ECE-3502 IoT Domain Analyst LAB(L9+L10)

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Lab 7

Task:

— Drug consumption level notification through Email
— The drug consumption is identified three levels
  • High
  • Medium
  • Low
— The consumption is decided based on patient's three parameters
  • HR
  • SpO2
  • BP
— If all the values are high alert the indication as "High"
— If all the values are Low alert the indication as "Low".
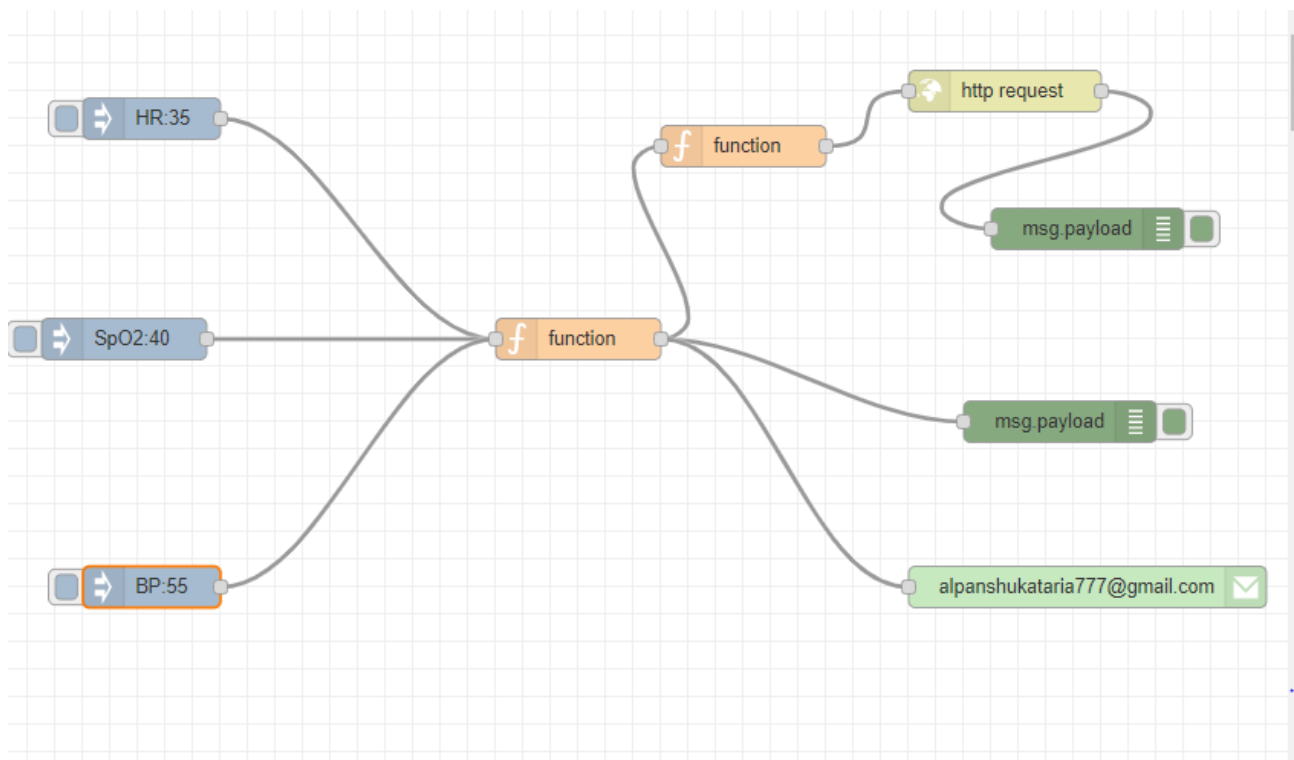— Other cases it is "medium".

Message notification
Simulate the alert indication in Dashboard of ThingsBoard

— Mention the subject as "Drug consumption level reg".
— Message as HR:80,SpO2:85,BP:100,consumption level: Medium

Parameter	Normal values	Low	High
HR	Between 60 to 90 beats per minute	<60	>90
SpO2	Between 80 to 90	<80	>90
BP	Between 90mm Hg and 120mm Hg	<90	>120

Flow:

Nodes:

Function Node1 Code:

```
context.data=context.data || {};
switch (msg.topic) {
    case "HR":
        context.data.HR=msg.payload;
        msg=null;
        break;
    case "SpO2":
        context.data.SpO2=msg.payload;
        msg=null;
        break;
    case "BP":
        context.data.BP=msg.payload;
        msg=null;
        break;
    default :
        msg=null;
        break;
}
```

```
if(context.data.HR !=null && context.data.SpO2 !=null && context.data.BP !=null){
    if(context.data.HR <60 && context.data.SpO2 <80 && context.data.BP <90){
        var ans1= "HR:"+context.data.HR+",SpO2:"+context.data.SpO2+",BP:"+context.data.BP+",consumption
level:Low";
        context.data=null;
        return {payload:ans1,topic:"Drug consumption level reg"};
    }
    else if(context.data.HR >90 && context.data.SpO2 >90 && context.data.BP >120){
        var ans2= "HR:"+context.data.HR+",SpO2:"+context.data.SpO2+",BP:"+context.data.BP+",consumption
level:High";
        context.data=null;
        return {payload:ans2,topic:"Drug consumption level reg"};
    }
    else{
        var ans3= "HR:"+context.data.HR+",SpO2:"+context.data.SpO2+",BP:"+context.data.BP+",consumption
level:Medium";
        context.data=null;
        return {payload:ans3,topic:"Drug consumption level reg"};
    }
}
else return msg;
```
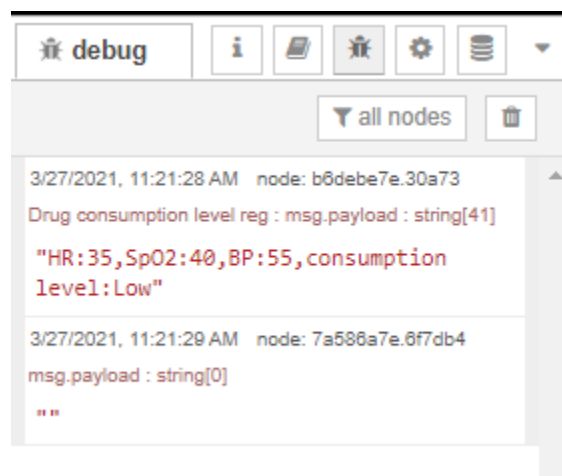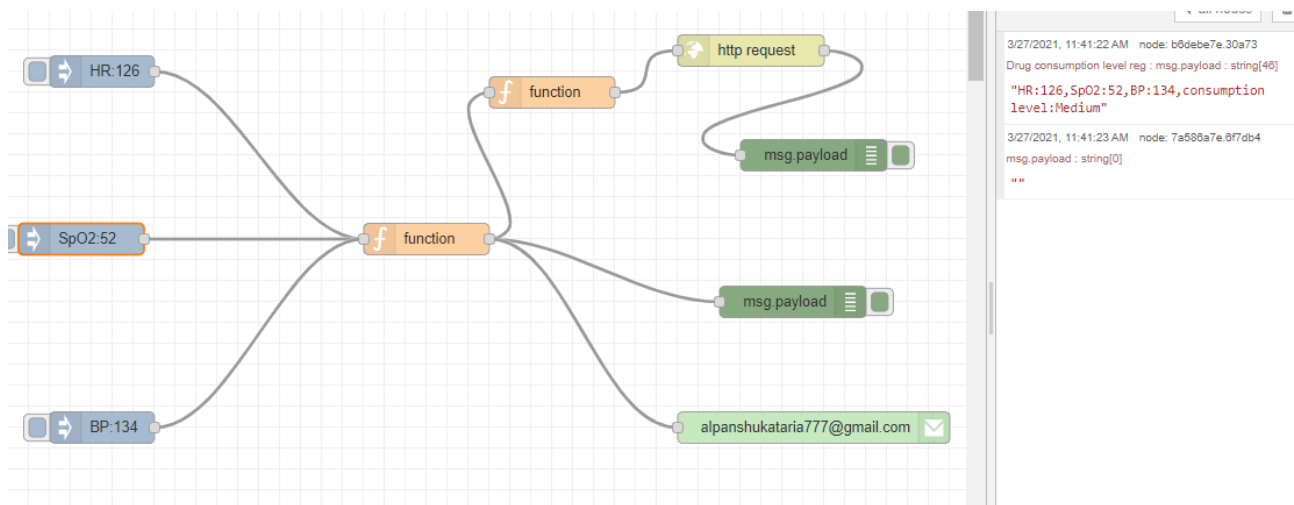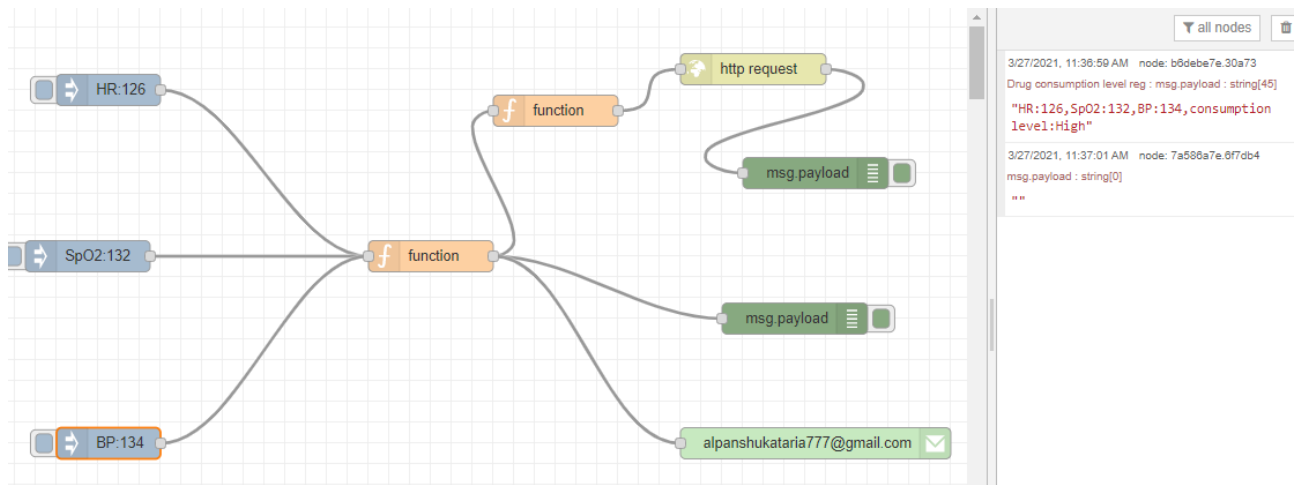
Function Node2 code:

```
var op= {"Drug consumption level reg":msg.payload};
return {payload:op};
```

Output Screenshots:

Flow and debug monitor:

3/27/2021, 11:36:59 AM   node: b6debe7e.30a73
Drug consumption level reg : msg.payload : string[45]
"HR:126,SpO2:132,BP:134,consumption
level:High"
3/27/2021, 11:37:01 AM   node: 7a586a7e.6f7db4
msg.payload : string[0]
""

3/27/2021, 11:41:22 AM   node: b6debe7e.30a73
Drug consumption level reg : msg.payload : string[46]
"HR:126,SpO2:52,BP:134,consumption
level:Medium"
3/27/2021, 11:41:23 AM   node: 7a586a7e.6f7db4
msg.payload : string[0]
""

3/27/2021, 11:21:28 AM   node: b6debe7e.30a73
Drug consumption level reg : msg.payload : string[41]
"HR:35,SpO2:40,BP:55,consumption
level:Low"
3/27/2021, 11:21:29 AM   node: 7a586a7e.6f7db4
msg.payload : string[0]
""

Thingsboard:

Email notification:

JSON FLOW:

[{"id":"fdf11794.5db108","type":"tab","label":"Flow 8","disabled":false,"info":""},
{"id":"aee36424.493008","type":"function","z":"fdf11794.5db108","name":"","func":"context.data=context.data || {};\
nswitch (msg.topic) {\n   case \"HR\":\n   context.data.HR=msg.payload;\n   msg=null;\n   break;\n
case \"SpO2\":\n   context.data.SpO2=msg.payload;\n   msg=null;\n   break;\n   case \"BP\":\n
context.data.BP=msg.payload;\n   msg=null;\n   break;\n   default :\n   msg=null;\n   break;\n}\n\n\
nif(context.data.HR !=null && context.data.SpO2 !=null && context.data.BP !=null){\n   if(context.data.HR <60 &&
context.data.SpO2 <80 && context.data.BP <90){\n   var
ans1= \"HR:\"+context.data.HR+\",SpO2:\"+context.data.SpO2+\",BP:\"+context.data.BP+\",consumption level:Low\";\n
context.data=null;\n   return {payload:ans1,topic:\"Drug consumption level reg\"};\n   }\n   else if(context.data.HR
>90 && context.data.SpO2 >90 && context.data.BP >120){\n   var

ans2= \"HR:\"+context.data.HR+\",SpO2:\"+context.data.SpO2+\",BP:\"+context.data.BP+\",consumption level:High\";\n context.data=null;\n return {payload:ans2,topic:\"Drug consumption level reg\"};\n }\n else{\n var ans3= \"HR:\"+context.data.HR+\",SpO2:\"+context.data.SpO2+\",BP:\"+context.data.BP+\",consumption level:Medium\";\n context.data=null;\n return {payload:ans3,topic:\"Drug consumption level reg\"};\n }\n}\nelse return msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","x":480,"y":240,"wires": [["b6debe7e.30a73","33f5c546.f44caa","1020981f.1e38c8"]]},

{"id":"6ec8084e.2f89e8","type":"inject","z":"fdf11794.5db108","name":"","props":[{"p":"payload"}, {"p":"topic","vt":"str"}],"repeat":"","crontab":"","once":false,"onceDelay":0.1,"topic":"HR","payload":"126","payloadTyp e":"str","x":170,"y":80,"wires":[["aee36424.493008"]]},

{"id":"752a6d1f.3288c4","type":"inject","z":"fdf11794.5db108","name":"","props":[{"p":"payload"}, {"p":"topic","vt":"str"}],"repeat":"","crontab":"","once":false,"onceDelay":0.1,"topic":"SpO2","payload":"145","payloadT ype":"str","x":150,"y":240,"wires":[["aee36424.493008"]]},

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{"id":"7a586a7e.6f7db4","type":"debug","z":"fdf11794.5db108","name":"","active":true,"tosidebar":true,"console":fals e,"tostatus":false,"complete":"false","statusVal":"","statusType":"auto","x":830,"y":180,"wires":[]},

{"id":"1020981f.1e38c8","type":"e-mail","z":"fdf11794.5db108","server":"smtp.gmail.com","port":"465","secure":true,"tls":true,"name":"alpanshukataria7 77@gmail.com","dname":"","x":850,"y":420,"wires":[]},{"id":"9d5e4336.d9f","type":"http request","z":"fdf11794.5db108","name":"","method":"POST","ret":"txt","paytoqs":"ignore","url":"https:// demo.thingsboard.io/api/v1/XmrrJ8uzmM3ThebEnmpL/ telemetry","tls":"","persist":false,"proxy":"","authType":"","x":790,"y":60,"wires":[["7a586a7e.6f7db4"]]},

{"id":"b6debe7e.30a73","type":"debug","z":"fdf11794.5db108","name":"","active":true,"tosidebar":true,"console":false ,"tostatus":false,"complete":"false","statusVal":"","statusType":"auto","x":830,"y":300,"wires":[]},

{"id":"33f5c546.f44caa","type":"function","z":"fdf11794.5db108","name":"","func":"var op= {\"Drug consumption level reg\":msg.payload};\nreturn {payload:op};\n","outputs":1,"noerr":0,"initialize":"","finalize":"","x":600,"y":100,"wires": [["9d5e4336.d9f"]]}]