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CS203 Assignment 1 - Working with L^AT_EX

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1 Top 4 frontend frameworks (Usage of Figures)

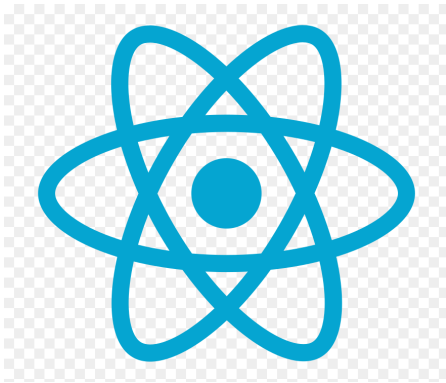


Figure 1: Reactjs



Figure 2: Svelte

1.1 Reactjs

React 1 is a declarative efficient and flexible library for building user interfaces. Originally created by Jordan Walke, the framework helps the designers to create interactive UIs faster than ever.

1.2 Svelte

Svelte 2 is a free and open source framework developed by Rich Harris. Released in 2016, the framework got its popularity within 3 years. The author has laid down new approaches for DOM manipulation and it is very popular in the community currently.



Figure 3: Vuejs

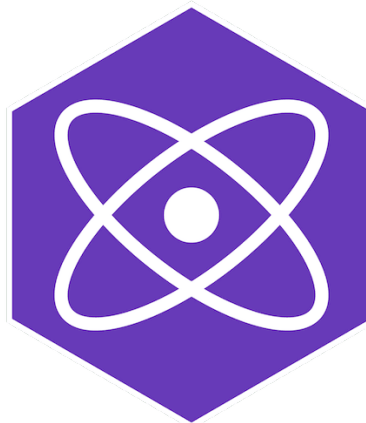


Figure 4: Preact

1.3 Vuejs

Vue.js is an open-source model–view–viewmodel JavaScript framework for building user interfaces and single-page applications. It was created by Evan You, and is maintained by him and the rest of the active core team members coming from various companies such as Netlify and Netguru.

1.4 Preact

Preact is a 3kb version of React with same modern API

2 Usage of tables

Year	Countries			
	India	Afghanistan	Bangladesh	Bhutan
2000	1.8	1.9	1.4	1.3
2005	1.5	1.9	1.4	1.3
2006	1.4	2.0	1.3	1.9
2007	1.5	2.0	1.3	1.9
2008	1.4	2.0	1.3	1.9
2009	1.4	2.0	1.3	1.8
2010	1.4	1.9	1.3	1.8
2011	1.3	1.9	1.3	1.8

Table 1: Population Growth rate

Nested multicol-multirow			A	B
			C	D
E	F	multicol		
G				

Table 2: Dummy table

3 Mathematics section

This $x^2 + y^2 = z^2$ is an inline equation.

$$e^{i\pi} + 1 = 0$$

Above we have an equation in a dedicated line without numbering.

$$(a + b)^2 = a^2 + 2ab + b^2 \tag{1}$$

Above we have a numbered equation.

$$\begin{aligned} \cos 2\theta &= \cos^2 \theta - \sin^2 \theta \\ &= 2 \cos^2 \theta - 1 \end{aligned}$$

Above we have a multiline equation.

$$\begin{pmatrix} 1 & 5 & 9 \\ a & b & c \\ 3 & 6 & 9 \end{pmatrix}$$

Above we have a matrix with parenthesis.

$$\begin{pmatrix} a & c & \dots \\ \vdots & \ddots & \\ b & & d \end{pmatrix}$$

Another matrix with dots.

Square root of 121 is $\sqrt{121} = 11$. (usage of square root)

$$\sum_{k=1}^n k = \frac{n(n+1)}{2}$$

Above we see one of the most basic usage of Summation.

$$\int e^x dx = e^x$$

$$\iint_V \sigma(u, v) dv du$$

Above we see basic usage of single and multiple integrals

$$\left[\frac{a}{\left(\frac{\{b+c\}}{d} \right) - (f + g)} \right]$$

$$\left\langle \frac{(a + b)}{c} \right\rangle$$

Above we see usage of fractions as well as nested parantheses/brackets with varying size.

4 Font styles

4.1 Bold font

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis

accumsan semper.

4.2 Italic font

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4.3 Teletype font

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4.4 Small caps font

LOREM IPSUM DOLOR SIT AMET, CONSECTETUER ADIPISCING ELIT. ETIAM LOBORTIS FACILISIS SEM. NULLAM NEC MI ET NEQUE PHARETRA SOLLICITUDIN. PRAESENT IMPERDIET MI NEC ANTE. DONEC ULLAMCORPER, FELIS NON SODALES COMMODO, LECTUS VELIT ULTRICES AUGUE, A DIGNISSIM NIBH LECTUS PLACERAT PEDE. VIVAMUS NUNC NUNC, MOLESTIE UT, ULTRICIES VEL, SEMPER IN, VELIT. UT PORTTITOR. PRAESENT IN SAPIEN. LOREM IPSUM DOLOR SIT AMET, CONSECTETUER ADIPISCING ELIT. DUIS FRINGILLA TRISTIQUE NEQUE. SED INTERDUM LIBERO UT METUS. PELLENTESQUE PLACERAT. NAM RUTRUM AUGUE A LEO. MORBI SED ELIT SIT AMET ANTE LOBORTIS SOLLICITUDIN. PRAESENT BLANDIT BLANDIT MAURIS. PRAESENT LECTUS TELLUS, ALIQUET ALIQUAM, LUCTUS A, EGESTAS A, TURPIS. MAURIS LACINIA LOREM SIT AMET IPSUM. NUNC QUIS URNA DICTUM TURPIS ACCUMSAN SEMPER.

5 Colour

5.1 Text colour

This text is red in colour.

This text is green in colour.

This text is orange in colour

5.2 Text background

The basic colours used to build other ones are Red, Green and Blue

5.3 Page colour

This page is intentionally coloured in black

6 Lists

6.1 Itemize list

- This is the start of the list
- In this type of list items have bullet points with them.
- It is also called unordered list.
- This is the end of the list

6.2 Enumerate list

1. This is the start of the list
2. In this type of list items have numbering with them.
3. It is also called ordered list.
4. This is the end of the list

6.3 Description list

First This is the start of the list

Second In this type of list items have title attached with them.

Third It is also called Descriptive list.

Fourth This is the end of the list

7 Pseudocodes

Algorithm 1 Quicksort with last element default pivot

```
Quicksort(array A,int begin, int end)
if begin < end then
    pivot  $\leftarrow$  A[end]
    part  $\leftarrow$  Partition(A,begin,end,pivot)
    Quicksort(A,begin,part-1)
    Quicksort(A,part+1,end)
end if
```

Algorithm 2 Partition

```
Partition(array A,int left, int right,int pivot)
l  $\leftarrow$  left
r  $\leftarrow$  right - 1
while TRUE do
    while A[l] < pivot do
        l  $\leftarrow$  l + 1
    end while
    while A[r] > pivot and r > 0 do
        r  $\leftarrow$  r - 1
    end while
    if l >= r then
        break
    else
        swap A[l]  $\leftrightarrow$  A[r]
    end if
end while
swap A[l]  $\leftrightarrow$  A[right]
return l
```

References

- [1] Worldometers: Population growth data,
<https://www.worldometers.info/world-population/india-population/>
- [2] The State of JS 2019, rankings,
<https://2019.stateofjs.com/>
- [3] Tutorialspoint
<https://www.tutorialspoint.com/>
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<https://tex.stackexchange.com/>
- [5] Wikibooks, L^AT_EX
<https://en.wikibooks.org/wiki/LaTeX>