

EXPERIMENT 2

DESIGN DFA AND ALGORITHM

PROJECT TITLE: WEIGHT CONVERSION

GROUP DETAILS:

IT041 HIREN JADAV

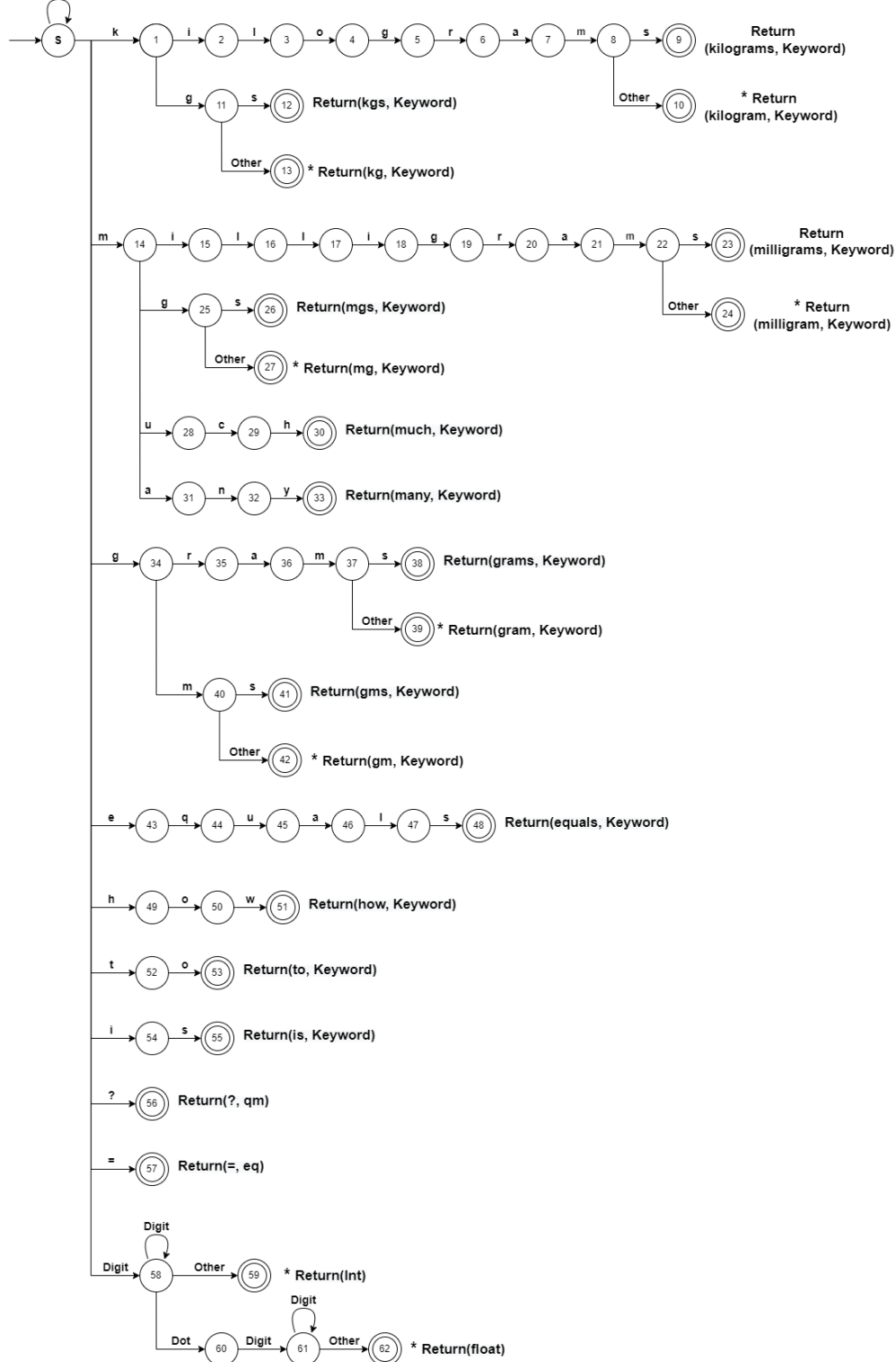
IT042 DISHANK INANI

IT043 VARSHITA JAIN

IT044 NAAMSUKH JOBANPUTRA

DFA:

New Line/ White Spaces



ALGORITHM:

lexer

```
{  
    int c = 0;  
    bool f = false;  
    int len = string.length();  
    while not eof do  
    {  
        state="S";  
        while not eof do (c < len)  
        {  
            if (f)  
            {  
                f= false;  
            }  
  
            char ch = nextchar();  
  
            switch (state)  
            {  
  
                case state of "S": {  
  
                    case state of  
                    'k':  
                        state = "1";  
                        ch = nextchar();
```

```
break;
```

```
'm':
```

```
state = "14";
```

```
ch = nextchar();
```

```
break;
```

```
'g':
```

```
state = "34";
```

```
ch = nextchar();
```

```
break;
```

```
'e':
```

```
state = "43";
```

```
ch = nextchar();
```

```
break;
```

```
'h':
```

```
state = "49";
```

```
ch = nextchar();
```

```
break;
```

```
't':
```

```
state = "52";
```

```
ch = nextchar();
```

```
break;
```

'i':

```
state = "54";  
ch = nextchar();  
break;
```

'?':

```
state = "56";  
ch = nextchar();  
f = true;  
break;
```

'=':

```
state = "57";  
ch = nextchar();  
f = true;  
break;
```

[0-9]:

```
state = "58";  
ch = nextchar();  
break;
```

Default:

```
f = true;
```

end case

}

```
case state of "1": {
```

```
    case state of
```

```
        'i':
```

```
            state = "2";
```

```
            ch = nextchar();
```

```
            break;
```

```
        'g':
```

```
            state = "11";
```

```
            ch = nextchar();
```

```
            f = true;
```

```
            break;
```

```
        'Default':
```

```
            f=true;
```

```
    end case
```

```
}
```

```
case state of "2": {
```

```
    case state of 'l':
```

```
        state = "3";
```

```
        ch = nextchar();
```

```
        break;
```

```
}
```

```
case state of "3": {  
    case state of 'o':  
        state = "4";  
        ch = nextchar();  
        break;  
}
```

```
case state of "4": {  
    case state of 'g':  
        state = "5";  
        ch = nextchar();  
        break;  
}
```

```
case state of "5": {  
    case state of 'r':  
        state = "6";  
        ch = nextchar();  
        break;  
}
```

```
case state of "6": {  
    case state of 'a':  
        state = "7";  
        ch = nextchar();  
        break;
```

```
}
```

```
case state of "7": {  
    case state of 'm':  
        state = "8";  
        ch = nextchar();  
        f = true;  
        break;  
}
```

```
case state of "8": {  
    case state of  
        's':  
            state = "9";  
            ch = nextchar();  
            f = true;  
            break;
```

Default:

```
    state = "10";  
    f = true;  
}
```

```
case state of "11": {  
    case state of  
        's':
```



```
state = "12";  
ch = nextchar();  
f = true;  
break;
```

Default:

```
state = "13";  
f = true;  
}
```

```
case state of "14": {
```

```
case state of
```

```
'i':  
state = "15";  
ch = nextchar();  
break;
```

```
'g':  
state = "25";  
ch = nextchar();  
f = true;  
break;
```

```
'u':  
state = "28";  
ch = nextchar();
```

```
break;
```

```
'a':
```

```
state = "31";
```

```
ch = nextchar();
```

```
break;
```

```
'Default':
```

```
f=true;
```

```
end case
```

```
}
```

```
case state of "15": {
```

```
case state of 'l':
```

```
state = "16";
```

```
ch = nextchar();
```

```
break;
```

```
}
```

```
case state of "16": {
```

```
case state of 'l':
```

```
state = "17";
```

```
ch = nextchar();
```

```
break;
```

```
}
```

```
case state of "17": {  
    case state of 'i':  
        state = "18";  
        ch = nextchar();  
        break;  
}
```

```
case state of "18": {  
    case state of 'g':  
        state = "19";  
        ch = nextchar();  
        break;  
}
```

```
case state of "19": {  
    case state of 'r':  
        state = "20";  
        ch = nextchar();  
        break;  
}
```

```
case state of "20": {  
    case state of 'a':  
        state = "21";  
        ch = nextchar();  
        break;  
}
```

```
case state of "21": {  
    case state of 'm':  
        state = "22";  
        ch = nextchar();  
        break;  
}
```

```
case state of "22": {  
    case state of  
        's':  
            state = "23";  
            ch = nextchar();  
            f = true;  
            break;
```

Default:

```
    state = "24";  
    f = true;  
}
```

```
case state of "25": {  
    case state of  
        's':  
            state = "26";  
            ch = nextchar();  
            f = true;
```

```
break;
```

Default:

```
state = "27";
```

```
f = true;
```

```
}
```

```
case state of "28": {
```

```
case state of 'c':
```

```
state = "29";
```

```
ch = nextchar();
```

```
break;
```

```
}
```

```
case state of "29": {
```

```
case state of 'h':
```

```
state = "30";
```

```
ch = nextchar();
```

```
f = true;
```

```
break;
```

```
}
```

```
case state of "31": {
```

```
case state of 'n':
```

```
state = "32";
```

```
ch = nextchar();
```

```
break;
```

```
}
```

```
case state of "32": {  
    case state of 'y':  
        state = "33";  
        ch = nextchar();  
        f = true;  
        break;  
}
```

```
case state of "34": {  
    case state of  
        'r':  
            state = "35";  
            ch = nextchar();  
            break;  
  
        'm':  
            state = "40";  
            ch = nextchar();  
            break;  
}
```

```
case state of "35": {  
    case state of 'a':  
        state = "36";  
        ch = nextchar();
```

```
        break;
    }

    case state of "36": {
        case state of 'm':
            state = "37";
            ch = nextchar();
            break;
    }
```

```
    case state of "37": {
        case state of
            's':
                state = "38";
                ch = nextchar();
                f = true;
                break;
    }
```

```
    Default:
        state = "39";
        f = true;
    }
```

```
    case state of "40": {
        case state of
            's':
                state = "41";
    }
```

```
ch = nextchar();
```

```
f = true;
```

```
break;
```

Default:

```
state = "42";
```

```
f = true;
```

```
}
```

```
case state of "43": {
```

```
case state of 'q':
```

```
state = "44";
```

```
ch = nextchar();
```

```
break;
```

```
}
```

```
case state of "44": {
```

```
case state of 'u':
```

```
state = "45";
```

```
ch = nextchar();
```

```
break;
```

```
}
```

```
case state of "45": {
```

```
case state of 'a':
```



```
        state = "46";  
        ch = nextchar();  
        break;  
    }
```

```
case state of "46": {  
    case state of 'l':  
        state = "47";  
        ch = nextchar();  
        break;  
}
```

```
case state of "47": {  
    case state of 's':  
        state = "48";  
        ch = nextchar();  
        f = true;  
        break;  
}
```

```
case state of "49": {  
    case state of 'o':  
        state = "50";  
        ch = nextchar();  
        break;  
}
```

```
case state of "50": {  
    case state of 'w':  
        state = "51";  
        ch = nextchar();  
        f = true;  
        break;  
}
```

```
case state of "52": {  
    case state of 'o':  
        state = "53";  
        ch = nextchar();  
        f = true;  
        break;  
}
```

```
case state of "54": {  
    case state of 's':  
        state = "55";  
        ch = nextchar();  
        f = true;  
        break;  
}
```

```
case state of "58": {  
    case state of  
        [0-9]:
```

```
ch = nextchar();  
break;
```

```
':
```

```
state = "60";  
ch = nextchar();  
break;
```

```
default:
```

```
state = "59";  
f = true;
```

```
}
```

```
case state of "60": {
```

```
case state of
```

```
[0-9]:
```

```
state = "61";  
ch = nextchar();  
break;
```

```
default:
```

```
f = true;
```

```
}
```

```
case state of "61": {
```

```
case state of
```

```
[0-9]:
```

```
ch = nextchar();
```

```
default:
```

```
state = "62";
```

```
f = true;
```

```
}
```

```
}
```

```
}
```

```
case state of
```

```
"9"|"10"|"12"|"13"|"23"|"24"|"26"|"27"|"30"|"33"|"38"|"39"|"41"|"42"|"48"|"51"|"53"|"55":
```

```
print(" keyword");
```

```
"56":
```

```
print("qm");
```

```
"57":
```

```
print("eq");
```

```
"59":
```

```
print("Int");
```

```
"62":
```

```
print("Float");
```

```
default:
```

```
print("invalid input");
```

```
ch := nextchar();
```

```
end case;
```

```
}
```

```
}
```