ΑΡΧΕΣ ΓΛΩΣΣΩΝ ΠΡΟΓΡΑΜΜΑΤΙΣΜΟΥ ΚΑΙ ΜΕΤΑΦΡΑΣΤΩΝ

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ΕΡΩΤΗΜΑ 1 (60%)

a.

<root> ::= <LinearLayout> | <RelativeLayout>

<LinearLayout> ::= "<LinearLayout" <android:layout_width> <android:layout_height>

[<android:id>] [<android:orientation>]

">" (<TextView> | <ImageView> | <RelativeLayout>|<Button>|<RadioButton>|<RadioGroup>|<ProgressBar>)+ "</LinearLayout>"

<RelativeLayout> ::= "<RelativeLayout" <android:layout_width> <android:layout_height>

[<android:id>] ">" [<TextView> <ImageView> <RelativeLayout> <Button> <RadioButton> <RadioGroup> <ProgressBar>] "</RelativeLayout>"

<TextView> ::= "<TextView" <android:layout_width> <android:layout_height>

<android:text> [<android:id>] [<android:textColor>] "/>"

<ImageView> ::= "<ImageView" <android:layout_width> <android:layout_height>

<android:src> [<android:id>] [<android:padding>] "/>"

<Button> ::= "<Button" <android:layout_width> <android:layout_height>

<android:text> [<android:id>] "/>"

<RadioGroup> ::= "<RadioGroup" <android:layout_width> <android:layout_height> [<android:id>] [<android:checkedButton>]

(<RadioButton>)+ "</RadioGroup>"

<RadioButton> ::= "<RadioButton"<android:layout_width> <android:layout_height> [<android:id>] <android:text> "/>"

<ProgressBar> ::= "<ProgressBar" <android:layout_width> <android:layout_height> [<android:id>] [<android:max>]

[<android:progress] "/>"

<android:layout_width> ::= "android:layout_width=\"" (<string>|<integer>) "\""

<android:layout_height> ::= "android:layout_height=\"" (<string>|<integer>) "\""

<android:id> ::= "android:id=\"" <string> "\""

<android:orientation> ::= "android:orientation=\"" <string> "\""

<android:text> ::= "android:text=\"" <string> "\""

<android:textColor> ::= "android:textColor=\"" <string> "\""

<android:src> ::= "android:src=\"" <string> "\""

<android:padding> ::= "android:padding=\"" <integer> "\""

<android:checkedButton> ::= "android:checkedButton=\"" <string"\""

<android:text> ::= "android:text=\""<string>"\""

<android:max>::="android:max=\""<integer>"\""

<android:progress>::="android:progress=\""<integer>"\""

<digit> ::= 0|1|2|3|4|5|6|7|8|9

<integer>::=<digit>|<digit><integer>

<string> ::=(letter|<integer>|"_"|" ")

b. (LEXICAL ANALYSIS FLEX)

ΔΟΜΗ FLEX:

```
%
```

/* 1ο ΜΕΡΟΣ: INCLUDE ΤΙΣ ΒΙΒΛΙΟΘΗΚΕΣ ΚΑΙ ΟΡΙΖΟΥΜΕ ΤΙΣ ΣΥΝΑΡΤΗΣΕΙΣ ΠΟΥ ΘΑ ΧΡΕΙΑΣΤΟΥΜΕ ΑΡΓΟΤΕΡΑ */

```
{
#include "syntax.tab.h"
#include <string.h>
#include <stdio.h>
#include <stdlib.h>


int error_counter=0;

void token_print(int token_id);
void yyerror(const char* err);
%}

%option noyywrap
%option yylineno

%x SINGLE_LINE_COMMENT
%%
```

/* 2ο ΜΕΡΟΣ: ΟΡΙΖΟΥΜΕ ΤΑ ΑΠΑΡΑΙΤΗΤΑ TOKENS */

```
"<LinearLayout"   {return T_LINEAR_LAYOUT;}
"</LinearLayout>" {return T_LINEAR_LAYOUT_END;}
"<RelativeLayout" {return T_RELATIVE_LAYOUT;}
"</RelativeLayout>" {return T_RELATIVE_LAYOUT_END;}
```

```
"<TextView" {return T_TEXTVIEW;}
"</TextView>" {return T_TEXTVIEW_END;}
"<ImageView" {return T_IMAGEVIEW;}
"</ImageView>" {return T_IMAGEVIEW;}
"<Button" {return T_BUTTON;}
"</Button>" {return T_BUTTON_END;}
"<RadioButton" {return T_RADIOBUTTON;}
"</RadioButton>" {return T_RADIOBUTTON_END;}
"<RadioGroup" {return T_RADIOGROUP;}
"</RadioGroup>" {return T_RADIOGROUP_END;}
"<ProgressBar" {return T_PROGRESSBAR;}
"</ProgressBar>" {return T_PROGRESSBAR_END;}
"android:layout_width" {return T_AN_WIDTH;}
"android:layout_height" {return T_AN_HEIGHT;}
"android:orientation" {return T_AN_ORIENTATION;}
"android:id" {return T_AN_ID;}
"android:text" {return T_AN_TEXT;}
"android:src" {return T_AN_SRC;}
"android:padding" {return T_AN_PADDING;}
"android:max" {return T_AN_MAX;}
"android:progress" {return T_AN_PROGRESS;}
"android:checkedButton" {return T_AN_CHECKED_BUTTON;}
"android:textColor"  {return T_AN_TEXT_COLOR;}
"android:rbutton" {return T_AN_RB;}

"<!--"          {BEGIN(SINGLE_LINE_COMMENT); }
<SINGLE_LINE_COMMENT>"-->" { BEGIN(INITIAL); printf("Comment ignored.\n"); }
<SINGLE_LINE_COMMENT>.   {  }
```

"=" {return T_EQUAL;}

"/>" {return T_END_SYMBOL;}

[a-zA-Z][a-zA-Z0-9_]+ {return T_STRING;}

[0-9]* {return T_NUMBER;}

-[0-9]* {return T_NEGATIVE;}

["] {return T_SYMBOL;}

">" {return T_BIG;}

\"match_parent\" { yylval.strval = strdup(yytext); yylval.strval[strlen(yylval.strval)]; return T_MP; }

\"wrap_content\" { yylval.strval = strdup(yytext); yylval.strval[strlen(yylval.strval)]; return T_WC; }

[\t]+ { }

\r\n { }

. { }

%%

/* 3ο ΜΕΡΟΣ: ΟΡΙΖΟΥΜΕ ΤΗΝ YYERROR ΠΟΥ ΕΙΝΑΙ ΥΠΕΥΘΥΝΗ ΓΙΑ ΤΑ ΣΦΑΛΜΑΤΑ */

void yyerror(const char* err) {

error_counter++;

printf("[ERROR - LINE %d] %s\n", yylineno , err);

if(error_counter == 5) {

printf("MAXIMUM ERROR FOUND\n");

exit(EXIT_FAILURE);

}

}

(SYNTAX ANALYSIS BISON)

```
%{
```

/* 1ο ΜΕΡΟΣ: ΑΡΧΙΚΑ ΔΗΛΩΝΟΥΜΕ ΤΑ ΕΡΓΑΛΕΙΑ ΠΟΥ ΘΑ ΧΡΗΣΙΜΟΠΟΙΗΣΟΥΜΕ ΣΤΟΝ PARSER ΜΑΣ */

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <stdbool.h>

extern FILE *yyin;
extern int yylex();
extern char *yytext;

extern void yyerror(const char* err);
extern void yyterminate();
extern int lineno,
        line_init;

#define MAX_IDS 100

extern char str_buf[256];

int tnum1;
int tnum2;
int flag=0;
char id[15];
char button[15]="";
int tmp1=0;
```

```
int tmp2=0;




%}
```

/*ΜΕΡΟΣ 2^{Ο}: ΔΗΛΩΝΟΥΜΕ ΤΑ ΤΟΚΕΝS ΠΟΥ ΘΑ ΧΡΗΣΙΜΟΠΟΙΗΣΟΥΜΕ */

```
%error-verbose

%union {
  char* strval;    /* String value */
  int numval;   /* Numeric value */
}

%token T_LINEAR_LAYOUT "linear_layout"
%token T_LINEAR_LAYOUT_END "linear_layout_end"
%token T_RELATIVE_LAYOUT "relative_layout"
%token T_RELATIVE_LAYOUT_END "relative_layout_end"
%token T_TEXTVIEW "textview"
%token T_TEXTVIEW_END "textview_end"
%token T_IMAGEVIEW "imageview"
%token T_IMAGEVIEW_END "imageview_end"
%token T_BUTTON "button"
%token T_BUTTON_END "button_end"
%token T_RADIOBUTTON "radiobutton"
```

```
%token T_RADIOBUTTON_END "radiobutton_end"
%token T_RADIOGROUP "radiogroup"
%token T_RADIOGROUP_END "radiogroup_end"
%token T_PROGRESSBAR "progressbar"
%token T_PROGRESSBAR_END "progressbar_end"
%token T_AN_WIDTH "an_width"
%token T_AN_HEIGHT "an_height"
%token T_AN_ORIENTATION "an_orientation"
%token T_AN_ID "an_id"
%token T_AN_TEXT "an_text"
%token T_AN_SRC "an_src"
%token T_AN_PADDING "an_padding"
%token T_AN_CHECKED_BUTTON "an_checked_button"
%token T_AN_TEXT_COLOR "an_text_color"
%token T_AN_MAX "an_max"
%token T_AN_PROGRESS "an_progress"
%token T_EQUAL "equal"
%token T_END_SYMBOL "end_symbol"
%token T_RANDOM_WORD "random_word"
%token <numval> T_NUMBER "positive number"
%token T_SYMBOL "symbol"
%token T_STRING "string"
%token T_BIG "t_big"
%token T_NEGATIVE "negative number"
%token <strval> T_MP "match_parent"
%token <strval> T_WC "wrap_content"
%token T_AN_RB   "t_an_rb"
```

%start root

%%

/* ΤΩΡΑ ΟΡΙΖΟΥΜΕ ΤΟΥΣ ΚΑΝΟΝΕΣ ΤΟΥ ΣΥΝΤΑΚΤΙΚΟΥ ΤΟΥ PARSER ΜΑΣ */

root: linear_layout {printf("\n\nParsed Successfully! 🔥 \n");}

|T_RELATIVE_LAYOUT relative_layout_attributes T_BIG relative_element_list linear_layout T_RELATIVE_LAYOUT_END {printf("\n\nParsed Successfully! 🔥 \n");}

linear_layout: T_LINEAR_LAYOUT linear_layout_attributes T_BIG linear_element_list relative_layout T_LINEAR_LAYOUT_END { printf("LinearLayout parsed.\n"); };

|T_LINEAR_LAYOUT linear_layout_attributes T_BIG linear_element_list T_LINEAR_LAYOUT_END { printf("LinearLayout parsed.\n"); };

relative_layout: T_RELATIVE_LAYOUT relative_layout_attributes T_BIG relative_element_list T_RELATIVE_LAYOUT_END { printf("RelativeLayout parsed.\n"); };

attribute: T_AN_WIDTH T_EQUAL layout_value T_AN_HEIGHT T_EQUAL layout_value ;

layout_value : T_MP | T_WC | th_number ;

th_number : T_SYMBOL T_NUMBER T_SYMBOL;

```
linear_layout_attributes: attribute linear_layout_optional_attributes | attribute ;

relative_layout_attributes: attribute relative_layout_optional_attributes | attribute;

linear_layout_optional_attributes: T_AN_ID T_EQUAL T_SYMBOL T_STRING
T_SYMBOL  | T_AN_ORIENTATION T_EQUAL T_SYMBOL T_STRING T_SYMBOL

|T_AN_ID T_EQUAL T_SYMBOL T_STRING T_SYMBOL T_AN_ORIENTATION T_EQUAL
T_SYMBOL T_STRING T_SYMBOL | T_AN_ORIENTATION T_EQUAL T_SYMBOL
T_STRING T_SYMBOL T_AN_ID T_EQUAL T_SYMBOL T_STRING T_SYMBOL   ;

relative_layout_optional_attributes: T_AN_ID T_EQUAL T_SYMBOL T_STRING
T_SYMBOL  ;

element: text_view { printf("TextView parsed.\n"); }
      | image_view { printf("ImageView parsed.\n"); }
      | button { printf("Button parsed.\n"); }
      | radio_group { printf("RadioGroup parsed.\n"); }
      | progress_bar { printf("ProgressBar parsed.\n"); }
      | radio_button
      | relative_layout
      | linear_layout ;

relative_element_list: relative_element_list element | element | %empty{};

linear_element_list: element | linear_element_list element;
```

text_view: T_TEXTVIEW text_view_attributes T_END_SYMBOL;

text_view_attributes: attribute text_view_standart_attributes
text_view_optional_attributes

|attribute text_view_optional_attributes text_view_standart_attributes

|attribute text_view_standart_attributes;

text_view_standart_attributes: T_AN_TEXT T_EQUAL T_SYMBOL T_STRING
T_SYMBOL ;

text_view_optional_attributes: T_AN_ID T_EQUAL T_SYMBOL T_STRING T_SYMBOL
| T_AN_TEXT_COLOR T_EQUAL T_SYMBOL T_STRING T_SYMBOL

| T_AN_ID T_EQUAL T_SYMBOL T_STRING T_SYMBOL T_AN_TEXT_COLOR T_EQUAL
T_SYMBOL T_STRING T_SYMBOL

| T_AN_TEXT_COLOR T_EQUAL T_SYMBOL T_STRING T_SYMBOL T_AN_ID T_EQUAL
T_SYMBOL T_STRING T_SYMBOL ;

image_view: T_IMAGEVIEW image_view_attributes T_END_SYMBOL;

image_view_attributes: attribute image_view_standart_attributes
image_view_optional_attributes |attribute image_view_standart_attributes;

image_view_standart_attributes: T_AN_SRC T_EQUAL T_SYMBOL T_STRING
T_SYMBOL ;

image_view_optional_attributes: T_AN_ID T_EQUAL T_SYMBOL T_STRING
T_SYMBOL | T_AN_PADDING T_EQUAL T_SYMBOL T_NUMBER T_SYMBOL

|T_AN_ID T_EQUAL T_SYMBOL T_STRING T_SYMBOL T_AN_PADDING T_EQUAL T_SYMBOL T_NUMBER T_SYMBOL

|T_AN_PADDING T_EQUAL T_SYMBOL T_NUMBER T_SYMBOL T_AN_ID T_EQUAL T_SYMBOL T_STRING T_SYMBOL ;

button: T_BUTTON button_attributes T_END_SYMBOL;

button_attributes: attribute button_standart_attributes button_optional_attributes |attribute button_standart_attributes;

button_standart_attributes: T_AN_TEXT T_EQUAL T_SYMBOL T_STRING T_SYMBOL ;

button_optional_attributes: T_AN_ID T_EQUAL T_SYMBOL T_STRING T_SYMBOL | T_AN_PADDING T_EQUAL T_SYMBOL T_NUMBER T_SYMBOL

|T_AN_ID T_EQUAL T_SYMBOL T_STRING T_SYMBOL T_AN_PADDING T_EQUAL T_SYMBOL T_NUMBER T_SYMBOL

|T_AN_PADDING T_EQUAL T_SYMBOL T_NUMBER T_SYMBOL T_AN_ID T_EQUAL T_SYMBOL T_STRING T_SYMBOL ;

radio_group: T_RADIOGROUP radio_group_attributes T_BIG radio_buttons T_END_SYMBOL | T_RADIOGROUP radio_group_attributes T_BIG radio_buttons T_RADIOGROUP_END

radio_group_attributes: attribute radio_group_standart_attributes radio_group_optional_attributes | attribute radio_group_standart_attributes;

```
radio_group_standart_attributes: T_AN_RB  T_EQUAL T_SYMBOL T_NUMBER
{tmp2=atoi(yytext);} T_SYMBOL  ;


radio_group_optional_attributes: T_AN_ID T_EQUAL T_SYMBOL T_STRING
T_SYMBOL  | T_AN_CHECKED_BUTTON T_EQUAL T_SYMBOL
T_STRING{strcpy(button,yytext);} T_SYMBOL

| T_AN_ID T_EQUAL T_SYMBOL T_STRING T_SYMBOL T_AN_CHECKED_BUTTON
T_EQUAL T_SYMBOL T_STRING{strcpy(button,yytext);} T_SYMBOL

// | T_AN_CHECKED_BUTTON T_EQUAL T_SYMBOL T_STRING
{strcpy(button,yytext);}  T_SYMBOL T_AN_ID T_EQUAL T_SYMBOL T_STRING
T_SYMBOL



radio_buttons: T_RADIOBUTTON radio_button |  T_RADIOBUTTON radio_button
radio_buttons


{

if(flag==0 && button[0]!='\0')

{   yyerror("Invalid checkedButton value\n");

   exit(1);


}


if(tmp1!=tmp2)

{

    yyerror("Invalid RadioButtonNumber value\n");

   exit(1);


}

};
```

```
radio_button:

radio_button_attributes T_END_SYMBOL {tmp1++;};

radio_button_attributes: attribute radio_button_standart_attributes
radio_button_optional_attributes
| attribute  radio_button_optional_attributes radio_button_standart_attributes
| attribute radio_button_standart_attributes;

radio_button_standart_attributes: T_AN_TEXT T_EQUAL T_SYMBOL T_STRING
T_SYMBOL ;

radio_button_optional_attributes: T_AN_ID T_EQUAL T_SYMBOL T_STRING
{strcpy(id,yytext);
if(strcmp(id,button)==0)
   flag=1;
} T_SYMBOL ;
progress_bar: T_PROGRESSBAR progress_bar_attributes T_END_SYMBOL;

progress_bar_attributes: attribute progress_bar_optional_attributes | attribute;

progress_bar_optional_attributes:

T_AN_ID T_EQUAL T_SYMBOL T_STRING T_SYMBOL T_AN_MAX T_EQUAL
T_SYMBOL T_NUMBER {tnum1=atoi(yytext);}  T_SYMBOL T_AN_PROGRESS T_EQUAL
T_SYMBOL T_NUMBER { tnum2=atoi(yytext);}  T_SYMBOL
{
      if (tnum1 >= tnum2) {
         printf("");
      } else  {
```

```
        yyerror("Invalid progress value\n");
        exit(1);
    }

}

|T_AN_MAX T_EQUAL T_SYMBOL T_NUMBER {tnum1=atoi(yytext);}  T_SYMBOL
T_AN_PROGRESS T_EQUAL T_SYMBOL T_NUMBER { tnum2=atoi(yytext);}
T_SYMBOL
{
    if (tnum1 >= tnum2) {
        printf("");
    } else  {
        yyerror("Invalid progress value\n");
        exit(1);
    }

}
|T_AN_PROGRESS T_EQUAL T_SYMBOL T_NUMBER { tnum2=atoi(yytext);}
T_SYMBOL T_AN_MAX T_EQUAL T_SYMBOL T_NUMBER {tnum1=atoi(yytext);}
T_SYMBOL

{
    if (tnum1 >= tnum2) {
        printf("");
    } else  {
        yyerror("Invalid progress value\n");
        exit(1);
    }

}
```

```
|T_AN_ID T_EQUAL T_SYMBOL T_STRING T_SYMBOL T_AN_PROGRESS T_EQUAL
T_SYMBOL T_NUMBER { tnum2=atoi(yytext);}  T_SYMBOL T_AN_MAX T_EQUAL
T_SYMBOL T_NUMBER {tnum1=atoi(yytext);}  T_SYMBOL



{
      if (tnum1 >= tnum2) {
         printf("");
      } else  {
         yyerror("Invalid progress value\n");
         exit(1);
      }

};



attribute_value: T_STRING | T_NUMBER ;

exp: T_EQUAL  T_SYMBOL attribute_value T_SYMBOL ;



%%
```

/*ΜΕΡΟΣ 3^{Ο}: ΕΚΤΕΛΟΥΜΕ ΤΗΝ MAIN */

```
int main ( int argc, char **argv  )
 {

  yyin = fopen( argv[1], "r" );
```

```
  yyparse ();


  return 0;
}
```

SCREENSHOTS ΕΚΤΕΛΕΣΗΣ ΠΡΟΓΡΑΜΜΑΤΟΣ

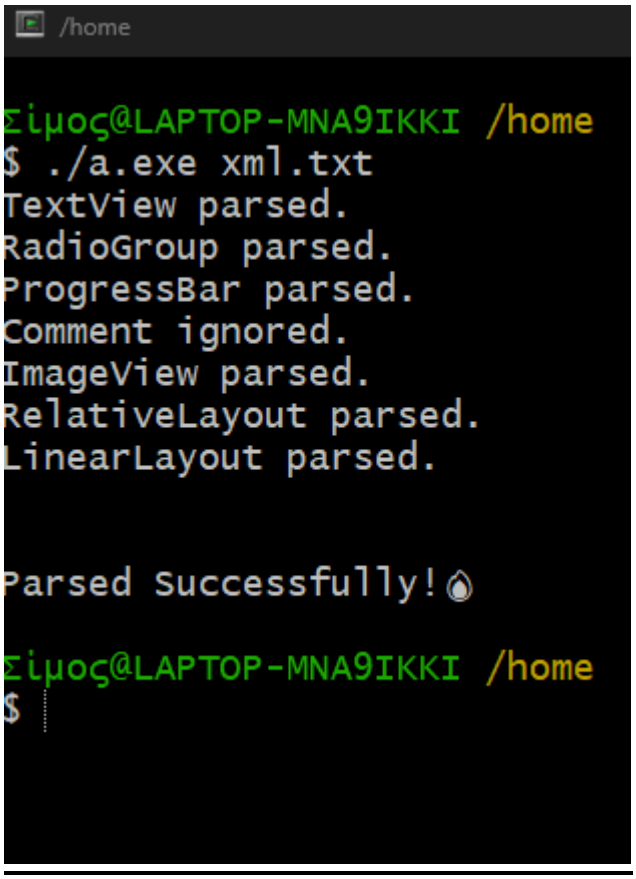
ΑΠΟΔΕΚΤΗ ΕΙΣΟΔΟΣ:

```
<LinearLayout
  android:layout_width="598"
  android:layout_height="35"
  android:orientation="vertical">

<TextView
  android:layout_width= "20"
  android:layout_height="match_parent"
  android:text="Dummy text"
  android:id="TV1"
  />

<RadioGroup
  android:layout_width="30"
  android:layout_height="wrap_content"
  android:rbutton="2"
  android:checkedButton="RB1">

<RadioButton
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
```

```
 android:id="RB1"
 android:text="Option 1"/>

<RadioButton
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:id="RB2"
 android:text="Option 2"/>
</RadioGroup>

<ProgressBar
 android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:id="LH44"
 android:max="21"
 android:progress="20"
 />
<!--This is a comment , ignore me!-->

<RelativeLayout
 android:layout_width="wrap_content"
 android:layout_height="wrap_content">

<ImageView
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:src="image_name"
 android:padding="50"/>
```

```
  </RelativeLayout>
</LinearLayout>
```

SCREENSHOT ΕΚΤΕΛΕΣΗΣ:



ΕΡΩΤΗΜΑ 2 (25%)

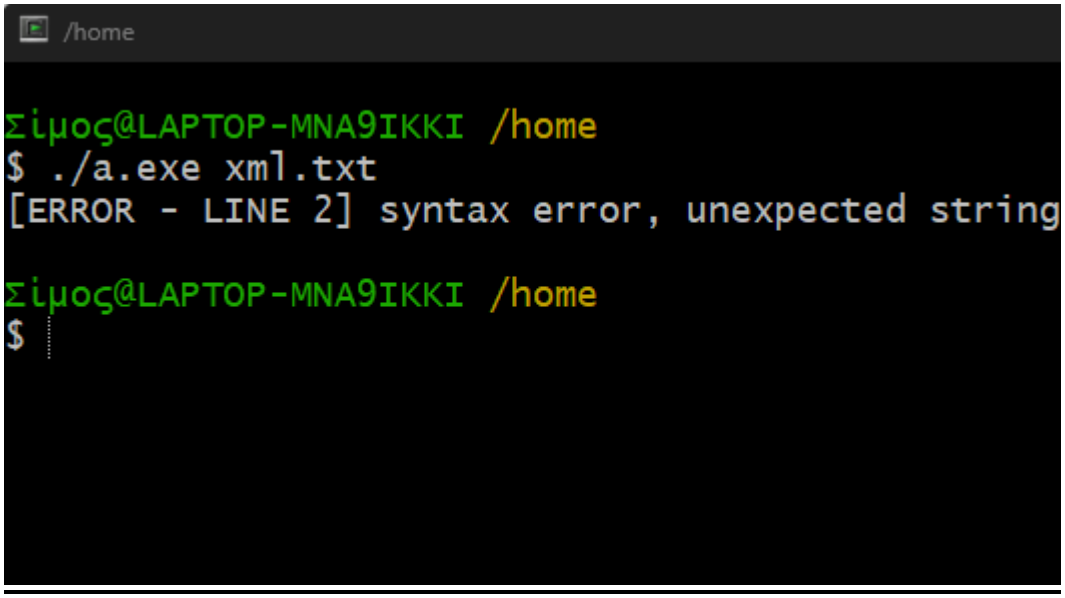
ΑΠΟΡΡΙΠΤΙΚΗ ΕΙΣΟΔΟΣ ΓΙΑ ΤΟ ΕΡΩΤΗΜΑ 2b:

```
<LinearLayout
  android:layout_width="APORRIPTIKI EISODOS"
  android:layout_height="35"
  android:orientation="vertical">
```

```
<TextView
  android:layout_width= "20"
  android:layout_height="match_parent"
  android:text="Dummy text"
  android:id="TV1"
  />

<RadioGroup
  android:layout_width="30"
  android:layout_height="wrap_content"
  android:rbutton="2"
  android:checkedButton="RB1">

<RadioButton
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:id="RB1"
  android:text="Option 1"/>

<RadioButton
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:id="RB2"
  android:text="Option 2"/>
</RadioGroup>

<ProgressBar
 android:layout_width="match_parent"
 android:layout_height="wrap_content"
```

```
 android:id="LH44"
 android:max="21"
 android:progress="20"
 />
<!--This is a comment , ignore me!-->

<RelativeLayout
  android:layout_width="wrap_content"
  android:layout_height="wrap_content">

<ImageView
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:src="image_name"
  android:padding="50"/>

  </RelativeLayout>
</LinearLayout>
```

SCREENSHOT ΕΚΤΕΛΕΣΗΣ:



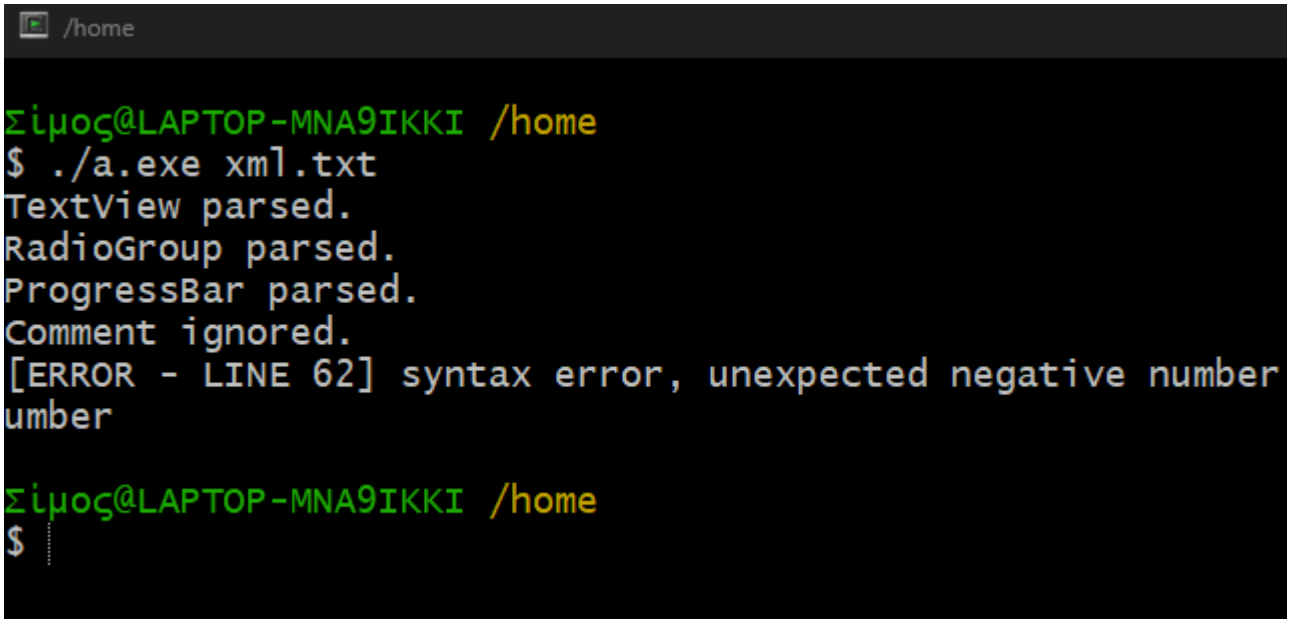
ΑΠΟΡΡΙΠΤΙΚΗ ΕΙΣΟΔΟΣ ΓΙΑ ΤΟ ΕΡΩΤΗΜΑ 2c:

```
<LinearLayout
  android:layout_width="50"
  android:layout_height="35"
  android:orientation="vertical">

<TextView
  android:layout_width= "20"
  android:layout_height="match_parent"
  android:text="Dummy text"
  android:id="TV1"
  />

<RadioGroup
  android:layout_width="30"
  android:layout_height="wrap_content"
  android:rbutton="2"
  android:checkedButton="RB1">
```

```
<RadioButton
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:id="RB1"
 android:text="Option 1"/>

<RadioButton
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:id="RB2"
 android:text="Option 2"/>
</RadioGroup>

<ProgressBar
 android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:id="LH44"
 android:max="21"
 android:progress="20"
 />
<!--This is a comment , ignore me!-->

<RelativeLayout
 android:layout_width="wrap_content"
 android:layout_height="wrap_content">

<ImageView
 android:layout_width="wrap_content"
```

```
 android:layout_height="wrap_content"
 android:src="image_name"
 android:padding="-5"/>

 </RelativeLayout>
</LinearLayout>
```

SCREENSHOT ΕΚΤΕΛΕΣΗΣ:



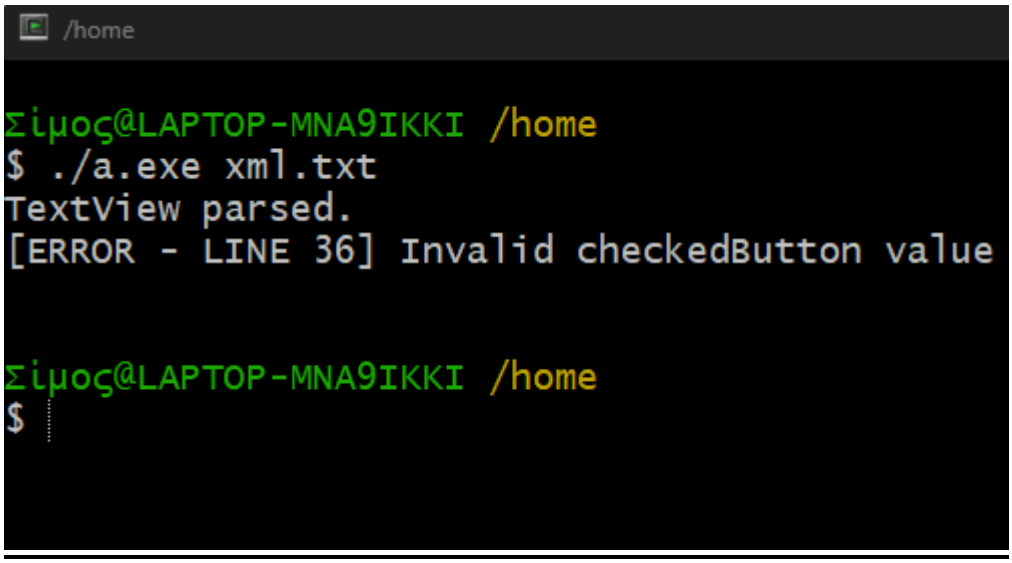
ΑΠΟΡΡΙΠΤΙΚΗ ΕΙΣΟΔΟΣ ΓΙΑ ΤΟ ΕΡΩΤΗΜΑ 2d:

```
<LinearLayout
 android:layout_width="50"
 android:layout_height="35"
 android:orientation="vertical">

<TextView
 android:layout_width= "20"
 android:layout_height="match_parent"
```

```
 android:text="Dummy text"
 android:id="TV1"
 />

<RadioGroup
 android:layout_width="30"
 android:layout_height="wrap_content"
 android:rbutton="2"
 android:checkedButton="INVALID STRING">

<RadioButton
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:id="RB1"
 android:text="Option 1"/>

<RadioButton
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:id="RB2"
 android:text="Option 2"/>
</RadioGroup>

<ProgressBar
 android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:id="LH44"
 android:max="21"
 android:progress="20"
```

```
 />
<!--This is a comment , ignore me!-->

<RelativeLayout
  android:layout_width="wrap_content"
  android:layout_height="wrap_content">

<ImageView
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:src="image_name"
  android:padding="5"/>

  </RelativeLayout>
</LinearLayout>
```

SCREENSHOT ΕΚΤΕΛΕΣΗΣ:

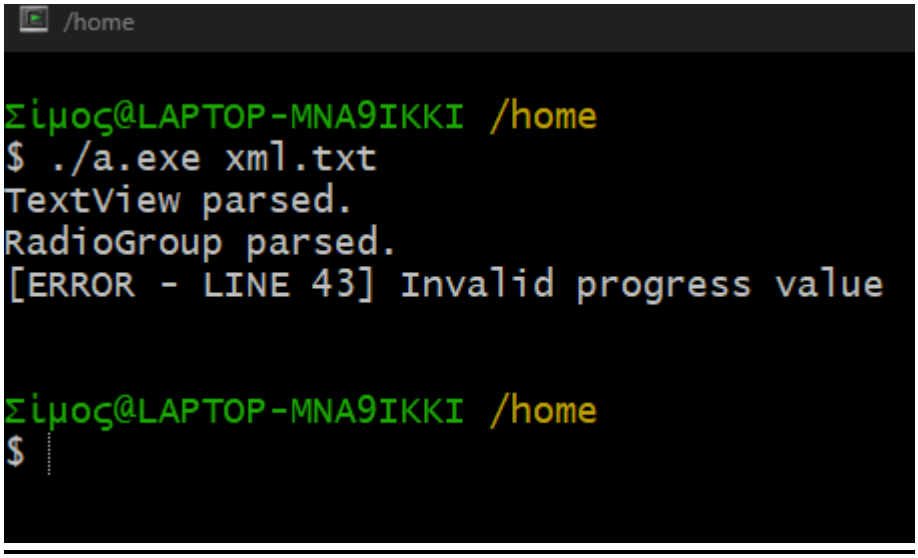


ΑΠΟΡΡΙΠΤΙΚΗ ΕΙΣΟΔΟΣ ΓΙΑ ΤΟ ΕΡΩΤΗΜΑ 2e:

```
<LinearLayout
  android:layout_width="50"
  android:layout_height="35"
  android:orientation="vertical">

<TextView
  android:layout_width= "20"
  android:layout_height="match_parent"
  android:text="Dummy text"
  android:id="TV1"
  />

<RadioGroup
  android:layout_width="30"
  android:layout_height="wrap_content"
  android:rbutton="2"
  android:checkedButton="RB1">

<RadioButton
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:id="RB1"
  android:text="Option 1"/>

<RadioButton
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:id="RB2"
```

```
 android:text="Option 2"/>
</RadioGroup>

<ProgressBar
 android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:id="LH44"
 android:max="21"
 android:progress="22"
 />
<!--This is a comment , ignore me!-->

<RelativeLayout
  android:layout_width="wrap_content"
  android:layout_height="wrap_content">

<ImageView
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:src="image_name"
  android:padding="5"/>

  </RelativeLayout>
</LinearLayout>
```

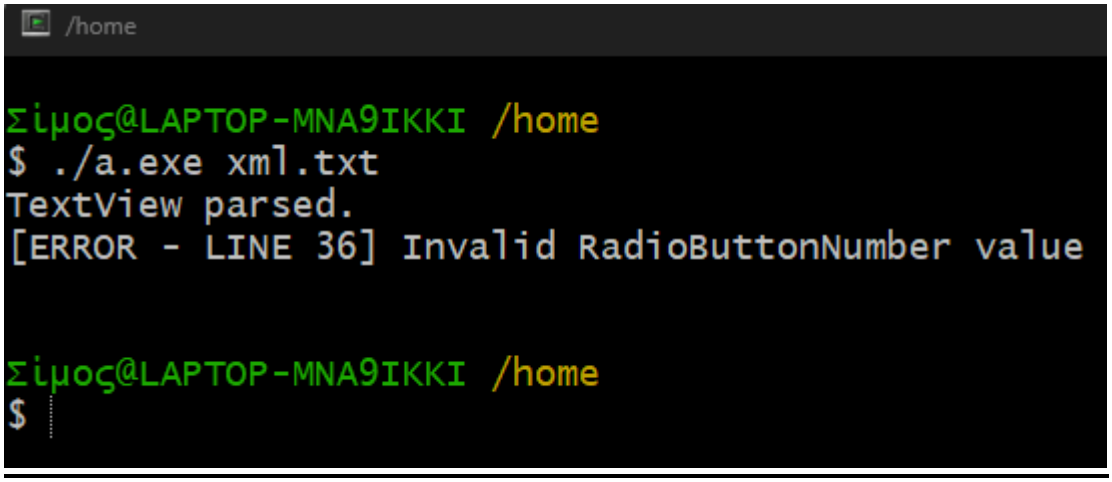
SCREENSHOT ΕΚΤΕΛΕΣΗΣ:



ΕΡΩΤΗΜΑ 3 (15%)

```
<LinearLayout
  android:layout_width="50"
  android:layout_height="35"
  android:orientation="vertical">

<TextView
  android:layout_width= "20"
  android:layout_height="match_parent"
  android:text="Dummy text"
  android:id="TV1"
  />

<RadioGroup
  android:layout_width="30"
  android:layout_height="wrap_content"
  android:rbutton="3"
```

```
 android:checkedButton="RB1">

<RadioButton
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:id="RB1"
 android:text="Option 1"/>

<RadioButton
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:id="RB2"
 android:text="Option 2"/>
</RadioGroup>

<ProgressBar
 android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:id="LH44"
 android:max="21"
 android:progress="20"
 />
<!--This is a comment , ignore me!-->

<RelativeLayout
 android:layout_width="wrap_content"
 android:layout_height="wrap_content">

<ImageView
```

```
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:src="image_name"
  android:padding="5"/>

  </RelativeLayout>
</LinearLayout>
```

SCREENSHOT ΕΚΤΕΛΕΣΗΣ: