

1. What is the significance of FontMetrics in AWT.

→ The AWT includes the FontMetrics class, which encapsulates various information about a font like Height, Baseline, Ascent, Descent and Leading.

i) Height: The top-to-bottom size of the tallest character in font.

ii) Baseline: The line that the bottom of characters are aligned to.

iii) Ascent: The distance from the baseline to top of a character.

iv) Descent: The descent from the baseline to bottom of character.

v) Leading: The distance between bottom of one line of text and the top of the next.

2. Discuss AWT FontMetrics with Methods.

→ FontMetrics are the measurements of characters in a particular font, which allow to evenly space and uniformly align lines of text.

1) `int charWidth(char c)`: Returns width of `c`.

2) `int charWidth(int c)`: Returns width of `c`.

3) `int getAscent()`: Returns the Ascent of the font.

4) `int getDescent()`: Returns the Descent of the font.

5) `Font getFont()`: Returns the font.

- 6 `int getLeading()`: Returns space between lines of text.
- 7 `int getMaxAscent()`: Returns maximum ascent.
- 8 `int getMaxDescent()`: Returns maximum descent.
- 9 `String toString()`: Return string equivalent of invoking object.
- 10 `int getMaxAdvance()`: Return width of the widest character - 1 is returned if this value is not available.

3 Write a program to display name in one line, your roll number and stream in same line and address in next line using fontmetrics.

```

→
import java.applet.*;
import java.awt.*;
public class NameRollAddress extends Applet
{
    int curX = 0, curY = 0;
    public void init()
    {
        Font f = new Font("Arial", Font.PLAIN, 12); setFont(f);
    }
    public void paint(Graphics g)
    {
        FontMetric fm = g.getFontMetrics();
    }
}

```



```
nextLine("Name: Narendranath Panda.", g);  
nextLine("Roll-No: 10014033.", g);  
sameLine("Stream: Computer Science & Technology.", g);  
nextLine("Address: Taki, West Bengal, INDIA." g);
```

```
    curX = curY = 0;  
}  
void nextLine(string s, Graphics g)  
{  
    FontMetrics fm = g.getFontMetrics();  
    curY += fm.getHeight();  
    curX = 0;  
    g.drawString(s, curX, curY);  
    curX = fm.stringWidth(s);  
}
```

```
void sameLine(string s, Graphics g)  
{  
    FontMetrics fm = g.getFontMetrics();  
    g.drawString(s, curX, curY);  
    curX += fm.stringWidth(s);  
}  
}
```

NameRollAddress.java X NameRollAddress.html 4

E: > ALL _ ASSIMENT -KPC > 6_TH SEMESTER > Advance JAVA_MKG > NameRollAddress.java

```

1  import java.applet.*;
2  import java.awt.*;
3  public class NameRollAddress extends Applet
4  {
5      int curX=0, curY=0;
6      public void init()
7      {
8          Font f = new Font("Arial", Font.PLAIN, 12); setFont(f);
9      }
10     public void paint(Graphics g)
11     {
12         FontMetrics fm = g.getFontMetrics();
13         nextLine("Name : Narendra Nath Panda.", g);
14         nextLine(" Roll_No : 10014033.", g);
15         sameLine(" Stream : Computer Science & Technology.", g);
16         nextLine("Address : Taki, West Bengal, INDIA.", g);
17
18         curX = curY = 0;
19     }
20     void nextLine(String s, Graphics g)
21     {
22         FontMetrics fm = g.getFontMetrics();
23         curY += fm.getHeight();
24         curX = 0;
25         g.drawString(s, curX, curY);
26         curX = fm.stringWidth(s);
27     }
28     void sameLine(String s, Graphics g)
29     {
30         FontMetrics fm = g.getFontMetrics();
31         g.drawString(s, curX, curY);
32         curX += fm.stringWidth(s);
33     }
34 }
35

```

C:\Windows\System32\cmd.exe - appletviewer NameRollAddress.html

Microsoft Windows [Version 10.0.19042.985]
(c) Microsoft Corporation. All rights reserved.

E:\ALL _ ASSIMENT -KPC\6_TH SEMESTER\Advance JAVA_MKG>javac NameRollAddress.java
Note: NameRollAddress.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.

E:\ALL _ ASSIMENT -KPC\6_TH SEMESTER\Advance JAVA_MKG>appletviewer NameRollAddress.html
Warning: Applet API and AppletViewer are deprecated.

Applet Viewer: MultiLine

Applet

Name : Narendra Nath Panda.
Roll_No : 10014033. Stream : Computer Science & Technology.
Address : Taki, West Bengal, INDIA.

Applet started.