

```
int speedin = 2;
int smokein = 4;
int chuffout = 7;
int smokeblower = 10;
int speedx = 0;
int oldspeed = 0;
int speedvalue = 0;
int speedreset = 950; //chuff total pulses
int chuffpulse = 0;
int smokeold = 0;
int smokelow = 100;
int smokehigh = 255;
int chufflength = 40;
int smokelength = 500;
int smokeon = 0;
int smokeenable = 0;
long smoketimer = 0;
int smokestorage = 0;
```

```
void setup ()
```

```
{
  pinMode (speedin,INPUT);
  digitalWrite (speedin,HIGH);
  pinMode (smokein,INPUT);
  digitalWrite (smokein,HIGH);
  pinMode (chuffout,OUTPUT);
}
```

```
void loop ()
```

```
{
  if ((digitalRead (speedin) == LOW) && (oldspeed == 1))
  {
    speedvalue = (speedvalue + 1);
    oldspeed = 0;
  }
  if (digitalRead (speedin) == HIGH)
  {
    oldspeed = 1;
  }
  if (speedvalue > speedreset)
  {
    speedvalue = 0;
    chuffpulse = 0;
  }
  if (chuffpulse < (chufflength + 1 ))
  {
    chuffpulse = (chuffpulse + 1);
  }
  if (chufflength > chuffpulse)
  {
    digitalWrite (chuffout,LOW);
  }
}
```

```
}  
else  
{  
    digitalWrite (chuffout,HIGH);  
}  
if (smoketimer > 300000)  
{  
    smokeenable = 0;  
}  
else  
{  
    smokeenable = 1;  
}  
if (smoketimer > 350000)  
{  
    smoketimer = 350000;  
}  
if (speedvalue < smokelength)  
{  
    smokestorage = smokehigh;  
    smoketimer = (smoketimer + 1);  
}  
if (speedvalue > smokelength)  
{  
    smokestorage = smokelow;  
    smoketimer = 0;  
}  
if (smokeenable == 0)  
{  
    smokestorage = smokelow;  
}  
if (digitalRead (smokein) == HIGH)  
{  
    smokestorage = 0;  
}  
analogWrite (smokeblower,smokestorage);  
}
```