1. Design a Parser for the following code segment

```
main()
{
float a, *b, c[10], x, y, z[2][2];
a = 9;
b = &a;
c[a]=20;
x = a - b / 3 + c * 2 - 1;
y = a - b / (3 + c) * (2 - 1);
printf("x = %f\n", x);
printf("y = %f\n", y);
z[0][0]=x+y;
}
```

2. Design a PARSER for the following Code Segment:

```
struct employee
{
int id;
char name[50];
}e1,e2;
int main( )
{
e1.id=101;
strcpy(e1.name, "Sonoo Jaiswal");
e2.id=102;
strcpy(e2.name, "James Bond");
return 0;
}
```

3.

a) Design a Scanner to identify different types of elements in a contact.

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b) Design and implement the parser for the expression
Sum = (5 + 3) * 2 / (4 - 1) + sin(30) - cos(45)

4. Design a Scanner to identify the different type of tokens in the following Code segment and also print the total number of tokens.

```
main()
{
        int a,b[100];          // Declaration
        char answer;
        printf("Would you like to know my name?\n");
        printf("Type Y for YES and N for NO: ");
        answer = getchar();      /* .... Reading a character...*/

        if(answer == 'Y' || answer == 'y')
                printf("\n\nMy name is BUSY BEE\n");
        else
                printf("\n\nYou are good for nothing\n");
return 0;
}
```

5. Design a PARSER for the following Code Segment:

```
int main()
{
int n,r,sum=0,temp;
printf("enter the number=");
scanf("%d",&n);
temp=n;
while(n>0)
{
r=n%10;
sum=(sum*10)+r;
n=n/10;
}
}
```