MINI PROJECT QUESTIONS

Design a compiler(Lexical and Parser phase) for the following hypothetical languages.

Q1:

```
int main()
begin
   int n, i, sum = 0;
    for(i=1; i <= n; ++i)
   begin
            expr= expr+expr;
    end
End
```

Q2:

```
int main()
begin
   int n1, n2, n3;
        if( expr relop expr )
        begin
        printf( n1);
        end
        if ( expr relop expr )
        begin
                printf( n2);
        end
        if( expr relop expr )
         begin
        printf( n3);
        end
end
```

Q3:

```
int main()
begin
   int n, re = 0, rem;
   while(expr)
   begin
        expr=expr+expr;
   end
end
```

Q4:

```
int main()
begin
   int n1, n2, i, gcd;
   if(expr relop expr)
            gcd = i;
   for(i=1; expr relop expr; ++i)
   begin
      gcd=1;
   end
end
```

Q5:

```
BEGIN
    PRINT “HELLO”
    INTEGER A, B, C
    REAL   D, E
    STRING X, Y
    A := 2
    B := 4
    C := 6
    D := -3.56E-8
    E := 4.567
    X := “text1”
    Y := “hello there”

    FOR I:= 1 TO 5
          PRINT “Strings are [X] and [Y]”
     END
```

Q6:

```
X: integer ;

Procedure  foo( b : integer )
b := 13;
If x = 12 and b = 13 then
printf( “by copy-in copy-out” );
elseif x = 13 and b = 13 then
printf( “by address” );
else
printf( “A mystery” );
end if;
end foo
```

Q7:

```
int main()
begin
  int count=1;
  while(n>1)
    count=count+1;
    n=n/2;
  end while
 return count
end
```

Q8:

```
int main()
begin
      int L[10];
      int maxval=L[0];
      for i=1 to n-1 do
            if L[i]>maxval
                  maxval=L[i];
            endif
      endfor
      return(maxval)
End
```

Q9:

```
int main()
begin
int n;
do
            expr=expr+expr;
            n=exp;
 while(exp)
 return(n)
end
```

Q10:

```
int main()
    char operator;
    int firstNumber,secondNumber;
```

```
  switch(operator)
  begin
     case '+':
          printf(firstNumber+secondNumber);
          break;

      case '-':
          printf(firstNumber-secondNumber);
          break;
   end
return 0;
```