E-UČENJE S POWERPOINT PREZENTACIJOM: MODELIRANJE KVIZ PITANJA

E-LEARNING WITH POWERPOINT: DESIGNING QUIZ QUESTIONS

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REZIME

PowerPoint je popularan program za pravljenje jednostavnih prezentacija. Takve prezentacije mogu biti jednolične pri kreiranju interaktivne nastave za studente kojim bi se koristili dok sjede ispred računara. Korištenjem ugrađenog programa, Visual Basic for Applications, interaktivnost PowerPoint-a može biti proširena do neograničenih dimenzija. Ovaj rad ima cilj da predstavi osnovne potprograme koji su potrebni za pravljenje kviz-pitanja i usmjeren je ka edukatorima sa programerskim iskustvom i bez njega. Prezentacije s kviz-pitanjima mogu biti značajan dio elektroničkog učenja.

Professional Paper

SUMMARY

PowerPoint is a popular classroom tool to make simple presentations. Such presentations can be flat when creating interactive lessons for students to use while sitting in front of the computers. Using built-in scripting features, Visual Basic for Applications, the interactivity of PowerPoint can be extended to unlimited dimensions. This paper has to aim to introduce basic scripts needed for modeling quiz questions and it is focused on educators with little or no programming background. Quiz questions can be an important part of the e-learning.

1. UVOD

PowerPoint je poznat kao program za pravljenje prezentacija i većina predavača ga upotrebljava za tu namjenu. Za mnoge predavače *PowerPoint* je zamijenio grafofolije pri čemu se prezentacija može dodatno obogatiti sadržajima kao što su: animacije, zvukovi, linkovi web-stranica, dugmad za navigaciju i sl. Predavači mogu biti zadovoljni ponuđenim mogućnostima i njihove prezentacije mogu biti bogate medijima i privući pažnju studenata neko vrijeme. Ali šta je sa studentima? Oni, u toku dana, sjede po nekoliko sati u učionicama i ono što im na trenutak privuče pažnju i okupi čula, poslije desetak minuta postane dosadno i jednolično. Oni žele da ostave neki trag svog boravka, pa makar to bila i mala slika ili slovo napisano na klupi.

Upravo tu njihovu želju treba razumjeti i iskoristiti je. Oni žele da uzmu aktivno učešće. Ako već sjede ispred računara, onda žele da nešto urade. Možda programski zadatak kome se bliži rok predaje ili da daju komentar na *Facebook* stranici. Tu treba povući liniju. Treba ih od samog početka prezentacije uvući u proces učenja. Postavlja se pitanje kako?

1. INTRODUCTION

PowerPoint is known as software for the making presentation and most teachers use it for this purpose. For many lecturers, *PowerPoint* has replaced old overhead projector whereby presentation can be further enrich with contents such as animations, sounds, web page links, navigation buttons, etc. Teachers can be satisfied with the opportunities offered and their presentations can be rich in media and attract students' attention for a while. But what are about students? During the day, they sit for hours in classrooms, and what attracts them momentarily and seizes them, after ten minutes becomes boring and monotonic. They want to leave some trace of their stay, even if it is a small picture or a letter written on the bench.

It is precisely their desire that needs to be understood and used. They want to take an active part. If they are already sitting in front of a computer then they want to do something. Perhaps a program assignment that is closer to the submission date or to make a comment on the *Facebook* page. There a line should be drawn. From the start of the presentation, they need to get involved in the learning process. The question is how?

Odgovor je interaktivna *PowerPoint* prezentacija koja sadrži kviz-pitanja.

2. JEDNOSTAVNI POTPROGRAMI ZA PRAVLJENJE KVIZ-PITANJA U POWERPOINTU

Neki primjeri iz ovog odjeljka su već prezentovani u radu [1] Žiga i Alajbegović (2017). Primjeri su ponovljeni kako bi čitalac imao potpuniji sliku o kreiranju kviza i kako bi se predstavile dopune kao što je sličica koja nudi pomoć ili jednostavniji zapis potprograma (*macro*a).

Prvi slajd kviza treba da sadrži naziv oblasti i dugme koje označava pokretanje kviza. Ovom dugmetu se pridružuje *macro* naziva `TvojeIme` za unošenje imena studenta (Slika 1). Pritiskom na dugme, pojavljuje se *InputBox* za unos imena i prezimena. Nakon unosa, pritiskom na tipku `OK`, pojavljuje se pozdravna poruka pozivom potprocedure `Pozdrav`.

The answer is an interactive *PowerPoint* presentation with quiz questions.

2. SIMPLE SUBROUTINES FOR MAKING QUIZ QUESTIONS IN POWERPOINT

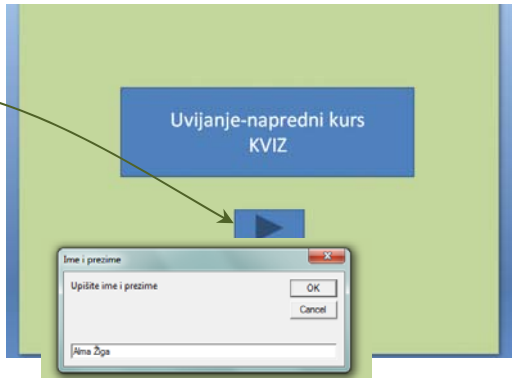
Some examples from this section were already presented in paper [1] Žiga and Alajbegović (2017). The examples were repeated so that the reader would have a more complete picture of the creation of the quiz, and to present the additions such as small picture who offers help or simpler form of subroutines (macros).

The first slide should include the subject name and the button that indicates the start. A macro called `TvojeIme` has been attached to this button to enter a student name (Figure 1). By pressing the button, *InputBox* appears to enter the name and surname. After the entering, by pressing the `OK` button, a greeting message appears by calling the macro `Pozdrav`.

```
Dim korisnikIme As String

Sub TvojeIme()
korisnikIme = InputBox(prompt:="Upišite ime i prezime", _
Ti tle:="Ime i prezime")
Pozdrav
ActivePresentation.SlideShowWindow.View.Next
End Sub

Sub Pozdrav()
MsgBox "Dobro došli ," & korisnikIme & Chr$(13) & _
"Pažljivo odgovarajte." & Chr$(13) & "Samo prvi pokušaj se broji."
End Sub
```



Slika 1. *Macro za unos imena studenta*
Figure 1 *Macro for the student name input*

Postoje četiri osnovna tipa kviz-pitanja:

- Izaberi tačan odgovor između više ponuđenih.
- Dopuni iskaz odgovarajućim tekstom ili brojkom.
- Napravi par.
- "Hot spot" – označi pravo mjesto.

Na slajdu na Slici 2 dat je primjer za "Hot spot"- označi pravo mjesto. Mogućnost označavanja data je preko *Option Button* tipke. Ona se aktivira klikom, čime njena vrijednost postaje *True*.

U dnu slajda (Slika 2) je sličica kojota koja nudi pomoć. Klikom na nju pojavit će se oblak sa slikom koja ima tačne odgovore.

There are four basic types of quiz questions:

- Choose the correct answer among the more offered.
- Complete the statement with the appropriate text or number.
- Make a pair.
- "Hot spot" - mark the right place.

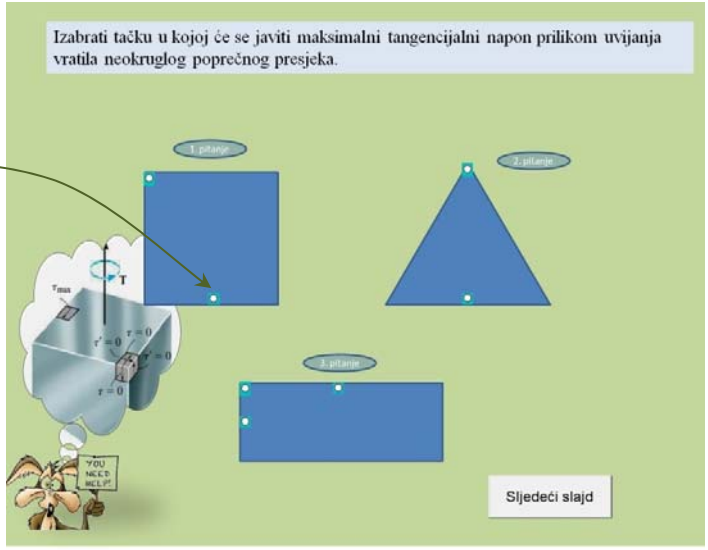
Slide on Figure 2 is an example of a “Hot spot”– mark the right place. The marking is provided via the *Option Button*. It is activated by mouse click, which means that its value becomes *True*. At the bottom of the slide (Fig. 2) is a small picture of a coyote who offers help. The click on it will create a cloud with a picture which has the correct answers.

```
Dim qAnswered(20) As Boolean

Private Sub nuliranje()
Dim i As Long
For i = 1 To 20
qAnswered(i) = False
Next i
End Sub

Private Sub OptionButton2_Click()
Dim i As Long
i = 1
If OptionButton2.Value Then
MsgBox ("Tačno.")
If qAnswered(i) = False Then
        bodovi = AddToScore(1)
        qAnswered(i) = True
      End If
End If

End Sub
Function AddToScore (iIncrement As Integer) As Integer
      ISCORE = ISCORE + iIncrement
      AddToScore = ISCORE
End Function
```



***Slika 2**. Macro za "Hot spot"*
***Figure 2** Macro for the "Hot spot"*

U *macro*u na Slici 2 data je mogućnost praćenja odgovora na postavljena pitanja preko niza `qAnswered(i).` Potprogram `nuliranje` postavlja sve vrijednosti niza na *False* (neodgovoreno pitanje). Čim se pitanje prvi put odgovori i ako je odgovor tačan, poziva se funkcija `AddToScore(1)` koja uvećava osvojeni broj bodova za 1. Vrijednost `qAnswered(i)` postaje *True* i dalje ne postoji mogućnost osvajanja dodatnih poena na istom pitanju. Na isti način mogu se evidentirati i netačno odgovorena pitanja.

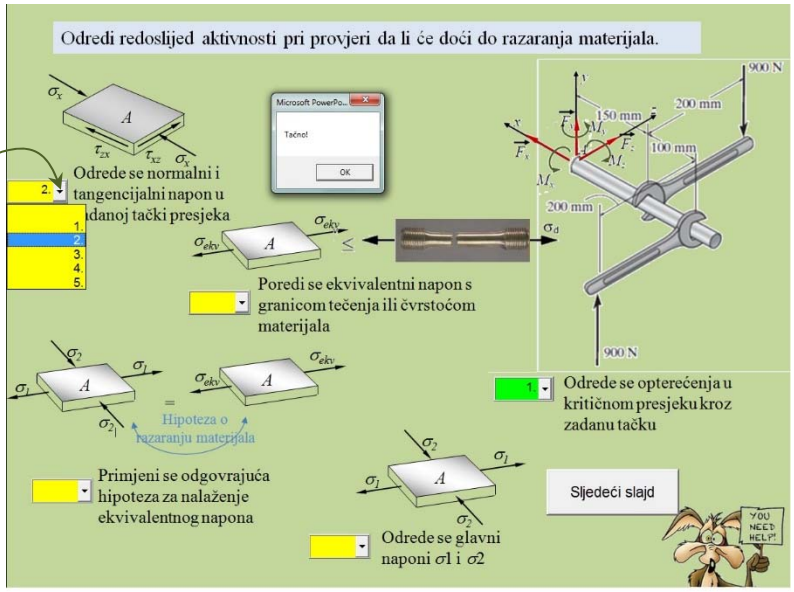
Za tip pitanja "izaberi odgovor između više ponuđenih", mogu se koristiti *Option Button* tipke, *CheckBox* tipke ili opcija padajućeg menija preko *ComboBox*a. Primjer upotrebe *ComboBox*a dat je na Slici 3. Na slajdu na Slici 3 je postavljeno pet aktivnosti i svakoj treba pridružiti odgovarajući redni broj. Potprogram `UserForm` stvara padajući meni od pet bojeva za svaku aktivnost. Potprogram `ComboBox2` daje mogućnost izbora s liste menija (*DropButtonClick*). Klikom na odgovarajući broj, provjerava se tačnost izbora. U slučaju pogrešnog izbora pojavljuje se poruka: "Niste dobro izabrali. Pokušajte ponovo!". Kod izbora tačnog odgovara pojavljuje se poruka "Tačno!" i polje s brojem postaje zeleno.

The macro in Figure 2 gives you the ability to track the answers to the questions through the array `qAnswered (i)`. Macro `nuliranje` sets all array values to False (unanswered question). As soon as the question is answered for the first time and if the answer is correct, the `AddToScore` (1) function is called, which increases the score for 1. The value of `qAnswered` (i) becomes *True*, and there is no possibility of getting additional points on the same question. Similarly, incorrectly answered questions may also be recorded.

For the type of question "Choose the right answer", you can use the *Option Button* keys, the *CheckBox* keys, or the dropdown menu of the *ComboBox*. An example of using *ComboBox* is given in Figure 3. There are five actions in the Slide (Fig. 3) and each one should be joined by the appropriate ordinal number. Subprogram `UserForm` creates a dropdown menu with five numbers for each activity. The subroutine `ComboBox2` provides a choice from the dropdown list (*DropButtonClick*). By clicking on the appropriate number, the selection is checked. In the case of the wrong selection, a message appears: "You have not chosen well. Please try again!" When the correct answer is chosen, the message "Correct!" is shown and the field with the number becomes green.

```
Private Sub UserForm()
For j = 1 To 5
With Slide2.Shapes
("ComboBox"&j).OLEFormat.Object.Object
 .Style = fmStyleDropDownCombo
 .DropButtonStyle = fmDropButtonStyleArrow
      If .ListCount = 0 Then
      .AddItem " "
      .AddItem "1."
      .AddItem "2."
      .AddItem "3."
      .AddItem "4."
      .AddItem "5."
      End If
End With
Next
End Sub

Private Sub ComboBox2_DropButtonClick()
Dim i As Long
i = 2
UserForm
Select Case ComboBox2.Value
 Case 0, 1, 3, 4, 5
     MsgBox ("Niste dobro izabrali. Pokušajte
                ponovo!")
      ComboBox2.Clear
  Case 2
      MsgBox ("Tačno")
    ComboBox2.BackColor = vbGreen
      End Select
End Sub
```



Slika 3. *Macro za Combo box*
Figure 3 *Macro for the Combo box*

Tip pitanja "dopuni iskaz odgovarajućim tekstom ili brojkom" može se realizovati upotrebom polja za unos, odgovarajućeg oblika (engl. *Shape*). U primjeru na Slici 4 to je pravougaonik (naziva "*Rectangle* 17") kome se pridružuje potprogram `Odgovor3`. Klikom na pravougaonik pojavljuje se *InputBox* u koji treba unijeti odgovarajući tekst. Ako je tekst ispravan, pojavljuje se poruka: "Tačno!". Ako nije, pojavljuje se poruka: "Niste dobro napisali. Pokušajte ponovo!"

Tip pitanja “dopuni iskaz” može se napraviti pomoću macroa za pomjeranje objekata. Zbog složenosti ovaj macro objasnit će se u posebnom odjeljku.

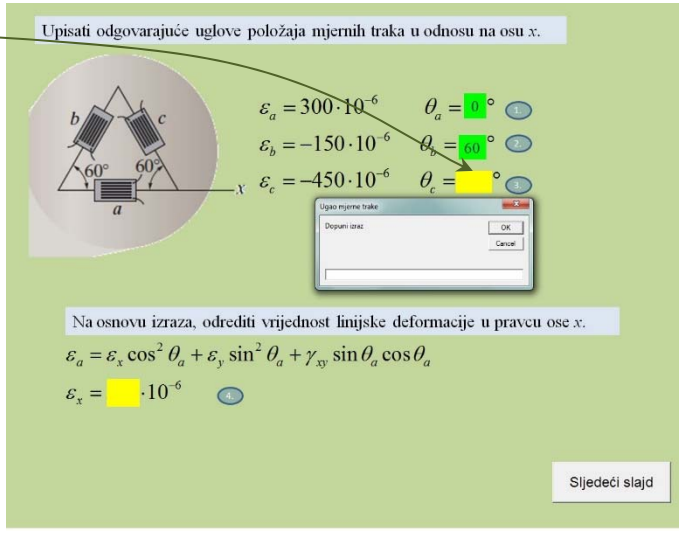
PowerPoint ima dva moda rada: za unos i pravljenje prezentacije (*edit mode*) i mod za prezentaciju (*slideshow mode*). U modu za prezentaciju nije moguće pomjerati objekte. Međutim, ta osobina može biti promijenjena upotrebom VBA *macro*a pod nazivom *DragAndDrop*. Prvim klikom na objekat (LMB-*left mouse button*), objekat počinje da slijedi kursor sve do ponovnog klika (LMB), kada objekat dođe u željenu poziciju.

Type of question "Complete a statement with the appropriate text or number" can be realized using the input field with the appropriate *Shape*. In the example in Figure 4, this is a rectangle (named "*Rectangle* 17") to which the subroutine `Odgovor3` is attached. The click on the rectangle will display the *InputBox* where the appropriate text should be entered. If the text is correct, a message is displayed: " Right! ". If it does not, the message: "You are not well written. Try again!"

The question type "Complete a statement" can be made using the macro to move the objects. Due to the complexity of this macro, it will be explained in a separate section.

PowerPoint has two modes of operation: for editing (*edit mode*) and *slideshow* mode. It is not possible to move objects in slideshow mode. However, this feature can be changed using a VBA macro called *DragAndDrop*. By first clicking on the object (LMB-left mouse button), the object begins to follow the cursor until the re-click (LMB), when the object reaches the desired position.

```
Sub Odgovor3()
Dim tekst As String
tekst = InputBox(Prompt:="Dopuni izraz",
 Title:="Ugao mjerne trake")
If tekst = "120" Then
   With ActivePresentation.SlideShowWindow.
    View.Slide.Shapes("Rectangle 17")
   .TextFrame.TextRange.Text = tekst
   .Fill.ForeColor.RGB = vbGreen
   .Visible = True
   MsgBox ("Tačno")
   End With
Else
   MsgBox ("Niste dobro napisali. Pokušajte ponovo!")
    With ActivePresentation.SlideShowWindow.
    View.Slide.Shapes("Rectangle 17")
   .TextFrame.TextRange.Text = " "
   .Visible = True
   End With
End If
End Sub
```



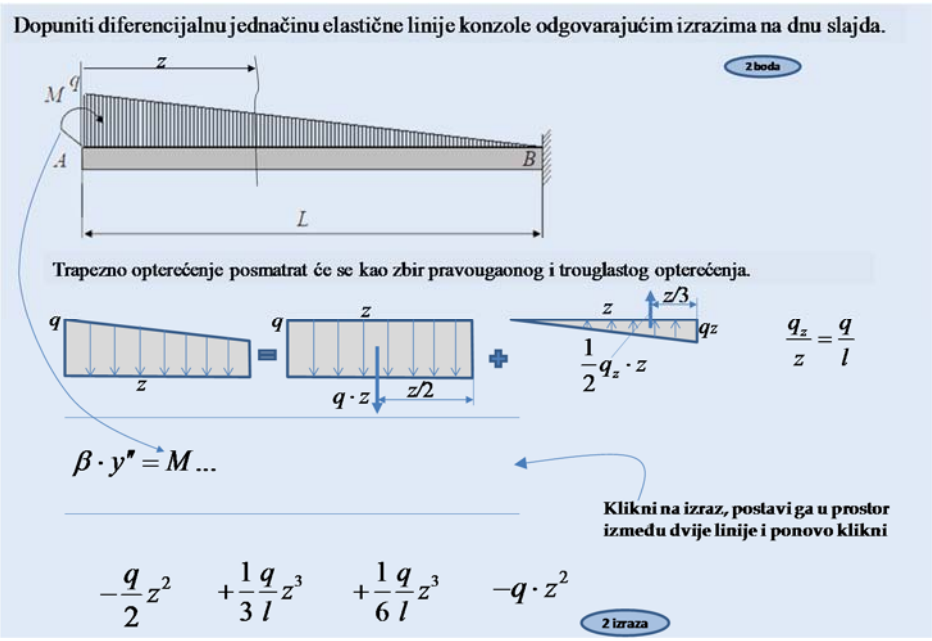
Slika 4. *Macro za unos u polje*
Figure 4 *Macro for the input*

3. POTPROGRAM ZA POMJERANJE OBJEKATA

Originalan kod napravio je Hans W. Hofmann i može se naći na internet stranici [2], Drag & Drop Macro for PowerPoint (2018). Kod smo djelimično izmijenili kako bismo ga prilagodili za pravljenje kviz-pitanja: dopuni iskaz. Kodu su dodane linije u kojima se provjerava tačnost pozicije pomjerenog objekta. Detalje koda razmotrit ćemo na primjeru kviza koji je pripremljen za predavanje iz predmeta Otpornost materijala II (Slika 5.).

3. SUBROUTINE TO MOVE OBJECTS

The original code was made by Hans W. Hofmann and can be found on the website [2], Drag & Drop Macro for PowerPoint (2018). We've partially changed it to adjust it to make quiz-questions: Complete a statement. The code was supplemented with the lines in which the accuracy of the position of the moved object is checked. The details of the code will be considered in the example of the quiz prepared for lecture Strength of Material II (Figure 5).



Slika 5. *Slajd s primjerom pomjeranja objekata*
Figure 5 *Slide with the example of moving objects*

Na dnu slajda na Slici 5 su data četiri izraza. Samo su dva tačna: prvi (usljed pravougaonog opterećenja) i treći izraz (usljed trouglastog opterećenja). Tačnim izrazima treba dopuniti diferencijalnu jednačinu elastične linije.

U modu prezentacije potreno je kliknuti na odgovarajući izraz, čime on počinje da slijedi kursor, postaviti ga u prostor između dvije linije i ponovo kliknuti da bi izraz stao. Dodatno je postavljen i timer (pravougaonik nazvan "Timer"), koji se pojavljuje u lijevom gornjem uglu izraza prilikom njegovog pomjeranja (Slika 8). Podešeno je da izraz može biti pomjeran tri sekunde i tada se zaustavlja na mjestu na kome se našao. Nakon zaustavljanja izraza vrši se procjena njegovog položaja. Ako je položaj dobar, javlja se poruka: "Tačno!" (Slika 9). Ako se izabere netačan izraz i pomjeri u prostor između dvije linije, nakon njegovog zaustavljanja, pojavit će se poruka : "Netačno!"i izraz će se vratiti na početnu poziciju.

Kod potprograma za pomjeranje pod nazivom `DragAndDrop`, dat je na Slici 6. Klikom na objekat promjenjivom `currSlnum` se evidentira broj slajda na kome se objekat nalazi. Logička promjenjiva `dragMode` koja u početku ima vrijednost *False*, sada poprima vrijednost *True*. Do ponovnog klika ili isteka 3 sekunde, objekat slijedi kretanje kursora po ekranu (pozivom na potprogram `Drag`). Nakon toga, promjenjiva `dragMode` poprima vrijednost *False* i objekat se zaustavlja.

The four expressions are given at the bottom of the slide in Figure 5. Only two are correct: the first (due to rectangular load) and the third (due to triangular load). The differential equations of the elastic line should be completed with the correct expressions.

In the slideshow mode, one should click on the appropriate expression, by which it begins to track the cursor, place it in the space between the two lines, and click again to stop the expression. Additionally, there is a timer (rectangle named "Timer") which appears in the upper left corner of the expression when it moves (Fig. 8). It is set that the expression can be moved for three seconds and then stops. After its stop, an estimate of its position is made. If the position is good, a "Correct!" message is displayed (Fig. 9). If an inaccurate expression is selected and moved to the space between the two lines, after its stop, an "Incorrect!" message will appear and the expression will return to the initial position.

The `DragAndDrop` macro is given in the Figure 6. By the clicking on the object, variable `currSlnum` records the number of slides. The logically variable `dragMode`, which initially has a *False* value, now gains *True* value. To re-click or expire 3 seconds, the object follows the movement of the cursor on the screen (by calling the subroutine `Drag`). After that, the variable `dragMode` gets the *False* value and the object stops.

```
Sub DragAndDrop(oShp As Shape)
   currSldnum = SlideShowWindows(1).View.CurrentShowPosition
   dragMode = Not dragMode
' ===== CHECKING THE RESOLUTION SETTINGS =====
   dx = GetSystemMetrics(SM_SCREENX)  'dx=1400
   dy = GetSystemMetrics(SM_SCREENY)  'dy=900
   If dragMode Then Drag oShp
   shCentx = oShp.Left + oShp.Width / 2
   shCenty = oShp.Top + oShp.Height / 2
   ActivePresentation.Slides(currSldnum).Shapes("Timer").TextFrame.TextRange.Text = " "
   If ibr = 1 And oShp.Name = "Obj2" Then MsgBox "Netačno": oShp.Top = 450: oShp.Left = 180: Poeni (oShp.Name)
   If  ibr = 1 And oShp.Name = "Obj1" And oShp.Top < 440 And oShp.Top > 330 Then MsgBox "Tačno": Poeni (oShp.Name)
   If  ibr = 1 And oShp.Name = "Obj3" And oShp.Top < 440 And oShp.Top > 330 Then MsgBox "Tačno": Poeni (oShp.Name)
   If ibr = 1 And oShp.Name = "Obj4" Then MsgBox "Netačno": oShp.Top = 460: oShp.Left = 387: Poeni (oShp.Name)
   If ibr = 1 And (oShp.Top > 440 Or oShp.Top < 330) And (oShp.Name = "Obj1" Or oShp.Name = "Obj3") Then MsgBox "Pokusaj
ponovo"
   DoEvents
   ibr = 0
End Sub
```

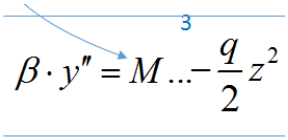
Slika 6. *Potprogram DragAndDrop*
Figure 6 *Subroutine DragAndDrop*

Kod potprograma `Drag` dat je na Slici 7. Naredba `GetCursorPos` daje *x* i *y* koordinatu pozicije kursora na monitoru i to u pixelima. S druge strane, pozicija objekta na slajdu (npr. `oShp.Top`) je u jedinici points (1 cm=28,35 points-a). Za obje pozicije koordinatni početak je gornji lijevi ugao monitora, odnosno slajda. Prilikom izrade prezentacije definišu se dimenzije slajda. U ovom primjeru to je 33,86x19,05 cm (960x540 points-a), dok je rezolucija monitora: 1440x900 pixel-a. Da bi objekat ispravno slijedio kursor, potrebno je koordinate kursora (u pixel-ima) pretvoriti u koordinate u points-ima. U kodu ta veza je data pomoću promjenjivih *dx*, *dy*, *sx* i *sy*.

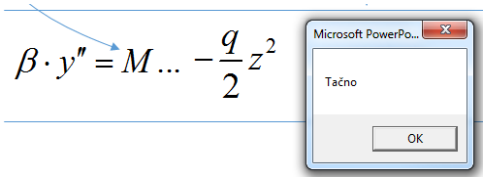
The `Drag` macro is given in Figure 7. The `GetCursorPos` command gives the *x* and *y* coordinates of the cursor position on the monitor in the unit of pixels. On the other hand, the position of the object (e.g. `oShp.Top`) in the slide is in the unit of points (1 cm = 28.35 points). For both positions, the origin is the upper left corner of the monitor or the slide, respectively. When creating a presentation, the dimension of the slide was defined. In this example it is 33.86x19.05 cm (960x540 points), while the monitor resolution is 1440x900 pixels. To have the cursor properly followed by the object, it is necessary to convert the cursor coordinates (in pixels) into the coordinates in the points. In the code this link is given by the variables: *dx, dy, sx* and *sy*.

```
Private Sub Drag(oShp As Shape)
 Dim mWnd As Long
 Dim sx As Long, sy As Long
 Dim WR As RECT
 Dim StartTime As Single
 Const DropInSeconds = 3
 GetCursorPos mPoint  'Gets the cursor's current location and assigns it in the mPoint variable
 mWnd = WindowFromPoint(mPoint.x, mPoint.y) ' Find a handle to the window that the cursor is over
 ibr = ibr + 1
 GetWindowRect mWnd, WR ' Get the dimensions of the window
 sx = WR.lLeft  'sx=0
 sy = WR.lTop  'sy=0
 Debug.Print sx, sy
 With ActivePresentation.PageSetup
  dx = (WR.lRight - WR.lLeft) / .SlideWidth        'WR.lRight=1440,SlideWidth=960, dx=1.5
  dy = (WR.lBottom - WR.lTop) / .SlideHeight    'WR.lBottom=900, SlideHeight=540, dy=1.67
   Select Case True
   Case dx > dy
     sx = sx + (dx - dy) * .SlideWidth / 2
     dx = dy
   Case dy > dx
     sy = sy + (dy - dx) * .SlideHeight / 2              'sy=45
     dy = dx
  End Select
 End With
  StartTime = Timer
 While dragMode
  GetCursorPos mPoint
  oShp.Left = (mPoint.x - sx) / dx - oShp.Width / 2
  oShp.Top = (mPoint.y - sy) / dy - oShp.Height / 2
  ActivePresentation.Slides(currSldnum).Shapes("Timer").Left = oShp.Left - 10
  ActivePresentation.Slides(currSldnum).Shapes("Timer").Top = oShp.Top - 9
  ActivePresentation.Slides(currSldnum).Shapes("Timer").TextFrame.TextRange.Text=CInt(DropInSeconds- (Timer - StartTime))
  DoEvents
     If Timer > StartTime + DropInSeconds Then dragMode = False
 Wend
 DoEvents
End Sub
```

Slika 7. *Potprogram Drop*
Figure 7 *Subroutine Drop*



Slika 8. *Odbrojavanje (timer) prilikom pomjeranja objekta (broj 3 u gornjem lijevom uglu)*
Figure 8 *Timer when object is moving (number 3 in the upper left corner)*

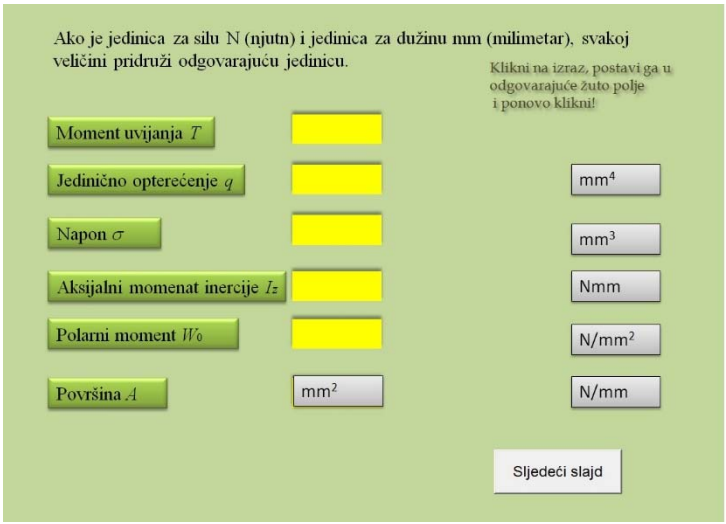


Slika 9. *Poruka da je izabran ispravan izraz*
Figure 9 *Message that the correct expression was chosen*

Tip pitanja "napravi par" može se realizovati upotrebom *macro*a za pomjeranje objekata. Primjer je dat na Slici 10, zajedno s *macro*om. U ovom primjeru potrebno je spojiti veličinu s odgovarajućom jedinicom. Na lijevoj strani slajda su veličine, a na desnoj jedinice. *Textbox*ovima s jedinicama (koji su dobili mena *Shape k, k*=1,6) je pridružen macro za pomjeranje. Potrebno je svaku jedinicu pomjeriti u odgovarajuće žuto polje pored njene veličine. Ako je napravljeno ispravno pomjeranje, jedinica će se zaustaviti u žutom polju i javit će se poruka "Tačno!". Ako ne, javit će se poruka "Pokušajte ponovo!" i jedinica će se vratiti na početnu poziciju.

The question type " make a couple " can be realized using a macro to move objects. An example is given in Figure 10, along with the macro. In this example, it is necessary to connect the property with the appropriate unit. On the left side of the slide are the properties and on the right are units. A macro to move objects is associated to the *Textboxes* with units (named *Shape k, k*=1, 6). Each unit needs to be moved to the corresponding yellow field next to its property. If a correct move has been made, the unit will stop in the yellow field and the message " Right! " will be displayed. If not, a "Try Again!" message will appear and the unit will return to its initial position.

```
Sub DragAndDrop(oShp As Shape)
   currSldnum =
SlideShowWindows(1).View.CurrentShowPosition
   dragMode = Not dragMode
   Pozicije  'Start and Finish positions of the units
   DoEvents
   dx = GetSystemMetrics(SM_SCREENX)
   dy = GetSystemMetrics(SM_SCREENY)
   Stringk = Mid(oShp.name, 7, 1)  ' k from Shape k
   k = Cint(Stringk)
   Drag oShp
   If (ibr = 0 Or ibr = 1) And oShp.Top < Finishy(k) +30
And oShp.Top > Finishy(k) – 30 Then
   MsgBox „Tačno“
   ElseIf (ibr = 0 Or ibr = 1) Then
   MsgBox „Pokusajte ponovo!“
   oShp.Top = Starty(k)
   oShp.Left = Startx(k)
  End If
   DoEvents
   ibr = 0
End Sub
```



Slika 10. *Macro za tip pitanja: napravi par*
Figure 10 *Macro for the question type: make a pair*

4. PREZENTACIJA S KVIZ PITANJIMA

Kviz-pitanja su važan dio sadržaja e-učenja. Kvizovi su osmišljeni kako bi procijenili napredak studenata, ali druga funkcija takvih alata je učenje, a ne samo mjerenje.

4. PRESENTATION WITH QUIZ QUESTIONS

Quiz questions are a vital part of e-Learning content. Quizzes are designed to evaluate students' progress, but another function of such tools is teaching, not just measurement.

Prezentacija s kviz-pitanjima čini učenje interaktivnim, informativnim i jednostavnim.

U radu je dato nekoliko primjera kako napraviti kviz-pitanje u *PowerPoint* prezentaciji. Objašnjena je mogućnost evidentiranja tačnih i netačnih odgovora. Ostvareni bodovi studenata mogu biti isprintani ili automatski zabilježeni u npr. *Excel file*. Time nastavnik, osim spiska prisutnih studenata, ima i povratnu informaciju o razumijevanju materije. Studentima se može dati mogućnost da odgovaraju na postavljeno pitanje sve dok ne dođu do tačnog odgovora. Uz neko pitanje može se postaviti dugme s upitnikom koje nudi pomoć u vidu objašnjenja u posebnom prozoru. Sve ono što studentima zadaje poteškoće, kao i njihove sugestije, treba uzeti u obzir prilikom izrade narednih prezentacija.
Dobra strana VBA *macro*a u ovom radu, kao i *macro*a različitih namjena koje čitalac može pronaći na Internetu [3-5], je ta što ih osoba koja ih želi upotrebljavati, ne mora detaljno razumjeti. Dovoljno je elementarno poznavanje nekog programskog jezika poput *Fortran*a, kako bi korisnik pomenute *macro*e mogao prilagoditi svojoj prezentaciji. Naravno, što veće znanje predavač ima iz oblasti programiranja, to će imati i veće mogućnosti da napravi kvalitetnije i maštovitije prezentacije. Za uzvrat, imat će veću pažnju studenata tokom predavanja i na kraju može očekivati da će studenti pokazati bolje rezultate na završnim testovima provjere znanja.

Presentation with quiz questions makes the learning process interactive, informative and simple.
The paper gives several examples of how to make quiz question in the *Powerpoint* presentation. It is possible to record accurate and inaccurate answers. Students' points can be printed or automatically recorded in *Excel* file, for example. The teacher, besides the list of present students, also has the feedback about the understanding of the subject. Students could have the opportunity to answer the question until they get the correct answer. Near some questions, a question mark button can be placed which provides help with the explanation in a special window. All the problems faced by students, as well as their suggestions, should be taken into account when making the next presentations.
The good side of the VBA macros in this paper, as well as the macros of different purposes that the reader can find on the Internet [3-5], is that the person who wants to use them does not have to understand them in detail. It's just elementary knowledge of a programming language like *Fortran* is desirable, so that the user of the mentioned macros can adapt them to own presentation. Of course, the more knowledge the lecturer has in the field of programming, he will have greater opportunities to make better and more imaginative presentations. In return, he will have more students' attentions during the lecture and can ultimately expect students to show better results on their final assessment tests.

5. REFERENCES

[1] Žiga, A. i Alajbegović, H. (2017). *Interaktivna PowerPoint prezentacija*, *Quality 2017*, 349-354.
[2] Drag & Drop Macro for PowerPoint. Retrieved January 12, 2018, from http://youpresent.co.uk/drag-drop-macro-powerpoint/
[3] Marcovitz, David M. (2012). *Powerful powerpoint for educators: Using visual basic for applications to make powerpoint interactive*. USA: Abc-Clio. Retrieved January 12, 2018, from http://www.loyola.edu/edudept/PowerfulPowerPoint/ExamplesByChapter.html
[4] PowerPoint and VBA for PPTLive, Retrieved January 12, 2018, from http://www.steverindsberg.com/pptlive/index.html
[5] PowerPoint VBA, Retrieved January 12, 2018, from http://officeoneonline.com/vba.html

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