

UNIVERSIDAD DE SAN CARLOS DE GUATEMALA  
DIVISIÓN DE CIENCIAS DE LA INGENIERÍA  
INGENIERÍA EN CIENCIAS Y SISTEMAS  
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**MANUAL TÉCNICO DE APLICACIONES WEB Y ANDROID DE TRIVIA**  
**ORGANIZACIÓN DE LENGUAJES Y COMPILADORES 1**

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## Expresiones Regulares y Gramáticas de la aplicación web:

### Archivo lexer.flex:

```
LineTerminator = \r|\n|\r\n
WhiteSpace = {LineTerminator} | [ \t\f]
xson = "xson"
version = "version"
versionNumber = "1.0"
ok = "Ok"
error = "Error"
realizarSolicitud = "envio_respuesta"
loginUsuario = "LOGIN_USUARIO"
modificarUsuario = "MODIFICAR_USUARIO"
usuarioNuevo = "USUARIO_NUEVO"
respuesta = "RESPUESTA"
status = "STATUS"
usuario = "USUARIO"
name = [A-Z]+
values = [A-Za-z0-9_ÁÉÍÓÚáéíóúñÑ]+

finSolicitudRealizada = "fin_envio_respuesta"
```

### Archivo lexerRequests.flex

```
LineTerminator = \r|\n|\r\n
WhiteSpace = {LineTerminator} | [ \t\f]
xson = "xson"
version = "version"
versionNumber = "1.0"

realizarSolitud = "realizar_solicitud"
realizarSolicitudes = "realizar_solicitudes"
finSolicitudRealizada = "fin_solicitud_realizada"
finSolicitudesRealizadas = "fin_solicitudes_realizadas"

usuarioNuevo = "USUARIO_NUEVO"
modificarUsuario = "MODIFICAR_USUARIO"
usuarioAntiguo = "USUARIO_ANTIGUO"
eliminarUsuario = "ELIMINAR_USUARIO"
nuevoPassword = "NUEVO_PASSWORD"
datosUsuario = "DATOS_USUARIO"
usuario = "USUARIO"
password = "PASSWORD"
nombre = "NOMBRE"
institucion = "INSTITUCION"
```

fechaCreacion = "FECHA\_CREACION"  
nuevaTrivia = "NUEVA\_TRIVIA"  
parametrosTrivia = "PARAMETROS\_TRIVIA"  
idTriviaSentence = "ID\_TRIVIA"  
tiempoPregunta = "TIEMPO\_PREGUNTA"  
tema = "TEMA"  
usuarioCreacion = "USUARIO\_CREACION"  
fechaModificacion = "FECHA\_MODIFICACION"  
eliminarTrivia = "ELIMINAR\_TRIVIA"

niValue = [A-Z]+  
time = [0-9]+  
values = [A-Za-z0-9\_ÁÉÍÓÚáéíóúñÑ]+  
idTrivia = "\$" {values}  
day = [0-3][0-9]  
month = [0-1][0-9]  
year = [1-2][0-9][0-9][0-9]  
date = {day} "/" {month} "/" {year}

## Archivo parser.cup

INICIO ::= CORRECTO

| INCORRECTO

| AGREGARCORRECTO

| AGREGARINCORRECTO;

CORRECTO ::= LessThan QuestionMark XSONsentence Version Equal QuotationMark VersionNumber  
QuotationMark QuestionMark GreaterThan

LessThan ExclamationMark RealizarSolicitud Colon QuotationMark LoginUsuario QuotationMark  
GreaterThan

LeftBrace QuotationMark Respuesta QuotationMark Colon LeftBracket LeftBrace

QuotationMark Status QuotationMark Colon QuotationMark Ok QuotationMark Comma

QuotationMark Usuario QuotationMark Colon QuotationMark NAME:name QuotationMark

RightBrace RightBracket

RightBrace

LessThan FinSolicitud ExclamationMark GreaterThan;

INCORRECTO ::= LessThan QuestionMark XSONsentence Version Equal QuotationMark VersionNumber  
QuotationMark QuestionMark GreaterThan

LessThan ExclamationMark RealizarSolicitud Colon QuotationMark LoginUsuario  
QuotationMark GreaterThan

LeftBrace QuotationMark Respuesta QuotationMark Colon LeftBracket LeftBrace

QuotationMark Status QuotationMark Colon QuotationMark Error QuotationMark

RightBrace RightBracket

RightBrace

LessThan FinSolicitud ExclamationMark GreaterThan;

NAME ::= Name NAME  
| Name;

VALUES ::= Values  
| Name;

AGREGARCORRECTO ::= LessThan QuestionMark XSONsentence Version Equal QuotationMark  
VersionNumber QuotationMark QuestionMark GreaterThan  
LessThan ExclamationMark RealizarSolicitud Colon QuotationMark UsuarioNuevo  
QuotationMark GreaterThan  
LeftBrace QuotationMark Respuesta QuotationMark Colon LeftBracket LeftBrace  
QuotationMark Status QuotationMark Colon QuotationMark Ok QuotationMark  
RightBrace RightBracket  
RightBrace  
LessThan FinSolicitud ExclamationMark GreaterThan;

AGREGARINCORRECTO ::= LessThan QuestionMark XSONsentence Version Equal QuotationMark  
VersionNumber QuotationMark QuestionMark GreaterThan  
LessThan ExclamationMark RealizarSolicitud Colon QuotationMark UsuarioNuevo  
QuotationMark GreaterThan  
LeftBrace QuotationMark Respuesta QuotationMark Colon LeftBracket LeftBrace  
QuotationMark Status QuotationMark Colon QuotationMark Error QuotationMark  
RightBrace RightBracket  
RightBrace  
LessThan FinSolicitud ExclamationMark GreaterThan;

Archivo parserRequests.cup

INICIO ::= HEADER LOOP  
| error;

HEADER ::= LessThan QuestionMark XSONsentence Version Equal QuotationMark VersionNumber  
QuotationMark QuestionMark GreaterThan;

LOOP ::= SINGLEREQUEST  
| LessThan  
ExclamationMark RealizarSolicitudes GreaterThan LOOP2  
| /epsilon/;

LOOP2 ::= SINGLEREQUEST LOOP2  
| LessThan FinSolicitudes ExclamationMark GreaterThan;

SINGLEREQUEST ::= USUARIONUEVO  
| MODIFICARUSUARIO  
| ELIMINARUSUARIO  
| NUEVATRIVIA  
| ELIMINARTRIVIA;

USUARIONUEVO ::= LessThan ExclamationMark RealizarSolicitud Colon QuotationMark UsuarioNuevo QuotationMark GreaterThan

LeftBrace QuotationMark DatosUsuario QuotationMark Colon LeftBracket  
NEWUSERLOOP  
RightBracket RightBrace  
LessThan FinSolicitud ExclamationMark GreaterThan

| error USUARIONUEVO;

NEWUSERLOOP ::= LeftBrace NEWUSERBLOCK NEWUSERBLOCK NEWUSERBLOCK NEWUSERBLOCK  
NEWUSERBLOCK RightBrace Comma NEWUSERLOOP

| LeftBrace NEWUSERBLOCK NEWUSERBLOCK NEWUSERBLOCK NEWUSERBLOCK  
NEWUSERBLOCK RightBrace

| error;

NEWUSERBLOCK ::= QuotationMark Usuario QuotationMark Colon QuotationMark VALUES  
QuotationMark Comma

| QuotationMark Password QuotationMark Colon QuotationMark VALUES QuotationMark  
Comma

| QuotationMark Nombre QuotationMark Colon QuotationMark NAMES QuotationMark  
Comma

| QuotationMark Institucion QuotationMark Colon QuotationMark NAMES QuotationMark  
Comma

| QuotationMark FechaCreacion QuotationMark Colon QuotationMark Date QuotationMark  
Comma

| error;

MODIFICARUSUARIO ::= LessThan ExclamationMark RealizarSolicitud Colon QuotationMark  
ModificarUsuario QuotationMark GreaterThan

LeftBrace QuotationMark DatosUsuario QuotationMark Colon LeftBracket  
MODIFICARUSUARIOLOOP  
RightBracket RightBrace  
LessThan FinSolicitud ExclamationMark GreaterThan

|error MODIFICARUSUARIO;

MODIFICARUSUARIOLOOP ::= LeftBrace MODIFICARUSUARIOBLOCK MODIFICARUSUARIOBLOCK  
MODIFICARUSUARIOBLOCK MODIFICARUSUARIOBLOCK MODIFICARUSUARIOBLOCK  
RightBrace Comma MODIFICARUSUARIOLOOP

| LeftBrace MODIFICARUSUARIOBLOCK MODIFICARUSUARIOBLOCK  
MODIFICARUSUARIOBLOCK MODIFICARUSUARIOBLOCK MODIFICARUSUARIOBLOCK RightBrace

| error;

MODIFICARUSUARIOBLOCK ::= QuotationMark UsuarioAntiguo QuotationMark Colon QuotationMark  
VALUES QuotationMark Comma

| QuotationMark UsuarioNuevo QuotationMark Colon QuotationMark VALUES  
QuotationMark Comma

| QuotationMark NuevoPassword QuotationMark Colon QuotationMark VALUES  
QuotationMark Comma

| QuotationMark FechaModificacion QuotationMark Colon QuotationMark Date  
QuotationMark Comma

| QuotationMark Institucion QuotationMark Colon QuotationMark NAMES QuotationMark  
Comma

| error;

ELIMINARUSUARIO ::= LessThan ExclamationMark RealizarSolicitud Colon QuotationMark  
EliminarUsuario QuotationMark GreaterThan

LeftBrace QuotationMark DatosUsuario QuotationMark Colon LeftBracket

ELIMINARUSUARIOLOOP

RightBracket RightBrace

LessThan FinSolicitud ExclamationMark GreaterThan

| error ELIMINARUSUARIO;

ELIMINARUSUARIOLOOP ::= LeftBrace

QuotationMark Usuario QuotationMark Colon QuotationMark VALUES QuotationMark

RightBrace Comma ELIMINARUSUARIOLOOP

| LeftBrace

QuotationMark Usuario QuotationMark Colon QuotationMark VALUES QuotationMark

RightBrace

| error;

NUEVATRIVIA ::= LessThan ExclamationMark RealizarSolicitud Colon QuotationMark NuevaTrivia  
QuotationMark GreaterThan

LeftBrace QuotationMark ParametrosTrivia QuotationMark Colon LeftBracket

NEWTRIVIALOOP

RightBracket RightBrace

LessThan FinSolicitud ExclamationMark GreaterThan

| error NUEVATRIVIA;

NEWTRIVIALOOP ::= LeftBrace NEWTRIVIABLOCK NEWTRIVIABLOCK NEWTRIVIABLOCK  
NEWTRIVIABLOCK NEWTRIVIABLOCK NEWTRIVIABLOCK RightBrace Comma NEWTRIVIALOOP

| LeftBrace NEWTRIVIABLOCK NEWTRIVIABLOCK NEWTRIVIABLOCK NEWTRIVIABLOCK  
NEWTRIVIABLOCK NEWTRIVIABLOCK RightBrace

| error;

NEWTRIVIABLOCK ::= QuotationMark IDTriviaSentence QuotationMark Colon QuotationMark IDTrivia  
QuotationMark Comma

| QuotationMark TiempoPregunta QuotationMark Colon Time Comma

| QuotationMark Nombre QuotationMark Colon QuotationMark VALUESCONCAT  
QuotationMark Comma

| QuotationMark Tema QuotationMark Colon QuotationMark VALUESCONCAT  
QuotationMark Comma

| QuotationMark UsuarioCreacion QuotationMark Colon QuotationMark NAMES  
QuotationMark Comma

| QuotationMark FechaCreacion QuotationMark Colon QuotationMark Date QuotationMark  
Comma

| error;

ELIMINARTRIVIA ::= LessThan ExclamationMark RealizarSolicitud Colon QuotationMark EliminarTrivia  
QuotationMark GreaterThan

LeftBrace QuotationMark ParametrosTrivia QuotationMark Colon LeftBracket

ELIMINARTRIVIALOOP

RightBracket RightBrace

LessThan FinSolicitud ExclamationMark GreaterThan

| error ELIMINARTRIVIA;

ELIMINARTRIVIALOOP ::= LeftBrace

QuotationMark IDTriviaSentence QuotationMark Colon QuotationMark IDTrivia  
QuotationMark

RightBrace Comma ELIMINARTRIVIALOOP

| LeftBrace

QuotationMark IDTriviaSentence QuotationMark Colon QuotationMark IDTrivia  
QuotationMark

RightBrace

| error;

VALUES ::= UPValue

| NValue

| Time

| error;

```
VALUESCONCAT ::= UPValue VALUESCONCAT
                | NValue VALUESCONCAT
                | UPValue
                | NValue
                | error;
```

```
NAMES ::= NValue NAMES
        | NValue
        | error;
```

## Expresiones Regulares y Gramáticas para el servidor:

### lexer.flex (Servidor)

```
LineTerminator = \r|\n|\r\n
WhiteSpace = {LineTerminator} | [ \t\f]
xson = "xson"
version = "version"
versionNumber = "1.0"

usuario = "USUARIO"
password = "PASSWORD"
nombre = "NOMBRE"
institucion = "INSTITUCION"
usuarioNuevo = "USUARIO_NUEVO"
usuarioAntiguo = "USUARIO_ANTIGUO"
nuevoPassword = "NUEVO_PASSWORD"
modificarUsuario = "MODIFICAR_USUARIO"
eliminarUsuario = "ELIMINAR_USUARIO"
loginUsuario = "LOGIN_USUARIO"
datosUsuario = "DATOS_USUARIO"
fechaCreacion = "FECHA_CREACION"
nuevaTrivia = "NUEVA_TRIVIA"
parametrosTrivia = "PARAMETROS_TRIVIA"
idTriviaSentence = "ID_TRIVIA"
tiempoPregunta = "TIEMPO_PREGUNTA"
tema = "TEMA"
usuarioCreacion = "USUARIO_CREACION"
listaTrivias = "LISTA_TRIVIAS"

realizarSolicitud = "realizar_solicitud"
realizarSolicitudes = "realizar_solicitudes"

niValue = [A-Z]+
time = [0-9]+
values = [A-Za-z0-9_ÁÉÍÓÚáéíóúñÑ]+
```



```
idTrivia = "$" {values}
day = [0-3][0-9]
month = [0-1][0-9]
year = [1-2][0-9][0-9][0-9]
date = {day} "/" {month} "/" {year}
finSolicitudRealizada = "fin_solicitud_realizada"
finSolicitudesRealizadas = "fin_solicitudes_realizadas"
```

Archivo parser.cup (servidor):

```
INICIO ::= HEADER LOOP
        | HEADER LOGINUSUARIO;
```

```
HEADER ::= LessThan QuestionMark XSONsentence Version Equal QuotationMark VersionNumber
QuotationMark QuestionMark GreaterThan;
```

```
LOOP ::= SINGLEREQUEST
        | LessThan ExclamationMark RealizarSolicitudes GreaterThan LOOP2
        | /epsilon/;
```

```
LOOP2 ::= SINGLEREQUEST LOOP2
        | LessThan FinSolicitudes ExclamationMark GreaterThan;
```

```
SINGLEREQUEST ::= USUARIONUEVO
                | MODIFICARUSUARIO
                | ELIMINARUSUARIO
                | NUEVATRIVIA
                | LISTATRIVIAS;
```

```
LOGINUSUARIO ::= LessThan ExclamationMark RealizarSolicitud Colon QuotationMark LoginUsuario
QuotationMark GreaterThan
                LeftBrace QuotationMark DatosUsuario QuotationMark Colon LeftBracket LeftBrace
                QuotationMark Usuario QuotationMark Colon QuotationMark VALUES:username
                QuotationMark Comma
                QuotationMark Password QuotationMark Colon QuotationMark VALUES:password
                QuotationMark
                RightBrace RightBracket
                RightBrace
                LessThan FinSolicitud ExclamationMark GreaterThan;
```

USUARIONUEVO ::= LessThan ExclamationMark RealizarSolicitud Colon QuotationMark UsuarioNuevo QuotationMark GreaterThan

LeftBrace QuotationMark DatosUsuario QuotationMark Colon LeftBracket  
NEWUSERLOOP  
RightBracket RightBrace  
LessThan FinSolicitud ExclamationMark GreaterThan;

NEWUSERLOOP ::= LeftBrace NEWUSERBLOCK NEWUSERBLOCK NEWUSERBLOCK NEWUSERBLOCK  
NEWUSERBLOCK RightBrace Comma NEWUSERLOOP;

NEWUSERBLOCK ::= QuotationMark Usuario QuotationMark Colon QuotationMark  
VALUES:usernameVal QuotationMark Comma

| QuotationMark Password QuotationMark Colon QuotationMark VALUES:passwordVal  
QuotationMark Comma

| QuotationMark Nombre QuotationMark Colon QuotationMark NAMES:nameVal  
QuotationMark Comma

| QuotationMark Institucion QuotationMark Colon QuotationMark NAMES:institutionVal  
QuotationMark Comma

| QuotationMark FechaCreacion QuotationMark Colon QuotationMark Date:dateVal  
QuotationMark Comma;

NUEVATRIVIA ::= LessThan ExclamationMark RealizarSolicitud Colon QuotationMark NuevaTrivia QuotationMark GreaterThan

LeftBrace QuotationMark ParametrosTrivia QuotationMark Colon LeftBracket  
NEWTRIVIALOOP  
RightBracket RightBrace  
LessThan FinSolicitud ExclamationMark GreaterThan;

NEWTRIVIALOOP ::= LeftBrace NEWTRIVIABLOCK NEWTRIVIABLOCK NEWTRIVIABLOCK  
NEWTRIVIABLOCK NEWTRIVIABLOCK NEWTRIVIABLOCK RightBrace Comma NEWTRIVIALOOP

| LeftBrace NEWTRIVIABLOCK NEWTRIVIABLOCK NEWTRIVIABLOCK NEWTRIVIABLOCK  
NEWTRIVIABLOCK NEWTRIVIABLOCK RightBrace;

NEWTRIVIABLOCK ::= QuotationMark IDTriviaSentence QuotationMark Colon QuotationMark  
IDTrivia:idTriviaVal QuotationMark Comma

| QuotationMark TiempoPregunta QuotationMark Colon Time:timeVal Comma

| QuotationMark Nombre QuotationMark Colon QuotationMark VALUESCONCAT:nameVal  
QuotationMark Comma

| QuotationMark Tema QuotationMark Colon QuotationMark VALUESCONCAT:temaVal  
QuotationMark Comma

| QuotationMark UsuarioCreacion QuotationMark Colon QuotationMark NAMES:usuarioVal  
QuotationMark Comma

| QuotationMark FechaCreacion QuotationMark Colon QuotationMark Date:dateVal  
QuotationMark Comma;

MODIFICARUSUARIO ::= LessThan QuestionMark XSONsentence Version Equal QuotationMark  
VersionNumber QuotationMark QuestionMark GreaterThan  
LessThan ExclamationMark RealizarSolicitud Colon QuotationMark ModificarUsuario  
QuotationMark GreaterThan  
LeftBrace QuotationMark DatosUsuario QuotationMark Colon LeftBracket LeftBrace  
QuotationMark UsuarioAntiguo QuotationMark Colon QuotationMark VALUES  
QuotationMark Comma  
QuotationMark UsuarioNuevo QuotationMark Colon QuotationMark VALUES QuotationMark  
Comma  
QuotationMark NuevoPassword QuotationMark Colon QuotationMark VALUES  
QuotationMark  
RightBrace RightBracket  
RightBrace  
LessThan FinSolicitud ExclamationMark GreaterThan;

ELIMINARUSUARIO ::= LessThan QuestionMark XSONsentence Version Equal QuotationMark  
VersionNumber QuotationMark QuestionMark GreaterThan  
LessThan ExclamationMark RealizarSolicitud Colon QuotationMark EliminarUsuario  
QuotationMark GreaterThan  
LeftBrace QuotationMark DatosUsuario QuotationMark Colon LeftBracket LeftBrace  
QuotationMark Usuario QuotationMark Colon QuotationMark VALUES QuotationMark  
RightBrace RightBracket  
RightBrace  
LessThan FinSolicitud ExclamationMark GreaterThan;

LISTATRIVIAS ::= LessThan ExclamationMark RealizarSolicitud Colon QuotationMark ListaTrivias  
QuotationMark GreaterThan  
LessThan FinSolicitud ExclamationMark GreaterThan;

VALUES ::= Values  
| niValue  
| Time;

VALUESCONCAT ::= Values VALUESCONCAT  
| niValue VALUESCONCAT  
| Values  
| niValue;

NAMES ::= niValue NAMES  
| niValue;

Archivo users.cup

INICIO ::= A;

A ::= Init OpenParenthesis B CloseParenthesis;

B ::= LeftBrace C RightBrace D;

C ::= E:a  
F:b  
QuotationMark Name QuotationMark Colon QuotationMark G:c QuotationMark Comma  
QuotationMark Institution QuotationMark Colon QuotationMark G:d QuotationMark Comma  
QuotationMark FechaCreacion QuotationMark Colon QuotationMark Date QuotationMar;

D ::= Comma B  
| /epsilon/;

E ::= QuotationMark User QuotationMark Colon QuotationMark UPValue:a QuotationMark Comma  
| QuotationMark User QuotationMark Colon QuotationMark NIValue:a QuotationMark Comma  
;

F ::= QuotationMark Password QuotationMark Colon QuotationMark UPValue:a QuotationMark Comma  
| QuotationMark Password QuotationMark Colon QuotationMark NIValue:a QuotationMark Comma  
;

G ::= NIValue:a  
| NIValue:a G:b  
;

### Archivo users.flex

LineTerminator = \r|\n|\r\n

WhiteSpace = {LineTerminator} | [ \t\f]

init = "db.users"

user = "USUARIO"

password = "PASSWORD"

name = "NOMBRE"

institution = "INSTITUCION"

fechaCreacion = "FECHA\_CREACION"

//Name and Institution values

niValue = [A-Z]+

//User and Password values

upValue = [a-zA-Z0-9\_]+

//Date values

day = [0-3][0-9]

month = [0-1][0-9]

year = [1-2][0-9][0-9][0-9]

date = {day} "/" {month} "/" {year}

### Archivo trivias.flex

LineTerminator = \r|\n|\r\n

WhiteSpace = {LineTerminator} | [ \t\f]

header = "db.trivia"

idTriviaSentence = "ID\_TRIVIA"

nombre = "NOMBRE"

tema = "TEMA"

tiempoPregunta = "TIEMPO\_PREGUNTA"

usuarioCreacion = "USUARIO\_CREACION"

estructura = "ESTRUCTURA"

idComponente = "ID\_COMPONENTE\_"[0-9]+

clase = "CLASE"

campoTexto = "CAMPO\_TEXTO"

areaTexto = "AREA\_TEXTO"

checkbox = "CHECKBOX"

radio = "RADIO"

fichero = "FICHERO"

combo = "COMBO"

textoVisible = "TEXTO\_VISIBLE"

respuesta = "RESPUESTA"

```
filas = "FILAS"
columnas = "COLUMNAS"
opciones = "OPCIONES"
```

```
number = [0-9]+
text = [0-9A-Za-z_]+
idTrivia = "$" {text}
specialText = [0-9A-Za-z_¿?¡!#ÁÉÍÓÚáéíóúñÑ. ]+
```

trivias.cup

```
INICIO ::= Header LeftPar LeftBrace
        TRIVIALOOP
        RightBrace RightPar;
```

```
TRIVIALOOP ::= TRIVIABLOCK Comma TRIVIALOOP
             | TRIVIABLOCK;
```

```
TRIVIABLOCK ::= LeftBracket
                QuotationMark IdTriviaSentence QuotationMark Colon QuotationMark IdTrivia:idTriviaVal
                QuotationMark Comma
                QuotationMark Nombre QuotationMark Colon QuotationMark SENTENCES:nameVal
                QuotationMark Comma
                QuotationMark Tema QuotationMark Colon QuotationMark SENTENCES:topicVal
                QuotationMark Comma
                QuotationMark TiempoPregunta QuotationMark Colon Number:timeVal Comma
                QuotationMark UsuarioCreacion QuotationMark Colon QuotationMark
                SpecialText:userCreationVal QuotationMark Comma
                QuotationMark Estructura QuotationMark Colon LeftPar
                COMPONENTLOOP
                RightPar
                RightBracket
                ;
```

```
COMPONENTLOOP ::= LeftBrace COMPONENTHEADER RightBrace Comma COMPONENTLOOP
                | LeftBrace COMPONENTHEADER RightBrace;
```

```
COMPONENTHEADER ::= QuotationMark IdComponente QuotationMark Colon QuotationMark
IdTrivia:idComponentVal QuotationMark Comma
                QuotationMark Clase QuotationMark Colon QuotationMark COMPONENT
                ;
```

```
COMPONENT ::= CLASESONE:classesVal QuotationMark Comma
                QuotationMark TextoVisible QuotationMark Colon QuotationMark SENTENCES:sentenceVal
                QuotationMark Comma
                QuotationMark Respuesta QuotationMark Colon QuotationMark SENTENCES:answerVal
                QuotationMark
```

```

        |AreaTexto QuotationMark Comma
        QuotationMark TextoVisible QuotationMark Colon QuotationMark SENTENCES:sentenceVal
    QuotationMark Comma
        QuotationMark Filas QuotationMark Colon Number:lineVal Comma
        QuotationMark Columnas QuotationMark Colon Number:columnVal Comma
        QuotationMark Respuesta QuotationMark Colon QuotationMark SENTENCES:answerVal
    QuotationMark

```

```

        |CLASESTWO:classesVal QuotationMark Comma
        QuotationMark TextoVisible QuotationMark Colon QuotationMark SENTENCES:sentenceVal
    QuotationMark Comma
        QuotationMark Opciones QuotationMark Colon QuotationMark SENTENCES:optionsVal
    QuotationMark Comma
        QuotationMark Respuesta QuotationMark Colon QuotationMark SENTENCES:answerVal
    QuotationMark
    ;

```

```

CLASES ONE ::= CampoTexto
    | Fichero;

```

```

CLASES TWO ::= Checkbox
    | Radio
    | Combo;

```

```

SENTENCES ::=
    | Colon
    | SpecialText
    | Colon;

```

## Expresiones Regulares y Gramáticas para la aplicación Android:

Archivo login.cup

```

S ::= HEADER ANSWERS
    | ERROR
;

```

```

HEADER ::= LessThan Xson Version Equal QuotationMark VersionNumber QuotationMark QuestionMark
Greater Than;

```

```

ANSWERS ::= OK

```

```

    | ERROR

```

```

    | TRIVIALIST

```

```

;

```

```

OK ::= LessThan EnvioRespuesta Colon QuotationMark LoginUsuario QuotationMark Greater Than

```

```

LeftBrace QuotationMark Respuesta QuotationMark Colon LeftBracket LeftBrace
QuotationMark Status QuotationMark Colon QuotationMark Ok QuotationMark Comma
QuotationMark Usuario QuotationMark Colon QuotationMark NAME:name QuotationMark
RightBrace
RightBracket RightBrace
LessThan FinEnvioRespuesta GreaterThan
;

ERROR ::= LessThan EnvioRespuesta Colon QuotationMark LoginUsuario QuotationMark GreaterThan
LeftBrace QuotationMark Respuesta QuotationMark Colon LeftBracket LeftBrace
QuotationMark Status QuotationMark Colon QuotationMark Error QuotationMark
RightBrace
RightBracket RightBrace
LessThan FinEnvioRespuesta ExclamationMark GreaterThan;

TRIVIALIST ::= LessThan EnvioRespuesta Colon QuotationMark ListaTrivias QuotationMark GreaterThan
LeftBrace QuotationMark Respuesta QuotationMark Colon LeftBracket
TRIVIALOOP
RightBracket RightBrace
LessThan FinEnvioRespuesta GreaterThan;

TRIVIALOOP ::= TRIVIABLOCK TRIVIALOOP
| TRIVIABLOCK;

TRIVIABLOCK ::= LeftBrace QuotationMark IdTrivia QuotationMark Colon QuotationMark
IdTriviaValue:idTriviaVal QuotationMark Comma
QuotationMark Nombre QuotationMark Colon QuotationMark SPECIALTEXT:nameVal
QuotationMark Comma
QuotationMark Tema QuotationMark Colon QuotationMark SPECIALTEXT:topicVal
QuotationMark Comma
QuotationMark TiempoPregunta QuotationMark Colon QuotationMark Number:timeVal
QuotationMark Comma
QuotationMark UsuarioCreacion QuotationMark Colon QuotationMark SpecialText:authorVal
QuotationMark
RightBrace Comma
;

NAME ::= UserValue NAME
| UserValue;

SPECIALTEXT ::= SpecialText SPECIALTEXT
| UserValue SPECIALTEXT
| Number SPECIALTEXT
| UserValue
| Number
| SpecialText;

```



## Archivo login.flex

LineTerminator = \r|\n|\r\n

WhiteSpace = {LineTerminator} | [ \t\f]

xson = "?xson"

version = "version"

versionNumber = "1.0"

envioRespuesta = "!envio\_respuesta"

ok = "Ok"

error = "Error"

finEnvioRespuesta = "fin\_envio\_respuesta!"

loginUsuario = "LOGIN\_USUARIO"

respuesta = "RESPUESTA"

status = "STATUS"

usuario = "USUARIO"

listaTrivias = "LISTA\_TRIVIAS"

idTrivia = "ID\_TRIVIA"

nombre = "NOMBRE"

tema = "TEMA"

tiempoPregunta = "TIEMPO\_PREGUNTA"

usuarioCreacion = "USUARIO\_CREACION"

userValue = [A-Z]+

number = [0-9]+

text = [0-9A-Za-z\_]+

idTriviaValue = "\$" {text}

specialText = [0-9A-Za-z\_?¡!#ÁÉÍÓÚáéíóúñÑ. ]+

## Diagrama de caso de uso:

