

<b>N o</b>	<b>MODULE NAME</b>	<b>DESCRIPTION</b>	<b>DEMONSTRATION PROCEDURE</b>	<b>TEST AND DEBUGGING</b>
1	<b>Ntsc_to_zbt</b>	<p>Stores pixel information as RGB into the on-board ZBT memory. This module also has the RGB to HSV converter.</p> <p><u>Completion</u> <u>Status:</u> Completed &amp; tested</p> <p><u>Time Taken for completion:</u> 4 days</p>	<ul style="list-style-type: none"> <li>The demonstration of this module is through the visible color picture on the screen.</li> <li>The functionality of the RGB to HSV convertor is checked by averaging the output of the module for 64 clock cycles and then making the hue ,saturation and value for a particular pixel appear on the hexadecimal display.</li> </ul>	<ul style="list-style-type: none"> <li><b>Test:</b> The pixel for which the HSV value is displayed on the Hex-display is selected by developing a cursor and making it point to that particular pixel on the screen.</li> </ul>
2	<b>Threshold_filter</b>	<p>Filters the incoming Pixels with color Thresholds in order to find the position of the human joints.in this module same color(red) is detected</p> <p><u>Completion</u> <u>Status:</u> Completed , to be tested</p> <p><u>Time Taken for completion:</u> 7 days</p>	<ul style="list-style-type: none"> <li>Firstly, this module will be demonstrated by display of the red color pixels on the screen where ever the hue ,saturation and value conditions are satisfied for a selected color.</li> <li>This Module will also be demonstrated by displaying a different colored pixel for detected center of masses on the display.</li> </ul>	<ul style="list-style-type: none"> <li><b>Test:</b> Initial test done using Modelsim.</li> <li><b>Debugging:</b> The code can be debugged by outputting the calculated points and comparing them with the expected points.</li> </ul>
3	<b>Line_drawer</b>	<p>Takes 2 points in 2d Space as the inputs and</p>	<ul style="list-style-type: none"> <li>Display the line on the screen for a particular input.</li> </ul>	<ul style="list-style-type: none"> <li><b>Test:</b> Initial test done using modelsim, later the line was</li> </ul>

	<p>connects them with a line of desired colour. It also implements Anti aliasing of The line.</p> <p><u>Completion</u> <u>Status:</u> Completed &amp; tested</p> <p><u>Time Taken for completion:</u> 4 days</p>		<p>displayed on the screen.</p> <ul style="list-style-type: none"> <li>• <b>Debugging:</b> Was not necessary.</li> </ul>
4	<p><b>Points_decider</b></p> <p>With the position information Of the human joints and artificial intelligence, The dots_connector module decides The respective arm ,leg and torso points.</p> <p><u>Completion</u> <u>Status:</u> Completed &amp; tested</p> <p><u>Time Taken for completion:</u> 3 days</p>	<ul style="list-style-type: none"> <li>• The demonstration of this module, will be done by giving six valid, arbitrary points as the input to the module integrated with the line_drawer module.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Test:</b> Using modelsim.</li> <li>• <b>Debugging:</b> Having pre-calculated points and mapping them to modelsim outputs.</li> </ul>
5	<p><b>Connector</b></p> <p>This module takes the arm, leg and torso information from the points_decider module and instantiates The line_drawer module multiple times to make a</p>	<ul style="list-style-type: none"> <li>• This module will be demonstrated by integrating it points_decider and line_drawer module.</li> <li>• It will be done by giving six valid, arbitrary points as the input and assigning the</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Test:</b> This module really does not need any testing as it is just a combinations of instantiations of other modules.</li> </ul>

meaningful  
Skeleton.

output to the  
display.

Completion  
Status:  
Completed &  
tested

Time Taken for  
completion: 1  
days

6 **Double\_Buffer**

This module uses  
the ZBT memory  
and uses two  
buffers to exhibit  
an uninterrupted  
display on the  
screen.

- This module will be  
demonstrated by  
showing the speed  
of the system, when  
the whole system is  
integrated.

- **Test:** Using  
modelsim.  
**Debugging:**  
Using modelsim  
and making  
sure, the data is  
written and read  
at the same  
time.

Completion  
Status: To be  
Completed

Time Taken for  
completion: N/A

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