Flex introduction

Compiler Design WS 17/18

```
/* Declarations */

%%

 /* Rules */

%%

/* User code */
```

```
/* ... */

%%

break    return BREAK;
continue return CONTINUE;

%%

/* ... */
```

```
/* ... */

%%

break     return BREAK;
continue return CONTINUE;

[a-zA-Z][a-zA-Z0-9]* return IDENTIFIER;

%%

/* ... */
```
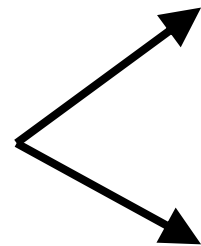
```
/* ... */

%%

break     return BREAK;
continue return CONTINUE;

[a-zA-Z][a-zA-Z0-9]* return IDENTIFIER;

%%

/* ... */
```

Input: breakage

BREAK
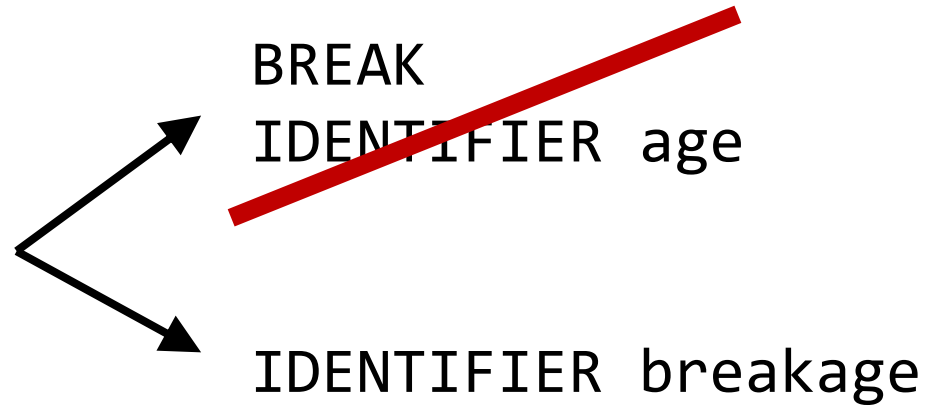IDENTIFIER age

IDENTIFIER breakage

```
/* ... */

%%

break     return BREAK;
continue return CONTINUE;

[a-zA-Z][a-zA-Z0-9]* return IDENTIFIER;

%%

/* ... */
```

Input: breakage

BREAK
IDENTIFIER age

IDENTIFIER breakage

Longest match wins!

```
/* ... */

%%

break    return BREAK;
continue return CONTINUE;

[a-zA-Z][a-zA-Z0-9]* return IDENTIFIER;

%%

/* ... */
```

Input: break → BREAK

IDENTIFIER break

```
/* ... */

%%

break     return BREAK;
continue return CONTINUE;

[a-zA-Z][a-zA-Z0-9]* return IDENTIFIER;

%%

/* ... */
```
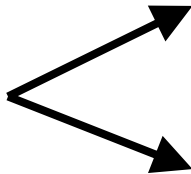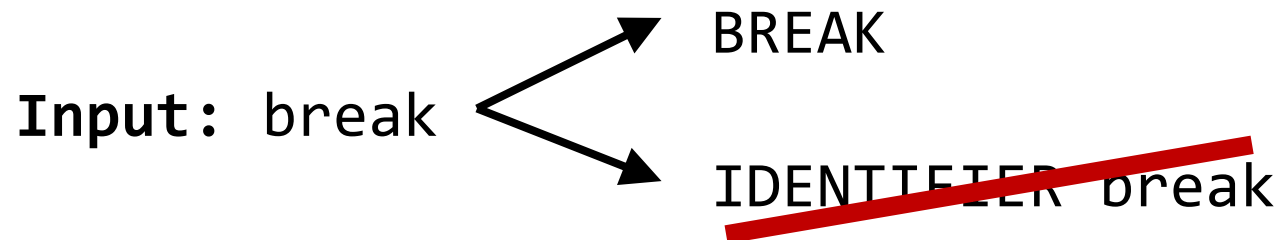
Input: break → BREAK

~~IDENTIFIER break~~

If length equal: First match wins!

```
/* ... */

IDENT [a-zA-Z][a-zA-Z0-9]*

%%

break    return BREAK;
continue return CONTINUE;

{IDENT}  return IDENTIFIER;

%%

/* ... */
```

```
/* ... */

IDENT [a-zA-Z][a-zA-Z0-9]*

%%

break    return BREAK;
continue return CONTINUE;

{IDENT}  return IDENTIFIER;
{IDENT}("."{IDENT})+ return DOT_IDENTIFIER;

%%

/* ... */
```

```
/* ... */

IDENT [a-zA-Z][a-zA-Z0-9]*

%%

break    return BREAK;
continue return CONTINUE;

{IDENT}  { yylval.str = strdup(yytext); return IDENTIFIER; }

%%

/* ... */
```

```
/* ... */

IDENT [a-zA-Z][a-zA-Z0-9]*

%%

break     return BREAK;
continue  return CONTINUE;

{IDENT}   { yylval.str = strdup(yytext); return IDENTIFIER; }

%%

/* ... */
```

Strings with interpolation: "Foo $VAR Bar"

```
%x IN_STRING

/* ... */

IDENT [a-zA-Z][a-zA-Z0-9]*

%%

break     return BREAK;
continue  return CONTINUE;

{IDENT}   { yylval.str = strdup(yytext); return IDENTIFIER; }




%% /* ... */
```

```
%x IN_STRING

/* ... */

IDENT [a-zA-Z][a-zA-Z0-9]*

%%

break    return BREAK;
continue return CONTINUE;

{IDENT}  { yylval.str = strdup(yytext); return IDENTIFIER; }

\"                           BEGIN(IN_STRING);
<IN_STRING>\"                BEGIN(INITIAL);


%% /* ... */
```

```
%x IN_STRING

/* ... */

IDENT [a-zA-Z][a-zA-Z0-9]*

%%

break     return BREAK;
continue return CONTINUE;

{IDENT}  { yylval.str = strdup(yytext); return IDENTIFIER; }

\"                        BEGIN(IN_STRING);
<IN_STRING>\"             BEGIN(INITIAL);
<IN_STRING>"$"{IDENTIFIER} return VARIABLE;


%% /* ... */
```

```
%x IN_STRING

/* ... */

IDENT [a-zA-Z][a-zA-Z0-9]*

%%

break    return BREAK;
continue return CONTINUE;

{IDENT}  { yylval.str = strdup(yytext); return IDENTIFIER; }

\"                       BEGIN(IN_STRING);
<IN_STRING>\"            BEGIN(INITIAL);
<IN_STRING>"$"{IDENTIFIER} return VARIABLE;
<IN_STRING>[^$"]+        return STR_PART;

%% /* ... */
```