

**│ ├─ MediumMotor.Stop MotorPort=D | BrakeAtEnd=False**

**│ ├─ Move.Stop Ports=B+C | BrakeAtEnd=False**

**│ ├─ Sound.Note Note=F5 | Duration=0.05 | Volume=30 | PlayType=WaitForCompletion**

**│ ├─ Wait.Wait HowLong=0.3**

**│ └─ Interrupt InterruptName=\_MasterMenu**

**├─ CASE# Pattern=Top**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw17->) | name=\_MasterMenu\_Counter**

**│ ├─ Compare.LessThan x=(->dNw17) | y=5 | Result=(dBw18->)**

**│ ├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw18)**

**│ │ ├─ CASE# Pattern=True\***

**│ │ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw10->) | name=\_MasterMenu\_Counter**

**│ │ │ ├─ Math.Add A=(->dNw10) | B=1 | Result=(dNw11->)**

**│ │ │ ├─ Variable.Write.WriteNumeric name=\_MasterMenu\_Counter | valueIn=(->dNw11)**

**│ │ │ └─ Sound.Note Note=D6 | Duration=0.05 | Volume=100 | PlayType=WaitForCompletion**

**│ │ └─ CASE# Pattern=False**

**│ │ ├─ Sound.Note Note=F4 | Duration=0.05 | Volume=30 | PlayType=WaitForCompletion**

**│ │ └─ Sound.Note Note=A5 | Duration=0.05 | Volume=30 | PlayType=WaitForCompletion**

**│ ├─ Wait.BrickButton.Compare Buttons=[Top] | Action=0**

**│ ├─ CommentBox Comment=Go through the programs**

**│ └─ Interrupt InterruptName=\_MasterMenu**

**├─ CASE# Pattern=Bottom**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw20a->) | name=\_MasterMenu\_Counter**

**│ ├─ Compare.GreaterThan x=(->dNw20a) | y=1 | Result=(dBw25->)**

**│ ├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw25)**

**│ │ ├─ CASE# Pattern=True\***

**│ │ │ ├─ Variable.Read.ReadNumeric valueOut=(dNw10a->) | name=\_MasterMenu\_Counter**

**│ │ │ ├─ Math.Subtract A=(->dNw10a) | B=1 | Result=(dNw11a->)**

**│ │ │ ├─ Variable.Write.WriteNumeric name=\_MasterMenu\_Counter | valueIn=(->dNw11a)**

**│ │ │ └─ Sound.Note Note=D5 | Duration=0.05 | Volume=100 | PlayType=WaitForCompletion**

**│ │ └─ CASE# Pattern=False**

**│ │ ├─ Sound.Note Note=A5 | Duration=0.05 | Volume=30 | PlayType=WaitForCompletion**

**│ │ └─ Sound.Note Note=F4 | Duration=0.05 | Volume=30 | PlayType=WaitForCompletion**

**│ ├─ Wait.BrickButton.Compare Buttons=[Bottom] | Action=0**

**│ └─ Interrupt InterruptName=\_MasterMenu**

**├─ CASE# Pattern=Left**

**│ └─ Interrupt InterruptName=\_MasterMenu**

**├─ CASE# Pattern=Right**

**│ └─ Interrupt InterruptName=\_MasterMenu**

**└─ CASE# Pattern=Nothing\***

**└─ (None)**

**================================================================================**

**MM\_Secondary usedBy=**[**MasterMenu**](http://ev3treevis.azurewebsites.net/#MasterMenu)

**├─ StartBlock**

**├─ Interrupt InterruptName=ValueOfScene**

**├─ FORK# #=1**

**│ └─ ConfigurableWhileLoop InterruptName=\_MasterMenuVezer | Stop=LoopCondition.Unlimited**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw13->) | name=\_MasterMenu\_Counter**

**│ ├─** [**MM\_Display\_Runs**](http://ev3treevis.azurewebsites.net/#MM_Display_Runs) **NumberOfRun=(->dNw13)**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw34->) | name=\_MasterMenu\_TimeOfLastRun**

**│ ├─ Display.Text.StringGrid Text=(->dNw34) | ClearScreen=False | Column=0 | Row=9 | InvertColor=False | Size=2**

**│ ├─ CommentBox Comment=Robot run section**

**│ ├─** [**MM\_Sec\_1Step**](http://ev3treevis.azurewebsites.net/#MM_Sec_1Step)

**│ └─ LED.Off**

**├─ CommentBox Comment=How long runs the whole robot run?(sec)**

**├─ ConfigurableWhileLoop InterruptName=01\_MasterMenu\_TeljesFutas\_Idozito | Stop=LoopCondition.Unlimited**

**│ ├─ Variable.Read.ReadBoolean valueOut=(dBw11->) | name=\_MasterMenu\_FirstProgramStarted**

**│ ├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw11)**

**│ │ ├─ CASE# Pattern=True\***

**│ │ │ └─ Interrupt InterruptName=01\_MasterMenu\_TeljesFutas\_Idozito**

**│ │ └─ CASE# Pattern=False**

**│ │ └─ (None)**

**│ └─ Wait.Wait HowLong=0.1**

**├─ Timer.Reset Timer=8**

**└─ ConfigurableWhileLoop InterruptName=02\_MasterMenu\_TeljesFutas\_Idozito | Stop=LoopCondition.Unlimited**

**├─ Timer.MeasureTime Timer=8 | TimerValue=(dNw13a->)**

**├─ Round.Truncate Input=(->dNw13a) | NumberofDecimals=1 | OutputResult=(dNw14->)**

**├─ Display.Text.StringGrid Text=(->dNw14) | ClearScreen=False | Column=0 | Row=11 | InvertColor=False | Size=0**

**└─ Wait.Wait HowLong=0.1**

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**Num\_to\_logic Number=(dNw12[Number]->) | Logic=(->dBw11[Logic]) | usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter)

**├─ StartBlock**

**└─ Switch.CaseSelector.Numeric Cases=[1,0,99] | Number=(->dNw12[Number])**

**├─ CASE# Pattern=1**

**│ └─ Constant.Boolean valueOut=(dBw11[Logic]->) | valueIn=True**

**├─ CASE# Pattern=0**

**│ └─ Constant.Boolean valueOut=(dBw11[Logic]->) | valueIn=False**

**└─ CASE# Pattern=99\***

**└─ (None)**

**================================================================================**

**STALL usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter) **|** [**m\_HUB**](http://ev3treevis.azurewebsites.net/#m_HUB) **|** [**m\_Lander**](http://ev3treevis.azurewebsites.net/#m_Lander) **|** [**m\_Meteor**](http://ev3treevis.azurewebsites.net/#m_Meteor) **|** [**m\_Thor**](http://ev3treevis.azurewebsites.net/#m_Thor)

**├─ StartBlock**

**└─ ConfigurableWhileLoop InterruptName=DRV01 | Stop=LoopCondition.Count | IterationsToRun=1**

**├─ ConfigurableWhileLoop InterruptName=DRV01 | Stop=LoopCondition.Boolean | DoStop=(->dBw26)**

**│ ├─ CommentBox Comment=We use this MyBlock for stopping the robot when it stucks to anything(e.g.:wall)**

**│ ├─ CommentBlock Comment=Motor beakadás check -->**

**│ ├─ RotationSensor.MeasureDegrees MotorPort=C | Degrees=(dNw21->)**

**│ ├─ Wait.Wait HowLong=0.5**

**│ ├─ RotationSensor.MeasureDegrees MotorPort=C | Degrees=(dNw28->)**

**│ ├─ Math.Subtract A=(->dNw28) | B=(->dNw21) | Result=(dNw23->)**

**│ ├─ Range.Inside TestValue=(->dNw23) | LowerBound=0 | UpperBound=3 | Result=(dBw26->)**

**│ └─ CommentBlock Comment=Ha beakadt kilépünk -->**

**├─ CommentBlock Comment=Ellenörző hang -->**

**├─ CommentBox Comment=Voice based feedback**

**├─ Sound.Note Note=G#6 | Duration=0.2 | Volume=100 | PlayType=WaitForCompletion**

**├─ Sound.Note Note=G6 | Duration=0.2 | Volume=100 | PlayType=PlayOnce**

**├─ CommentBlock Comment=Kilépünk az összes DRV01 loopból**

**├─ CommentBox Comment=We stop the DRV01 loop because we use this loop in the moving blocks**

**├─ CommentBox Comment=And the reason we use a 1 times going loop is that's we have to stop this block when we haven't stucked to some thing.**

**└─ Interrupt InterruptName=DRV01**

**================================================================================**

**ToCM CM=(dNw57[CM]->) | Speed=(dNw59[Speed]->) | Steering=(dNw65[Steering]->) | Mstop=(dBw64[Mstop]->) | usedBy=**[**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter) **|** [**m\_HUB**](http://ev3treevis.azurewebsites.net/#m_HUB) **|** [**m\_Lander**](http://ev3treevis.azurewebsites.net/#m_Lander) **|** [**m\_Meteor**](http://ev3treevis.azurewebsites.net/#m_Meteor) **|** [**m\_North**](http://ev3treevis.azurewebsites.net/#m_North) **|** [**m\_Thor**](http://ev3treevis.azurewebsites.net/#m_Thor)

**├─ StartBlock**

**├─ CommentBlock Comment=Célérték számolás -->**

**├─ CommentBox Comment=Target value counting**

**├─ Math.Advanced A=(->dNw57[CM]) | B=7 | C=-1 | D=0 | Equation=a/(b\*3.1415)\*c | Result=(dNw58->)**

**├─ CommentBlock Comment=Előre-Hátra menet eldöntése -->**

**├─ CommentBox Comment=Forward or backward deciding**

**├─ Compare.LessOrEqual x=(->dNw59[Speed]) | y=0 | Result=(dBw35->)**

**├─ Math.Multiply A=(->dNw59[Speed]) | B=-1 | Result=(dNw66->)**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw35)**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ Math.Multiply A=(->dNw58) | B=-1 | Result=(dw60->)**

**│ │ └─ Variable.Write.WriteNumeric name=LoopGrPerLr | valueIn=3**

**│ └─ CASE# Pattern=False**

**│ ├─ Variable.Write.WriteNumeric name=LoopGrPerLr | valueIn=5**

**│ └─ CONNECTOR from=(dNw58->) | to=(->dw60)**

**├─ RotationSensor.MeasureRotation MotorPort=B | Rotations=(dNw61->)**

**├─ Math.Add A=(->dw60) | B=(->dNw61) | Result=(dNw62->)**

**├─ Variable.Read.ReadNumeric valueOut=(dNw53->) | name=LoopGrPerLr**

**├─ CommentBox Comment=Motorblock**

**├─ CommentBlock Comment=Motorblokk -->**

**├─ Move.Unlimited Ports=B+C | Steering=(->dNw65[Steering]) | Speed=(->dNw66)**

**├─ CommentBox Comment=Waiting for reach the target value**

**├─ CommentBlock Comment=Várakozás a cél eléréséig -->**

**├─ ConfigurableWhileLoop InterruptName=DRV01 | Stop=RotationSensor.CompareRotation | MotorPort=B | Comparison=(->dNw53) | ThresholdRotations=(->dNw62)**

**│ ├─ CommentBox Comment=The reason we use loop is because the wait block isn't interabtable**

**│ └─ CommentBlock Comment=Azért loop, mert megszakítható (nem wait blokk)**

**├─ Interrupt InterruptName=DRV01**

**├─ CommentBlock Comment=Mstop paraméter -->**

**└─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw64[Mstop])**

**├─ CommentBox Comment=Mstop**

**├─ CASE# Pattern=True\***

**│ ├─ Move.Stop Ports=B+C | BrakeAtEnd=True**

**│ └─ Variable.Write.WriteNumeric name=Speed | valueIn=0**

**└─ CASE# Pattern=False**

**└─ (None)**

**================================================================================**

**ToColor sebesseg=(dNw16[sebesseg]->) | relacio=(dNw19[relacio]->) | RLI=(dNw20[RLI]->) | usedBy=**[**LSQ**](http://ev3treevis.azurewebsites.net/#LSQ)

**├─ StartBlock**

**├─ FORK# #=1**

**│ ├─ Motor.Unlimited MotorPort=C | Speed=(->dNw16[sebesseg])**

**│ ├─ Wait.ColorSensor.CompareReflectedLight Port=3 | Comparison=(->dNw19[relacio]) | Threshold=(->dNw20[RLI])**

**│ └─ Motor.Stop MotorPort=C | BrakeAtEnd=True**

**├─ Motor.Unlimited MotorPort=B | Speed=(->dNw16[sebesseg])**

**├─ Wait.ColorSensor.CompareReflectedLight Port=4 | Comparison=(->dNw19[relacio]) | Threshold=(->dNw20[RLI])**

**└─ Motor.Stop MotorPort=B | BrakeAtEnd=True**

**================================================================================**

**TU Angle=(dNw51[Angle]->) | Mstop=(dBw36[Mstop]->) | usedBy=**[**ATU**](http://ev3treevis.azurewebsites.net/#ATU) **|** [**Interpreter**](http://ev3treevis.azurewebsites.net/#Interpreter) **|** [**m\_Lander**](http://ev3treevis.azurewebsites.net/#m_Lander) **|** [**m\_Meteor**](http://ev3treevis.azurewebsites.net/#m_Meteor)

**├─ StartBlock**

**├─ CommentBlock Comment=Debug mode -->**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=True**

**│ ├─ CommentBox Comment=Debug mode**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ CONNECTOR from=(dNw51[Angle]->) | to=(->dw29)**

**│ │ └─ CONNECTOR from=(dBw36[Mstop]->) | to=(->dw37)**

**│ └─ CASE# Pattern=False**

**│ ├─ Constant.Numeric valueOut=(dw29->) | valueIn=-90**

**│ └─ Constant.Boolean valueOut=(dw37->) | valueIn=True**

**├─ CommentBlock Comment=Irány beállítás -->**

**├─ Variable.Write.WriteNumeric name=Steering | valueIn=-100**

**├─ Wait.Wait HowLong=0.1**

**├─ Gyro.MeasureAngle Port=2 | Angle=(dNw47->)**

**├─ FORK# #=1**

**│ └─ ConfigurableWhileLoop InterruptName=TU | Stop=LoopCondition.Unlimited**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw17->) | name=Steering**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw64a->) | name=Speed**

**│ ├─ CommentBox Comment=Motor block**

**│ ├─ Move.Unlimited Ports=B+C | Steering=(->dNw17) | Speed=(->dNw64a)**

**│ └─ Wait.Wait HowLong=0.01**

**├─ FORK# #=2**

**│ └─ ConfigurableWhileLoop InterruptName=TU | Stop=LoopCondition.Count | IterationsToRun=1**

**│ ├─ Timer.Reset Timer=1**

**│ ├─ ConfigurableWhileLoop InterruptName=TU | Stop=Timer.CompareTime | Timer=1 | Comparison=> | Threshold=5**

**│ │ └─ Wait.Wait HowLong=0.1**

**│ ├─ Sound.Note Note=A5 | Duration=0.1 | Volume=10 | PlayType=WaitForCompletion**

**│ └─ Interrupt InterruptName=TU**

**├─ FORK# #=3**

**│ ├─ ConfigurableWhileLoop InterruptName=TU | Stop=LoopCondition.Boolean | DoStop=(->dBw9)**

**│ │ ├─ Gyro.MeasureAngle Port=2 | Angle=(dNw21->)**

**│ │ ├─ Math.Advanced A=(->dw29) | B=(->dNw21) | C=(->dNw47) | D=0 | Equation=(a-(b-c)) | Result=(dNw45->)**

**│ │ └─ Range.Inside TestValue=(->dNw45) | LowerBound=-4 | UpperBound=4 | Result=(dBw9->)**

**│ ├─ Interrupt InterruptName=TU**

**│ └─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dw37)**

**│ ├─ CommentBox Comment=(Target angle - (last measurement - 1.measurement))**

**when the difference is between -2 and 2 we go out from the loop**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ Move.Stop Ports=B+C | BrakeAtEnd=True**

**│ │ ├─ Sound.Note Note=F6 | Duration=0.1 | Volume=10 | PlayType=PlayOnce**

**│ │ ├─ Wait.Wait HowLong=0.1**

**│ │ └─ Variable.Write.WriteNumeric name=Speed | valueIn=0**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**└─ ConfigurableWhileLoop InterruptName=TU | Stop=LoopCondition.Unlimited**

**├─ Gyro.MeasureAngle Port=2 | Angle=(dNw50->)**

**├─ CommentBox Comment=(Target angle - (last measurement - 1.measurement)) \* k value**

**├─ Math.Advanced A=(->dw29) | B=(->dNw50) | C=(->dNw47) | D=0.2 | Equation=(a-(b-c))\*d | Result=(dNw53->)**

**├─ CommentBox Comment=Speed counting**

**├─ Variable.Write.WriteNumeric name=Speed | valueIn=(->dNw53)**

**├─ Variable.Read.ReadNumeric valueOut=(dNw58->) | name=Speed**

**├─ Compare.GreaterThan x=(->dNw58) | y=35 | Result=(dBw29->)**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw29)**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ CommentBox Comment=Mstop**

**│ │ └─ Variable.Write.WriteNumeric name=Speed | valueIn=35**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**├─ CommentBox Comment=Max speed check**

**├─ Variable.Read.ReadNumeric valueOut=(dNw66->) | name=Speed**

**├─ Compare.LessThan x=(->dNw66) | y=-35 | Result=(dBw36->)**

**├─ CommentBox Comment=Min speed check**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw36)**

**│ ├─ CASE# Pattern=True\***

**│ │ └─ Variable.Write.WriteNumeric name=Speed | valueIn=-35**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**├─ Variable.Read.ReadNumeric valueOut=(dNw65->) | name=Speed**

**├─ Range.Inside TestValue=(->dNw65) | LowerBound=0 | UpperBound=18 | Result=(dBw52->)**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw52)**

**│ ├─ CASE# Pattern=True\***

**│ │ └─ Variable.Write.WriteNumeric name=Speed | valueIn=18**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**├─ Variable.Read.ReadNumeric valueOut=(dNw64->) | name=Speed**

**├─ Range.Inside TestValue=(->dNw64) | LowerBound=-18 | UpperBound=0 | Result=(dBw56->)**

**└─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw56)**

**├─ CASE# Pattern=True\***

**│ └─ Variable.Write.WriteNumeric name=Speed | valueIn=-18**

**└─ CASE# Pattern=False**

**└─ (None)**

**================================================================================**

**TU\_fast Angle=(dNw51[Angle]->) | Mstop=(dBw36[Mstop]->) | usedBy=**[**m\_Thor**](http://ev3treevis.azurewebsites.net/#m_Thor)

**├─ StartBlock**

**├─ CommentBlock Comment=Debug mode -->**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=True**

**│ ├─ CommentBox Comment=Debug mode**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ CONNECTOR from=(dNw51[Angle]->) | to=(->dw29)**

**│ │ └─ CONNECTOR from=(dBw36[Mstop]->) | to=(->dw37)**

**│ └─ CASE# Pattern=False**

**│ ├─ Constant.Numeric valueOut=(dw29->) | valueIn=-90**

**│ └─ Constant.Boolean valueOut=(dw37->) | valueIn=True**

**├─ CommentBlock Comment=Irány beállítás -->**

**├─ Variable.Write.WriteNumeric name=Steering | valueIn=-100**

**├─ Wait.Wait HowLong=0.1**

**├─ Gyro.MeasureAngle Port=2 | Angle=(dNw47->)**

**├─ FORK# #=1**

**│ └─ ConfigurableWhileLoop InterruptName=TU | Stop=LoopCondition.Unlimited**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw17->) | name=Steering**

**│ ├─ Variable.Read.ReadNumeric valueOut=(dNw64a->) | name=Speed**

**│ ├─ CommentBox Comment=Motor block**

**│ ├─ Move.Unlimited Ports=B+C | Steering=(->dNw17) | Speed=(->dNw64a)**

**│ └─ Wait.Wait HowLong=0.01**

**├─ FORK# #=2**

**│ └─ ConfigurableWhileLoop InterruptName=TU | Stop=LoopCondition.Count | IterationsToRun=1**

**│ ├─ Timer.Reset Timer=1**

**│ ├─ ConfigurableWhileLoop InterruptName=TU | Stop=Timer.CompareTime | Timer=1 | Comparison=> | Threshold=5**

**│ │ └─ Wait.Wait HowLong=0.1**

**│ ├─ Sound.Note Note=A5 | Duration=0.1 | Volume=10 | PlayType=WaitForCompletion**

**│ └─ Interrupt InterruptName=TU**

**├─ FORK# #=3**

**│ ├─ ConfigurableWhileLoop InterruptName=TU | Stop=LoopCondition.Boolean | DoStop=(->dBw9)**

**│ │ ├─ Gyro.MeasureAngle Port=2 | Angle=(dNw21->)**

**│ │ ├─ Math.Advanced A=(->dw29) | B=(->dNw21) | C=(->dNw47) | D=0 | Equation=(a-(b-c)) | Result=(dNw45->)**

**│ │ └─ Range.Inside TestValue=(->dNw45) | LowerBound=-4 | UpperBound=4 | Result=(dBw9->)**

**│ ├─ Interrupt InterruptName=TU**

**│ └─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dw37)**

**│ ├─ CommentBox Comment=(Target angle - (last measurement - 1.measurement))**

**when the difference is between -2 and 2 we go out from the loop**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ Move.Stop Ports=B+C | BrakeAtEnd=True**

**│ │ ├─ Sound.Note Note=F6 | Duration=0.1 | Volume=10 | PlayType=PlayOnce**

**│ │ ├─ Wait.Wait HowLong=0.1**

**│ │ └─ Variable.Write.WriteNumeric name=Speed | valueIn=0**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**└─ ConfigurableWhileLoop InterruptName=TU | Stop=LoopCondition.Unlimited**

**├─ Gyro.MeasureAngle Port=2 | Angle=(dNw50->)**

**├─ CommentBox Comment=(Target angle - (last measurement - 1.measurement)) \* k value**

**├─ Math.Advanced A=(->dw29) | B=(->dNw50) | C=(->dNw47) | D=0.7 | Equation=(a-(b-c))\*d | Result=(dNw53->)**

**├─ CommentBox Comment=Speed counting**

**├─ Variable.Write.WriteNumeric name=Speed | valueIn=(->dNw53)**

**├─ Variable.Read.ReadNumeric valueOut=(dNw58->) | name=Speed**

**├─ Compare.GreaterThan x=(->dNw58) | y=35 | Result=(dBw29->)**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw29)**

**│ ├─ CASE# Pattern=True\***

**│ │ ├─ CommentBox Comment=Mstop**

**│ │ └─ Variable.Write.WriteNumeric name=Speed | valueIn=35**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**├─ CommentBox Comment=Max speed check**

**├─ Variable.Read.ReadNumeric valueOut=(dNw66->) | name=Speed**

**├─ Compare.LessThan x=(->dNw66) | y=-35 | Result=(dBw36->)**

**├─ CommentBox Comment=Min speed check**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw36)**

**│ ├─ CASE# Pattern=True\***

**│ │ └─ Variable.Write.WriteNumeric name=Speed | valueIn=-35**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**├─ Variable.Read.ReadNumeric valueOut=(dNw65->) | name=Speed**

**├─ Range.Inside TestValue=(->dNw65) | LowerBound=0 | UpperBound=18 | Result=(dBw52->)**

**├─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw52)**

**│ ├─ CASE# Pattern=True\***

**│ │ └─ Variable.Write.WriteNumeric name=Speed | valueIn=18**

**│ └─ CASE# Pattern=False**

**│ └─ (None)**

**├─ Variable.Read.ReadNumeric valueOut=(dNw64->) | name=Speed**

**├─ Range.Inside TestValue=(->dNw64) | LowerBound=-18 | UpperBound=0 | Result=(dBw56->)**

**└─ Switch.CaseSelector.Boolean Cases=[True,False] | Boolean=(->dBw56)**

**├─ CASE# Pattern=True\***

**│ └─ Variable.Write.WriteNumeric name=Speed | valueIn=-18**

**└─ CASE# Pattern=False**

**└─ (None)**