

## Invaders

[invader.zip](#)

*This module is part of the original MMBasic library. It is reproduced here with kind permission of Hugh Buckle and Geoff Graham. Be aware it may reference functionality which has changed or is deprecated in the latest versions of MMBasic.*

This is a version of the Space Invaders game for the Maximize. It was written by Fabrice Muller (France).

To play, unzip all the files into a directory on your SD card, change into the directory and then run the file INVADERS.BAS.

Space Bar = The fire button Left Arrow = Move your gun to the left Right Arrow = Move your gun to the right CTRL-C = Quit

This must be run using MMBasic 3.0A as it relies on some advanced features of this version to control the invaders.

It looks best if played on a composite PAL monitor but it will also run fine on a VGA monitor.

## INVADERS.BAS

```
'Space Invaders for the Maximize
Option base 1
Clear
'Initialise variables
Dim FireCoord(2)
Dim OldFireCoord(2)
NbCols = 11
NbInvFire = 5
SprWide = 16
MinX = 0 : MaxX = 120
Dim Invaders(5,NbCols)
Dim InvCols(NbCols)
Dim InvFireCoord(20,2)
Dim InvFireOld(20,2)
Dim InvLine(5)
Dim InvErase(5)
Dim InvLine$(5)
Dim InvChar$(5,2)
Dim InvScore(5)
InvScore(1) = 30
InvScore(2) = 30
InvScore(3) = 20
InvScore(4) = 20
InvScore(5) = 10
InvMiScore = 100
Mystery = 117
```

```
Canon = 118
CanonExp1 = 119
CanonExp2 = 120
Dx = -2
InvInterval = 200
InvMiInterval = 200
InvMiSpeed = 20
InvFireTimer = 25
InvFireSpeed = 25
FireSpeed = 5
MysteryOn = 0
Score = 0
Lives = 3
Level = 0
NextLevel = 1
InvaderX = 16
InvaderY = 40
OriginMaxY = 70
InvMaxY = OriginMaxY
MysteryX = 280
OldMysteryX = MysteryX
OldInvaderX = InvaderX
OldInvaderY = InvaderY
CanonX = 100
CanonY = 180
OldCanonX = CanonX
OldCanonY = CanonY
Fire = 0
InvHitB = 0
Cycle = 0
  'Get the Invaders font (16 x 13 pixels)
Font Load "invader.fnt" As #6
  'Get the start Screen font (8 x 8 pixels)
Font Load "invmenu.fnt" As #7
  'Setting the joystick pins
  'PIN 13 = LEFT
SetPin 13,2
  'PIN 14 = RIGHT
SetPin 14,2
  'PIN 15 = Fire Button 1
SetPin 15,2
  'We start here
Cls
GoSub StartScreen
Randomize Timer
Pause 500
Cls
Timer = 0
Counter1 = 0
Counter2 = 0
Counter3 = 0
```

```
Counter4 = 0
Counter5 = 0
Counter6 = 0
RedrawInvaders = 1
'General game loop
Do While 1
  'check if we draw a new level
  If NextLevel = 1 Then GoSub DrawNextLevel
  'check if we have to move the Invaders
  If Counter1 >= InvInterval Then
    Sound 300,50
    Timer = 0
    GoSub MoveInvaders
    RedrawInvaders = 1
    If Cycle = 0 Then Cycle = 1 Else Cycle = 0
  EndIf
  'check if we redraw the Invaders fire
  'at new positions
  If Counter2 >= InvFireSpeed Then
    Counter2 = 0
    GoSub InvFireShow
  EndIf
  'Check if one of the invader can fire
  If Counter3 >= InvFireTimer Then
    Counter3 = 0
    GoSub InvNewFire
  EndIf
  'Check if we activate the Mystery Ship
  If (Counter4 >= InvMiInterval) And (MysteryOn = 0) Then
    MysteryOn = 1
  EndIf
  'Check if we show the Mystery Ship
  If (MysteryOn = 1) And (Counter6 >= InvMiSpeed) Then
    Counter6 = 0
    GoSub MoveMystery
  EndIf
  char = Asc(Inkey$)
  'check if we move the Canon to Left
  If (char = 130) Then
    OldCanonX = CanonX
    CanonX = CanonX - 2
    If CanonX < 0 Then CanonX = 0
  EndIf
  'check if we move the Canon to Right
  If (char = 131) Then
    OldCanonX = CanonX
    CanonX = CanonX + 2
    If CanonX > 285 Then CanonX = 285
  EndIf
  'check if we Fire
  If (char = 32) And (Fire = 0) Then
```

```
GoSub CanonFire
EndIf
'check if we kill a Invaders
If (Fire = 1) And (Counter5 >= FireSpeed) Then
  Counter5 = 0
  OldFireCoord(1) = FireCoord(1)
  OldFireCoord(2) = FireCoord(2)
  FireCoord(2) = FireCoord(2) - 5
  If (FireCoord(2) <= ActMaxY) Then GoSub CheckKill
  GoSub CanonHitBunker
  If FireCoord(2) < 0 Then
    Line (OldFireCoord(1) , OldFireCoord(2)) - (OldFireCoord(1) ,
OldFireCoord(2) - 3),0
    Fire = 0
  EndIf
EndIf
'Actualize all Counters
Counter1 = Timer
Counter2 = Counter2 + 1
Counter3 = Counter3 + 1
Counter4 = Counter4 + 1
Counter5 = Counter5 + 1
Counter6 = Counter6 + 1
GoSub Redraw
Loop
'Draw a new level and set the variables
DrawNextLevel:
Level = Level + 1
If Level = 10 Then GoTo YouWin
InvInterval = 200 - ((Level - 1) * 10)
If InvInterval < 40 Then InvInterval = 40
InvFireTimer = 20 - ((Level - 1) * 2)
If InvFireTimer < 10 Then InvFireTimer = 10
InvaderX = 16
InvaderY = 21
CanonX = 100
CanonY = 180
Fire = 0
'Set the Invaders
For a = 1 To 5
  For b = 1 To NbCols
    Invaders(a , b) = 1
  Next b
Next a
For a = 1 To NbInvFire
  InvFireCoord(a,1) = -1
  InvFireCoord(a,2) = -1
Next a
For a = 1 To 5
  InvLine(a) = NbCols
  InvErase(a) = 1
```

```
InvChar$(a , 1) = "c"
InvChar$(a , 1) = "a"
InvChar$(a , 1) = "b"
InvChar$(a , 1) = "e"
InvChar$(a , 1) = "f"
InvChar$(a , 2) = "d"
InvChar$(a , 2) = "b"
InvChar$(a , 2) = "a"
InvChar$(a , 2) = "f"
InvChar$(a , 2) = "e"
Next a
InvMaxY = OriginMaxY
MinX = 0 : MaxX = 120
NbInvFire = 5 + (Level - 1)
InvFireTimer = 25 - ((Level - 1) * 2)
InvFireSpeed = 25 - (Level - 1)
'Draw the Level
Cls
GoSub ShowBunker
GoSub Redraw
NextLevel = 0
Return
MoveInvaders:
OldInvaderX = InvaderX
OldInvaderY = InvaderY
InvaderX = InvaderX + Dx
If InvaderX < MinX Then
    InvaderX = MinX
    OldInvaderY = InvaderY
    InvaderY = InvaderY + 5
    InvInterval = InvInterval - 10
    If InvInterval < 40 Then InvInterval = 40
    Dx = Abs(Dx)
EndIf
If InvaderX > MaxX Then
    InvaderX = MaxX
    OldInvaderY = InvaderY
    InvaderY = InvaderY + 5
    InvInterval = InvInterval - 10
    If InvInterval < 40 Then InvInterval = 40
    Dx = -Dx
EndIf
If InvaderY >= InvMaxY Then
    GoTo GameOver
EndIf
Return
MoveMystery:
OldMysteryX = MysteryX
MysteryX = MysteryX - 3
If MysteryX < 0 Then
    Line (OldMysteryX , 0) - (OldMysteryX + 16, 20) , 0,BF
```

```
MistryOn = 0
Counter4 = 0
MistryX = 280
EndIf
Return
Redraw:
'Draw the Invaders
Font #6
If RedrawInvaders = 1 Then
  For a = 1 To 5
    InvLine$(a) = ""
  Next a
  If Cycle = 0 Then
    For a = 1 To 5
      For b = 1 To NbCols
        If Invaders(a , b) <> 121 Then
          InvLine$(a) = InvLine$(a) + InvChar$(a , 1)
        Else
          InvLine$(a) = InvLine$(a) + Chr$(121)
        EndIf
      Next b
    Next a
  Else
    For a = 1 To 5
      For b = 1 To NbCols
        If Invaders(a , b) <> 121 Then
          InvLine$(a) = InvLine$(a) + InvChar$(a , 2)
        Else
          InvLine$(a) = InvLine$(a) + Chr$(121)
        EndIf
      Next b
    Next a
  EndIf
  For a = 1 To 5
    If InvLine(a) <> 0 Then
      oy1 = OldInvaderY + ((a - 1) * 20)
      oy2 = OldInvaderY + ((a - 1) * 20) + 13
      oy3 = InvaderY + ((a - 1) * 20)
      Line (OldInvaderX , oy1) - (OldInvaderX + (16 * NbCols) , oy2),0,BF
      Print @(InvaderX , oy3) InvLine$(a)
      ActMaxY = oy2
    EndIf
  Next a
  RedrawInvaders = 0
EndIf
'Draw the Canon
Line (OldCanonX , OldCanonY) - (OldCanonX + 16, OldCanonY + 13) , 0,BF
Print @(CanonX , CanonY) Chr$(Canon)
'Draw the Mistry Ship
If MistryOn = 1 Then
  Line (OldMistryX , 0) - (OldMistryX + 16, 20) , 0,BF
```

```
Print @(MysteryX , 0) Chr$(Mystery)
EndIf
'Draw the Canon Fire
If Fire = 1 Then
    Line (OldFireCoord(1) , OldFireCoord(2)) - (OldFireCoord(1) ,
OldFireCoord(2) - 3),0
    Line (FireCoord(1) , FireCoord(2)) - (FireCoord(1) , FireCoord(2) - 3),1
EndIf
'Draw Lives , Score and Level
Font #1
Print @(1,200) "Lives = "; Lives
Print @(100,200) "Score = "; Score
Print @(200,200) "Level = "; Level
Return
InvNewFire:
a = 1
ValidFire = 0
Do While a <= NbInvFire
    If InvFireCoord(a,1) = -1 And InvFireCoord(a,2) = -1 Then
        x = Int(Rnd * 10) + 1
        y = Int(Rnd * 4) + 1
        If Invaders(y , x) <> 121 Then ValidFire = 1
        If ValidFire = 1 Then
            InvFireCoord(a,1) = InvaderX + ((x - 1) * 16) + 8
            InvFireCoord(a,2) = InvaderY + (y * 20)
            InvFireOld(a,1) = InvFireCoord(a,1)
            InvFireOld(a,2) = InvFireCoord(a,2)
            a = NbInvFire + 1
        EndIf
    EndIf
    a = a + 1
Loop
Return
InvFireShow:
a = 1
Do While a <= NbInvFire
    Dead = 0
    InvHitB = 0
    If InvFireCoord(a,1) <> -1 And InvFireCoord(a,2) <> -1 Then
        InvFireOld(a,1) = InvFireCoord(a,1)
        InvFireOld(a,2) = InvFireCoord(a,2)
        InvFireCoord(a,2) = InvFireCoord(a,2) + 5
        x = InvFireCoord(a,1) : y = InvFireCoord(a,2)
        Line (InvFireOld(a,1) , InvFireOld(a,2)) - (InvFireOld(a,1) ,
InvFireOld(a,2) + 3),0
        Line (InvFireCoord(a,1) , InvFireCoord(a,2)) - (InvFireCoord(a,1) ,
InvFireCoord(a,2) + 3),1
        GoSub CheckDead
        If Dead = 1 Then
            Line (InvFireCoord(a,1) , InvFireCoord(a,2)) - (InvFireCoord(a,1) ,
InvFireCoord(a,2) + 3),0
```

```
    InvFireCoord(a,1) = -1
    InvFireCoord(a,2) = -1
    Dead = 0
EndIf
GoSub InvHitBunker
If y > (CanonY + 3) Then
    Line (InvFireCoord(a,1) , InvFireCoord(a,2)) - (InvFireCoord(a,1) ,
InvFireCoord(a,2) + 3),0
    InvFireCoord(a,1) = -1
    InvFireCoord(a,2) = -1
EndIf
EndIf
a = a + 1
Loop
Return
CanonFire:
Fire = 1
FireCoord(1) = CanonX + 8
FireCoord(2) = CanonY
OldFireCoord(1) = FireCoord(1)
OldFireCoord(2) = FireCoord(2)
GoSub beepFire
Return
CheckKill:
If (FireCoord(1) >= InvaderX) And (FireCoord(1) <= (InvaderX + 175)) Then
    FireColumn = Int((FireCoord(1) - InvaderX) / 16) + 1
    If ((FireCoord(2) - 3) >= InvaderY) And ((FireCoord(2) - 3) <= (InvaderY +
93)) Then
        FireLine = Int((FireCoord(2) - 3 - InvaderY) / 20) + 1
        If Invaders(FireLine , FireColumn) <> 121 Then
            Invaders(FireLine , FireColumn) = 121
            Score = Score + InvScore(FireLine)
            Line (OldFireCoord(1) , OldFireCoord(2)) - (OldFireCoord(1) ,
OldFireCoord(2) - 3),0
            Fire = 0
            GoSub beepKillInv
            GoSub CheckLevel
        EndIf
    EndIf
EndIf
If MisteryOn = 1 Then
    x1 = MisteryX
    x2 = MisteryX + 16
    y1 = 0
    y2 = 13
    If FireCoord(1) >= x1 And FireCoord(1) <= x2 And FireCoord(2) >= y1 And
FireCoord(2) <= y2 Then
        Score = Score + InvMiScore + Int(Rnd * 100) + 100
        Line (OldFireCoord(1) , OldFireCoord(2)) - (OldFireCoord(1) ,
OldFireCoord(2) - 3),0
        Line (OldMisteryX , 0) - (OldMisteryX + 16, 20) , 0,BF
```



```
    Fire = 0
    MisteryOn = 0
    Counter4 = 0
    MisteryX = 280
    GoSub beepKillMis
EndIf
EndIf
Return
CheckDead:
If (x >= CanonX) And (x <= (CanonX + 16)) And (y >= CanonY) And (y <=
(CanonY + 13)) Then
    Font #6
    'We loose one Canon
    Locate CanonX , CanonY : Print Chr$(119)
    Sound 800,200
    Pause 300
    Sound 600,200
    Pause 300
    Locate CanonX , CanonY : Print Chr$(120)
    Sound 300,200
    Pause 500
    Lives = Lives - 1
    Sound 500,200
    Pause 200
    Locate CanonX , CanonY : Print Chr$(121)
    Dead = 1
    'Check if we loose the game
    If Lives = 0 Then GoTo GameOver
Else
    Dead = 0
EndIf
Return
CanonHitBunker:
If (FireCoord(2) >= 160) And (FireCoord(2) <= 179) Then
    ax = FireCoord(1) : ay = FireCoord(2)
    If Pixel(ax , ay + 1) <> 0 Then
        Sound 1200,50
        For b = 1 To 10
            x = FireCoord(1) + ( Int(Rnd * 10) - 5)
            y = FireCoord(2) + ( Int(Rnd * 10) - 5)
            Pixel(x , y) = 0
        Next b
        Line (ax - 2 , ay - 2) - (ax + 2 , ay + 2) , 0 , BF
        Line (OldFireCoord(1) , OldFireCoord(2)) - (OldFireCoord(1) ,
OldFireCoord(2) - 3),0
        Fire = 0
    EndIf
EndIf
Return
InvHitBunker:
    'Check if Invaders hit the bunkers
```

```
If (y >= 160) And (y <= 179) Then
  If Pixel(x , y - 1) <> 0 Then
    'Invaders hit the bunkers
    Sound 1200,50
    For b = 1 To 10
      x1 = x + ( Int(Rnd * 10) - 5)
      y1 = y + ( Int(Rnd * 10) - 5)
      Pixel(x1 , y1) = 0
    Next b
    Line (x - 2 , y - 2) - (x + 2 , y + 2) , 0 , BF
    Line (InvFireCoord(a,1) , InvFireCoord(a,2)) - (InvFireCoord(a,1) ,
InvFireCoord(a,2) + 3),0
    InvFireCoord(a,1) = -1
    InvFireCoord(a,2) = -1
  EndIf
EndIf
Return
ShowBunker:
  'Show the 4 bunkers
  For a = 1 To 4
    Line (a * 60 , 160) - (a * 60 + 30 , 179) , 1 , BF
    Line (a * 60 + 10, 175) - (a * 60 + 20 , 180) , 0 , BF
  Next a
  Return
beepKillInv:
  Sound 1200,50
  Return
beepKillMis:
  Sound 1100,50
  Pause 50
  Sound 1300,50
  Pause 50
  Sound 1200,50
  Pause 50
  Sound 1400,50
  Return
beepFire:
  Sound 1000,50
  Return
CheckLevel:
  'Here we look if we killed all Invaders
  For l = 1 To 5
    InvLine(l) = 0
  Next l
  For l = 1 To NbCols
    InvCols(l) = 0
  Next l
  For l = 1 To 5
    For m = 1 To NbCols
      If Invaders (l , m) <> 121 Then
        InvLine(l) = InvLine(l) + 1
```

```
    InvCols(m) = InvCols(m) + 1
  EndIf
Next m
Next l
If InvLine(1) = 0 And InvLine(2) = 0 And InvLine(3) = 0 And InvLine(4) = 0
And InvLine(5) = 0 Then
  'We finish the Level
  NextLevel = 1
EndIf
For l = 1 To 5
  If (InvLine(l) = 0) And (InvErase(l) <> 0) Then
    InvErase(l) = 0
    Line (OldInvaderX , OldInvaderY + (( l - 1) * 20)) - (OldInvaderX + (16 *
NbCols) , OldInvaderY + (( l - 1) * 20) + 13),0,BF
  EndIf
Next l
If InvLine(5) = 0 Then InvMaxY = OriginMaxY + 20
If (InvLine(4) = 0) And (InvLine(5) = 0) Then InvMaxY = OriginMaxY + 40
If (InvLine(3) = 0) And (InvLine(4) = 0) Then InvMaxY = OriginMaxY + 60
If (InvLine(2) = 0) And (InvLine(3) = 0) Then InvMaxY = OriginMaxY + 80
For l = 1 To NbCols
  If InvCols(l) = 0 Then
    MinX = 0 - (SprWide * l)
  Else
    l = NbCols + 1
  EndIf
Next l
For l = NbCols To 1 Step - 1
  If InvCols(l) = 0 Then
    MaxX = 120 + (SprWide * (NbCols - l))
  Else
    l = 0
  EndIf
Next l
Return
'You loose the game
GameOver:
Font #1
Cls
Print @(120,100) "G A M E - O V E R"
Pause 5000
Run
'You win the game at Level 10
YouWin:
Font #1
Cls
Print @(120,100) "Y O U - W I N"
Pause 5000
Run
'Start Screen
StartScreen:
```

```
Cls
Font #1
Print @(140,50) "PLA"
Font #7
Print @(159,50) "Y"
Font #1
Print @(120,70) "SPACE INVADERS"
Print @(100,90) "*SCORE ADVANCE TABLE*"
Font #6
Print @(115,105) Chr$(117)
Font #1
Print @(132,108) "=? MYSTERY"
Font #6
Print @(115,125) "c"
Font #1
Print @(132,128) "=30 POINTS"
Font #6
Print @(115,145) "a"
Font #1
Print @(132,148) "=20 POINTS"
Font #6
Print @(115,165) "e"
Font #1
Print @(132,168) "=10 POINTS"
Print @(110,200) "PRESS FIRE TO START"
Cnt = 0
Animate = 0
AnimX = 290
OldAnimX = AnimX
Spr = 90
Do While (Inkey$ = "")
  Cnt = Cnt + 1
  If (Cnt > 3000) And (Animate = 0) Then
    Animate = 1
    Font #7
  EndIf
  If Animate = 1 Then
    'Go to the reversed 'Y'
    If Spr = 90 Then Spr = 91 Else Spr = 90
    px1 = OldAnimX - 1 : px2 = OldAnimX + 12
    Line (px1 , 50) - (px2 , 61) , 0 , BF
    Pause 5
    Print @(AnimX , 50) Chr$(Spr);
    Pause 5
    OldAnimX = AnimX
    AnimX = AnimX - 1
    If AnimX <= 167 Then
      Animate = 2
      OldAnimX = OldAnimX - 8
      AnimX = AnimX - 8
    EndIf
  EndIf
End While
```

```
EndIf
If Animate = 2 Then
  'Take the reversed 'Y' away
  If Spr = 90 Then Spr = 91 Else Spr = 90
  Font #7
  px1 = OldAnimX - 1 : px2 = OldAnimX + 22
  Line (px1 , 50) - (px2 , 61) , 0 , BF
  Pause 5
  Locate AnimX , 50 : Print "Y"; Chr$(Spr);
  Pause 5
  OldAnimX = AnimX
  AnimX = AnimX + 1
  If AnimX >= 282 Then Animate = 3
EndIf
If Animate = 3 Then
  'Put the good 'Y' in place
  If Spr = 90 Then Spr = 91 Else Spr = 90
  px1 = OldAnimX - 1 : px2 = OldAnimX + 22
  Line (px1 , 50) - (px2 , 61) , 0 , BF
  Pause 5
  Font #1
  Print @(AnimX , 50) "Y";
  Font #7
  Print @(AnimX + 8 , 50) Chr$(Spr);
  Pause 5
  OldAnimX = AnimX
  AnimX = AnimX - 1
  If AnimX <= 158 Then
    Animate = 4
    OldAnimX = OldAnimX + 8
    AnimX = AnimX + 8
  EndIf
EndIf
If Animate = 4 Then
  'Invader go away alone
  If Spr = 90 Then Spr = 91 Else Spr = 90
  px1 = OldAnimX - 1 : px2 = OldAnimX + 12
  Line (px1 , 50) - (px2 , 61) , 0 , BF
  Pause 5
  Print @(AnimX , 50) Chr$(Spr);
  Pause 5
  OldAnimX = AnimX
  AnimX = AnimX + 1
  If AnimX >= 290 Then
    Animate = 5
    Line (AnimX - 1 , 50) - (AnimX + 12, 61) , 0 , BF
  EndIf
EndIf
If Cnt > 4000 Then Cnt = 0
Loop
Return
```

From:

<https://fruitoftheshed.com/wiki/> - **FotS**

Permanent link:

[https://fruitoftheshed.com/wiki/doku.php?id=mmbasic\\_original:invaders](https://fruitoftheshed.com/wiki/doku.php?id=mmbasic_original:invaders)

Last update: **2024/01/19 09:39**

