

Software Lab: InLab Advanced L^AT_EX

Pm9

19305R009

193050055

193050023

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Contents

1	Itemize, Enumerate and Description	2
1.1	Itemize	2
1.2	Enumerate	2
1.3	Description	2
2	Mathematical formulas and notations	3
2.1	Matrix	3
2.2	Equation Array	3
2.3	Prepositional Formulae using Various Operators	3
2.4	Mathematical Formulas	3
3	Quote	4
3.1	Quote	4
4	Algorithm and Pseudo Code	4
4.1	Tabbing	4
5	Tree	5

1 Itemize, Enumerate and Description

1.1 Itemize

- L^AT_EX typesets a file of text using the TEX program
- L^AT_EX is widely used in academia for the communication and publication of scientific documents in many fields, including mathematics, physics, computer science, statistics, economics and political science.
- L^AT_EX can be used as a standalone document preparation system or as an intermediate format
- **Have used renewcommand for the bullets to be bigger.**

1.2 Enumerate

1. L^AT_EX typesets a file of text using the TEX program.
2. L^AT_EX is widely used in academia for the communication and publication of scientific documents in many fields, including mathematics, physics, computer science, statistics, economics and political science.
3. L^AT_EX can be used as a standalone document preparation system or as an intermediate format.
4. L^AT_EX is intended to provide a high-level language that accesses the power of TeX in an easier way for writers.

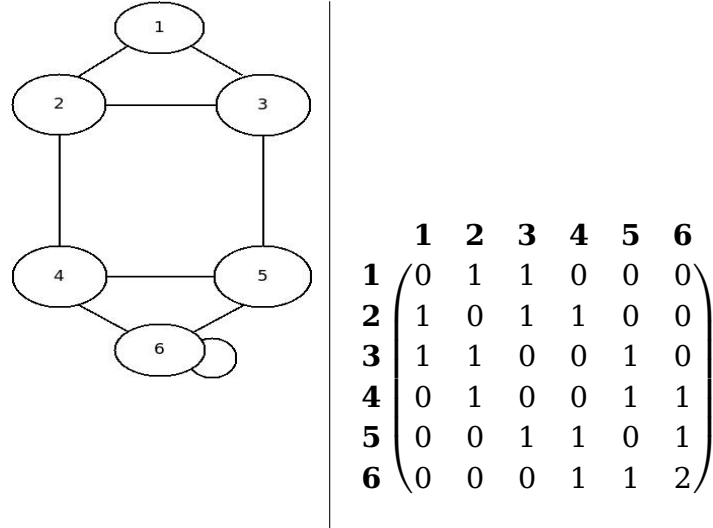
1.3 Description

- **Red** A colour at the end of the spectrum next to orange and opposite violet, as of blood, fire, or rubies. program.
- **Blue** A colour intermediate between green and violet, as of the sky or sea on a sunny day.
- **White** The colour of milk or fresh snow, due to the reflection of all visible rays of light; the opposite of black.
- **Black** The darkest colour owing to the absence of or complete absorption of light; the opposite of white.

2 Mathematical formulas and notations

2.1 Matrix

Adjacency matrix of corresponding graph.



2.2 Equation Array

$$\cos 2\theta = \cos^2 \theta - \sin^2 \theta \quad (1)$$

$$= 2 \cos^2 \theta - 1 \quad (2)$$

2.3 Propositional Formulae using Various Operators

$$\neg(\forall x)(\varphi(x)) \longleftrightarrow (\exists x)\neg\varphi(x)$$

$$(\forall x(\psi x \mathbf{\Lambda} \psi x)) \longleftrightarrow ((\forall x)\varphi(x) \mathbf{\Lambda} (\forall x)\varphi(x))$$

Greek Letters:	$\alpha A \beta B \gamma \Gamma \rho \rho P \sigma \Sigma \delta \Delta \varepsilon \varepsilon E$
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2.4 Mathematical Formulas

$$1. \quad \frac{\pi}{4} = \sum_{n=0}^{\infty} \frac{(-1)^n * \overbrace{(1 + 1 + \cdots + 1)}^n}{(2n+1)*n}$$

3 Quote

3.1 Quote

The margins of the quote environment are indented on both the left and the right. The text is justified at both margins. Leaving a blank line between text produces a new paragraph. The package `csquotes` offers a multilingual solution to quotations, with integration to citation mechanisms offered by BibTeX.

“Unlike the quotation environment, paragraphs are not indented. It’s important to remark that even if you are typing quotes on English there are different quotation marks used in English (UK) and English (US).”

4 Algorithm and Pseudo Code

4.1 Tabbing

```
//Breadth First Search Function
void BFS(list<long long int> queue, long long int length)
    long long int v;
    if(queue.empty())
        return;
    list<long long int>::iterator i;
    list<long long int> queue temp;
    while(!queue.empty()){
        v=queue.front();
        queue.pop front();
        for(i=adj[v].begin();i!=adj[v].end();i++){
            if(!pro ver[*i]){
                result[*i]=length;
                queue temp.push back(*i);
                pro ver[*i]=true;
                adj[*i].remove(v);
            }
        }
    }
    BFS(queue temp,length+6);
}
```

5 Tree

This tree is not an image it is a LaTeX based tree funcation. Figure this out.

