```
///////////////////////////////////////////////////////////////////////////
//                                                                       //
//   The following program uses a rectangle and circle method,  that draws   //
//     a rectangle and a circle respectively out of characters, to draw a    //
//                                train.                                  //
//                                                                       //
//                             WRITTEN BY:                               //
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//                                                                       //
///////////////////////////////////////////////////////////////////////////

class Picture
{
   private int cmax, rmax;
   private char draw[][] = new char[1000][1000];

   //------------------------------------------------------------------
   //  The Picture constructor sets the limits for the picture and
   //  puts a given character as the background.
   //------------------------------------------------------------------
   public Picture (int rmax, int cmax, char background)
   {
      this.rmax = rmax;
      this.cmax = cmax;

      for (int j = 0; j < cmax; j++)
         for (int i = 0; i < rmax; i++)
            draw [j][i] = background;
   }

   //------------------------------------------------------------------
   //  Draws a rectangle at given location with a given character.
   //------------------------------------------------------------------
   public void rectangle (int rlo, int rhi, int clo, int chi, char color)
   {
      if (rhi > rmax)
        rhi = rmax;

      if (chi > cmax)
        chi = cmax;

      for (int j = clo; j <= chi; j++)
         for (int i = rlo; i <= rhi; i++)
            draw [j][i] = color;
   }

   //------------------------------------------------------------------
   //   Draws a circle at a given location with a given radius and
   //   character.
   //------------------------------------------------------------------
   public void circle (double rc, double cc, double radius, char color)
   {
      double squareRoot;

      for (int j = 0; j < cmax; j++)
      {
         for (int i = 0; i < rmax; i++)
         {
            squareRoot = Math.sqrt((Math.pow(((double)i - rc), 2)) + (Math.pow(((double)j - cc), 2)));
            if (squareRoot <= radius)
               draw[j][i] = color;

         }
      }
   }

   //------------------------------------------------------------------
   //  Print the array of characters "Picture".
   //------------------------------------------------------------------
   public void print()
   {
      for (int j = 0; j < cmax; j++)
      {
         for (int i = 0; i < rmax; i++)
            System.out.print(draw [j][i]);

         System.out.println();
      }
   }
```

```java
    //---------------------------------------------------------------

}// end of class Picture

/////////////////////////////////////////////////////////////////////////

class Hw10
{
    public static void main(String[] args)
    {
        Picture p = new Picture(75, 45, ' ');

        p.rectangle(15, 26, 12, 14, '#');
        p.rectangle(18, 23, 15, 20, '#');

        p.circle(5.0, 25.0, 5.0, '#');
        p.circle(70.0, 25.0, 5.0, '#');

        p.rectangle(5, 70, 20, 30, '#');
        p.rectangle(0, 75, 30, 31, '#');

        p.rectangle(8, 12, 32, 34, '=');

        p.circle(25.0, 35.0, 3.0, '@');
        p.circle(45.0, 35.0, 3.0, '@');
        p.circle(65.0, 35.0, 3.0, '@');

        p.circle(25.0, 35.0, 1.0, 'O');
        p.circle(45.0, 35.0, 1.0, 'O');
        p.circle(65.0, 35.0, 1.0, 'O');

        p.rectangle(13, 15, 33, 33, '*');
        p.rectangle(15, 17, 34, 34, '*');
        p.rectangle(17, 19, 35, 35, '*');
        p.rectangle(19, 25, 36, 36, '*');
        p.rectangle(25, 45, 36, 36, '*');
        p.rectangle(45, 52, 36, 36, '*');
        p.rectangle(51, 59, 35, 35, '*');
        p.rectangle(58, 65, 34, 34, '*');

        p.rectangle(56, 62, 22, 26, ' ');

        p.circle(21.0, 8.0, 3.0, 's');
        p.circle(44.0, 5.0, 4.0, 's');
        p.circle(67.0, 3.0, 5.0, 's');

        p.print();
    }
}// end of class Hw10

/////////////////////////////////////////////////////////////////////////
```