```
RegionPlot[x^2 + y^3 < 2, {x, -2, 2}, {y, -2, 2}]
```

In[64]:=
```
Manipulate[Module[{
   r = 1 / 40 (*radius of start and end markers*),
   thickness = 0.002,
   (*left robot*) ps1, pe1,
   (*right robot*) ps2, pe2,
   (*current particle position*) pm1, pm2, offset,
   c1 = Blue, c2 = Magenta},
  (*ensure robots do not overlap*)
  If[EuclideanDistance[s1, s2] < ϵ,
   If[s1[[1]] < s2[[1]], If[s1[[1]] > 2 ϵ, s1[[1]] = s2[[1]] - ϵ, s2[[1]] = s1[[1]] + ϵ],
    If[s2[[1]] > 2 ϵ, s2[[1]] = s1[[1]] - ϵ, s1[[1]] = s2[[1]] + ϵ]]];
  If[EuclideanDistance[e1, e2] < ϵ, If[e1[[1]] < e2[[1]],
    If[e1[[1]] > 2 ϵ, e1[[1]] = e2[[1]] - ϵ, e2[[1]] = e1[[1]] + ϵ],
    If[e2[[1]] > 2 ϵ, e2[[1]] = e1[[1]] - ϵ, e1[[1]] = e2[[1]] + ϵ]]];
  (*ensure ps1 is leftmost*)
  {ps1 , pe1, ps2, pe2} = If[s1[[1]] < s2[[1]] || (s1[[1]] == s2[[1]] && s1[[2]] < s2[[2]]) ,
    {s1 , e1, s2, e2}, {s2, e2, s1 , e1}];
  Graphics[{
    (*workspace*)
    {Darker[Red], Rectangle[-0.025 {1, 1}, 1.025 {1, 1}]},
    {Lighter[Gray, 0.8], Rectangle[{0, 0}, {1, 1}]},
    {White, Rectangle[{ϵ, ϵ}, {1 - ϵ, 1 - ϵ}]},
    {Lighter[Gray, 0.7], Opacity[0.8], Disk[ps2, ϵ]},
    {Lighter[Gray, 0.7], Opacity[0.8], Disk[pe2, ϵ]},
    PointSize[0.01],
    Arrowheads[.02],
    Thickness[thickness],
    (*starting poses, dashed line from start to end*)
    {c1, { Opacity[.3], Dashed, Arrow[{ps1, pe1}]}, Point@ps1,
     EdgeForm[Directive[c1, Thickness[thickness]]], FaceForm[None],
     Rectangle[ps1 - 2 / 3 r {1, 1}, ps1 + 2 / 3 r {1, 1}], Circle[pe1, r]},
    {c2, { Opacity[.3], Dashed, Arrow[{ps2, pe2}]}, Point@ps2,
     EdgeForm[Directive[c2, Thickness[thickness]]], FaceForm[None],
     Rectangle[ps2 - 2 / 3 r {1, 1}, ps2 + 2 / 3 r {1, 1}], Circle[pe2, r]}
    , Inset[RegionPlot[x < -3, {x, -1, 1}, {y, -1, 1}, Epilog → {
        (*reachable region*)
        {LightBlue, EdgeForm[Blue],
         Rectangle[{ps2[[1]] - 1 - ps1[[1]], ps2[[2]] - ps1[[2]]}, {1, 0}]
        },
        {LightGreen, EdgeForm[Blue], Opacity[0.5],
         Rectangle[{0, -1}, {ps2[[1]] - ps1[[1]], 1 + ps2[[2]] - ps1[[2]]}],
         Black, Text["Reachable Region", {(1 + ps2[[1]] + ϵ - 1) / 2, (ps2[[2]] - ps1[[2]]) / 2}]
        },
        (*current deltas*)
        Red, Rectangle[ps2 - ps1 - 4 / 3 r {1, 1}, ps2 - ps1 + 4 / 3 r {1, 1}],
        (*goal deltas*)
        Green,
        Disk[pe2 - pe1, 2 r]
```

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        }, FrameLabel → {"Δx", "Δy"}, ImageSize → 250], {1.5, .5}]

    }, ImageSize → 600, PlotRange → {{-0.05, 2.05}, {-.05, 1.05}}]


],
Row[{
  Control@
   {{ϵ, 1 / 1000, "ϵ"}, 1 / 1000, 1 / 10, 1 / 1000, Slider, Appearance → "Labeled"}}],
{{s1, {3 / 4, 1 / 5}}, {0, 0} + ϵ, {1, 1} - ϵ, Locator, Appearance → None},
{{s2, {1 / 4, 4 / 5}}, {0, 0} + ϵ, {1, 1} - ϵ, Locator, Appearance → None},
{{e1, {2 / 3, 1 / 2}}, {0, 0} + ϵ, {1, 1} - ϵ, Locator, Appearance → None},
{{e2, {1 / 2, 2 / 3}}, {0, 0} + ϵ, {1, 1} - ϵ, Locator, Appearance → None}
, SaveDefinitions → True
]
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Out[64]=