Środowiska programistyczne języka Pascal

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#### Historia języka

- 1970 Niklaus Wirth opracowuje standardową wersję języka
- 1983 Borland wydaje Turbo Pascal 1.0
- 1987 Powstaje GNU Pascal
- 1988 Turbo Pascal 5.0 wprowadzenie obiektowości
- 1995 Delphi 1.0 formalne wprowadzenie Object Pascala
- 1999 Lazarus 1.0 darmowy odpowiednik Delphi
- 2000 Free Pascal 1.0 opracowany przez Floriana Klaempfla
- 23 lutego 2013 Najnowsza wersja Free Pascala: 2.6.2

#### Free Pascal Obecnie

- Jedyny ciągle rozwijany darmowy kompilator Pascala
- Kompatybilny ze wszystkimi dialektami Pascala:
  - standardowa definicja Pascala
  - Borland Turbo Pascal
  - Object Pascal/Delphi
  - GNU Pascal
  - przeplatanie dialektów w ramach jednego programu
- Obsługuje wiele nowoczesnych rozwiązań programistycznych:
  - interfejsy okienkowe: WinAPI, GTK+ itp....
  - grafika komputerowa: OpenGL, DriectDRAW itp....
  - sterowanie peryferiami i urządzeniami

#### Wieloplatformowość

Główną zaletą Free Pascala jest wieloplatformowość:

\$	ARM 🔶	Intel/i386 🔶	PowerPC/PowerPC64 +	SPARC +	AMD64/x86_64 +
Windows 32-bit	Nie	Tak	Nie	Nie	Nie
Windows 64-bit	Nie	Tak	Nie	Nie	Tak
Windows CE	Tak	Tak	Nie	Nie	Nie
Linux	Tak	Tak	Tak	Tak	Tak
Mac OS X	Nie	Tak	Tak	Nie	Nie
Solaris	Nie	Tak	Nie	Tak	Nie
FreeBSD	Nie	Tak	Nie	Nie	Tak
DOS	Nie	Tak	Nie	Nie	Nie
Haiku	Nie	Tak	Nie	Nie	Nie
OS/2	Nie	Tak	Nie	Nie	Nie
Game Boy Advance	Tak	Nie	Nie	Nie	Nie
Nintendo DS	Tak	Nie	Nie	Nie	Nie

🧱 Free Pascal IDE						
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Free Pascal IDE
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                               ReadKev:
  end; {parametry}
   procedure wykres (wyk, wykop : tor);
   var
                            sterownik, tryb : integer;
                           i,j,x,y : integer;
m : double;
                            s.w:string;
   begin
                             sterownik := detect;
                            initgraph (sterownik,tryb,'');
x := trunc(getMaxX/3);
                          settextstyle(smallfont,vertdir,1);
                            setcolor (green);
                             i := 0;
                            while (wyk[i].y(wyk[i+1].y) do
                             i :=i+1:
                            str(wyk[i].y:0:3,w);
s := '<= h: '+w+' m';</pre>
                           outtextxy (x+round(wyk[i].x),y-round(wyk[i].y)-5,s);
str(wyk[length(wyk)-1].x:0:3,w);
s := '<= S: '+w+' m';</pre>
                            outtextxy (x+round(wyk[length(wyk)-1].x),y-5,s);
                            settextstyle(smallfont, horizdir, 1);
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settextjustify (centertext,toptext);
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                            s :='oporow osrodka';
                            outtextxy (round((getmaxx)/8),round(getmaxy/3+30),s);
                            settext.justify(lefttext.toptext);
                            settextstyle(smallfont,vertdir,1);
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#### Dev-Pascal

- Darmowy edytor kodu Pascala dla Windows
- Wiele przydatnych funkcji ułatwiających pracę
- Duża ilość szablonów projektów
- IDE oparte na kompilatorze Free Pascal/GNU Pascal
- Wada: dostarczane z przestarzałą wersją kompilatora, należy go zaktualizować

# Funkcjonalności Dev-Pascala

🚵 Dev-Pascal 1.9.2 - Untitled1			_ □	×
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end.				
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		Insertion		
🗸 Compiler 😭 Resource 🕼 Compi	e log			
Line/ Unit	Message			
•				•
				//.

### Aktualizacja kompilatora

mpiler options	×
Directories Pasca	al compiler   Code generation / Optimization   Linker
Add the direct	ory below to be searched for include files:
Add the follow	ing commands when calling compiler:
You can change t	he directory paths of your Free Pascal compiler
semi-colon (;).	uu mulupie uliectories by separating them with a
Bin directory:	C:\FPC\2.6.0\bin\i386-win32\
Pascal units files:	C:\FPC\2.6.0\units\i386-win32;C:\FPC\2.6.0\units\i386-w
Libraries directory:	C:\FPC\2.6.0\units\i386-win32;C:\FPC\2.6.0\units\i386-w
	,

# Nieprawidłowości kompilacji

ompiler optio	ns	×
Directories	Pascal compiler Code ger	neration / Optimization   Linker
Syntax o	ptions :	
🔽 Swite	ch some <u>D</u> elphi extension on	✓ Allow Label and Goto
📃 Inclu	de Assertion code	✓ Iry to be Delphi compatible
<u> </u>	ansistrings	Support C++ styled INLINE
🔽 Try to	o be TP/BP <u>7</u> compatible	Support macros like C (global)
	ort operators like C (*=, +=,	.) 🔽 Don't chec <u>k</u> the unit name
Executat	ble :	
🔲 Try to	o link dynamically	Try to link smart
🗖 Strip	all symbols from executable	, if the max
Current o	ompiler :	
Freep	bascal	O GNU Pascal
✓ <u>о</u> к	X Cancel ?	Help 🔶 🔶 🕂 Help

# Optymalizacja i architektura

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Optimiza O Smal O Quict O Best	tion: Code <opt< td=""><td></td><td></td></opt<>		
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# Szablony projektów

New Project X	New Project X
Project GUI Toolkits Additional Graphics Windows Application Console Application Windows Skeleton DLL	Project GUI Toolkits Additional Graphics Hello World Description: A template for creating GTK+ applications.
✓ <u>□</u> K X <u>C</u> ancel	✓ <u>□</u> K Cancel
New Project	And the second s
Project     X       Project     GUI Toolkits       Additional     Graphics       GTK+       Description:     A template for creating GTK+ applications.	New Project       X         Project       GUI Toolkits       Additional       Graphics         OpenGL Template       Description: A template for creating GTK+ applications.       Image: Complex application in the second se

### Przykład: Aplikacja okienkowa

⊡-😒 Project 1	program WindowsApp;			
🖳 🚹 Untitled1	{\$MODE DELPHI}			
	uses Windows;			
	<pre>const AppName = 'WindowsApp';</pre>			
	function WindowProc(Window: HWnd; AMessage, WParam,			
	LParam: Longint): Longint; stdcall; export;			
	begin			
	WindowProc := 0;			
	case AMessage of			
	wm Destroy : begin			
	PostQuitMessage(0);			
	Exit;			
	end;			
	end;			
	WindowProc := DefWindowProc(Window, AMessage, WParam, LParam);			
	end,			
	{ Register the Window Class }			
	function WinRegister: Boolean;			
	var WindowClass: WndClass;			
	begin			
	WindowClass.Style := cs_hRedraw or cs_vRedraw;			
	WindowClass.lpfnWndProc := WndProc(@WindowProc);			
	82:15 Insertion 75 lines in file			
🗸 Compiler 💼 Resourc	e 🕼 Compile log			
Line/ Unit	Message			
Resource file	Icon file not found (please change it in Project Options)			

## Dodawane ikony pojektu

Project options	Icon library				
Project icon: Project type: Do not create a console Create a DLL	Documentation	Editor	Danger		
Further object, library files or linker options (separate filenames by spaces) :	Communication	Software	25 Rescue	E	
Extra compiler options (only for this project) : Extra include directories (separate paths by a semicolon "?") :	Window		File Management		
Resource files (separate filenames by a semicolon ";" ) : D:\STUDIA\PRACA\rsrc.rc B Load resource (.rc) files	Food	Games	Folders	-	
Change project name : Project 1	✓ <u>U</u> se selected icon	X <u>C</u> ancel			
✓ OK       ✗ Cancel       ? Help         indowclass.style       :- cs_nkedraw or cs_vkedraw;         indowClass.lpfnWndProc       := WndProc(@WindowProc)					

## Kompilacja gotowego szablonu

program WindowsApp;		
{\$MODE DELPHI}		
uses Windows;	Windows App	
<pre>const AppName = 'WindowsApp';</pre>		
function WindowProc(Window: HWnd; AMess	age	
LParam: Longint): Longint; st	dca	
begin		
WindowProc := 0;		
Compilation completed		
case - completed		
""— Information:		
Project:		
Project 1		
end;		
Total errors: 3		
Windo	fes.	
end; Size of output file: 33280 bytes		
{ Regis		
function		
var Wind		
Windowcrass.styre cs_nkeuraw or cs	VR	
windowClass.lpinWndProc := WndProc(@W	indowFroc);	

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### Dziękuję za uwagę!