

Programming Terms

P	R	O	G	R	A	M	M	E	C	B	R	L
N	M	A	I	N	T	A	I	N	O	Z	P	A
Z	B	D	N	A	C	M	T	O	T	F	R	N
E	O	E	Q	L	T	G	L	A	K	U	O	G
L	O	S	E	A	A	E	S	R	B	N	C	U
T	L	I	P	R	A	T	E	X	T	C	E	A
C	N	G	W	N	I	G	L	A	P	T	D	G
E	C	N	E	R	E	C	E	R	D	I	U	E
J	Y	J	C	T	Y	L	X	Z	H	O	R	S
B	A	X	N	I	O	E	Z	Z	T	N	E	F
O	V	I	L	O	C	O	D	E	P	S	E	F
D	I	D	B	T	A	T	Y	P	E	M	E	B
G	M	V	I	S	U	A	L	D	J	V	K	T

Programme
Visual
Object
Languages
Text
Integer
Boolean
Test
Code
Design
Functions
Procedure
Maintain

BTEC National for IT Practitioners

Unit 6: Software Design & Development

Reasons for Choosing
Programming Languages



Objectives

- Understand what the reasons are for choosing to use different programming languages
- Produce a brochure in order to describe each reason providing an example of programming languages and their use

Assessment Criteria...

- Describe the factors influencing the choice of programming language (U6 P2)

Reasons for Choice of Language

- Organisational policy
- Suitability in terms of features and tools
- Availability of trained staff
- Reliability
- Development and maintenance cost
- Expandability

Organisational Policy

- Some companies (particularly large ones) have an organisational policy as to what computer hardware and software is to be used
- For example, a company might have a policy to use only Microsoft software because of the level of support that may be provided by such a large software vendor
- Another company might have chosen to use Apple Macintosh machines, while another might have a policy to use open-source software such as Linux

Suitability in terms of Features & Tools

- Two questions have to be answered when deciding on the suitability of a programming language:-
 - Will it work on the platform being used in the company?
 - Does it have appropriate features to suit the type of applications that have to be written?
- Some programming languages have been specifically designed for particular types of applications

Availability of Trained Staff

- In a commercial programming environment, the programmers who work for a particular company may already be skilled in using a particular language so that language may be the natural choice
- For a project where staff need to be recruited to complete the programming, it should prove easier to recruit staff for a popular language rather than a less widely used one. So, this may also be a factor to be considered when deciding which language to use

Reliability

- Some programming languages have features built into them which help to make the programs more reliable and less likely to crash
- The best example of this is the Ada language – it was designed from the outset to include features which make it reliable
- Ada is often used for safety-critical systems such as the fly-by-wire control system of the Boeing 777 aircraft

Development & Maintenance Costs

- Cost of developing and maintaining programs is an important consideration when embarking on a software development project
- Some languages have a reputation for cutting development costs by making it quick and easy to develop and maintain (update) programs
- For example, in the 1980s, report program generator (RPG) was specifically designed to allow the speedy creation of reports

Expandability

- Some software systems have to support hundreds or even thousands of simultaneous users
- Programs written for interactive websites may need to support a very large number of users without crashing
- Some languages expand or scale better than others and have features which support large systems

Task...

- **Produce a brochure** to describe the factors that influence the choice of programming language.

Extension Task...

- Carry out some research in order to identify different circumstances when the following programming languages would be used:
 - ADA
 - C++
 - Visual Basic
 - Cold Fusion
 - Cobol
 - Java
 - JavaScript