

WEB APPLICATION “ELECTRONIC CALENDAR”

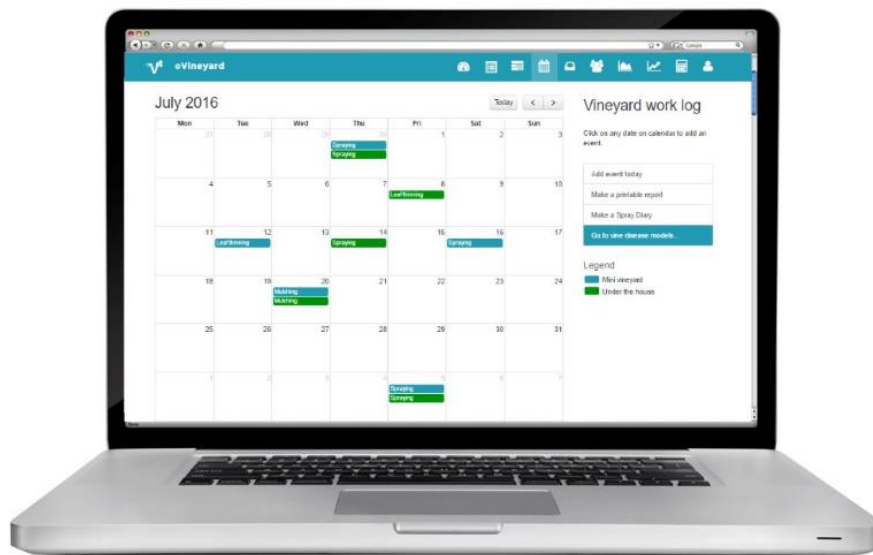
Dzmitry Aliksandrau

*Belarusian State University of Informatics and Radioelectronics
Minsk, Belarus*

Svetlana Boltak – department of Software for Information Technologies assistant

Electronic calendars are not useful only for business people, but are also a very helpful tool for schoolchildren and students. To help them with management of life activities like planning work, meetings, make work notes, manage workers, create reports.

The time when people were using pen and paper for making notes and planning work activities has passed. With the new technologies and an increase in Internet accessibility, electronic calendars came widely into use. Big corporations are massively using them for easier communication and control over the work of employees, as well as for the organization of work. Not only companies, but also individuals with lots of activities, are using an electronic calendar in order to plan their work and family activities. No matter the industry and organization, electronic calendars have proven to be a very effective tool.



Picture 1 – Electronic calendar web assistance

Benefits of using electronic calendars:

Never forget the event. Have you ever written down an important event in your calendar and then completely forgot about it? Are you questioning why? It's because you forgot to regularly check the calendar or/and nobody warned you on upcoming events. With electronic calendar, this is the past. You can make reminders (also: text message or email reminders) for special events, important meetings and work that has to be done in your daily activities or life [1].

Access everywhere and anywhere. Another positive side of electronic calendar is that you can access to it everywhere and anywhere. Even when you are on the go, out of your office or home. Basically, you can update your work log of the situation and schedule your future maintenance activities directly from your smartphone or laptop. Access to the calendar 24/7 allows you to check and update your meetings, events and daily activities anytime, day-and-night [1].

Never lose data. If you keep track of your maintenance activities on electronic calendar you will never again need to worry about losing your paper records of management tasks or important activities. All the records are available to you at any given moment, and directly analyzable. Having everything in one place also allows you to compare your yearly activities with previous time and figure out some important things to be improved [1].

Create reports. Every work activity is stored in a data base and can help create future events and appointments. While some require special forms to be filled others don't, either way, electronic calendars comes in handy in order to gather the data and create printed reports of yearly activities. You don't really need to print the reports, simply save it to your computer and open when needed [1].

Track due dates. Keeping an accurate and up-to-date calendar of due dates of important assignments, tests, projects and class discussions reminds you of what you need to complete and when.

Rather than being overwhelmed at seeing coursework as a long checklist of things you need to do, a calendar provides the space to plan for each due date at the appropriate time.

See availability, quickly. It's an unfortunate feeling when you receive and accept an invitation to a fun event, only to realize later that you already have a commitment during that time.

A calendar allows you to see quickly when you are free and when you have prior commitments. Planning events or other special occasions also becomes easier when you know your availability.

Calendar tips. Calendars are easy to personalize, depending on your work habits, access to technology and other preferences. Regardless of which route you choose, here are some insightful tips to get the most out of keeping your calendar:

- color code your various schedules – work, home, school, etc. – to easily distinguish where you spend your time;

- keep your calendar in a location that's easily accessible and visible;

- plan study times at consistent times to encourage the habit of studying;

- want to use electronic and paper calendars? Keep both for different uses or in separate locations.

For example, use a paper month-view calendar for special events and an electronic week or day-view calendar for more detailed assignments, meetings, etc.

Maintaining an accurate calendar can help you both in your academics and in your personal life – and can ease the overwhelming feeling of balancing a busy schedule.

Technology stack. From development prospective make sense to organize headless architecture.

React was chosen as a library for building user interfaces. Why *React*? From my expertise it is the most popular library created by Facebook. *React* makes it painless to create interactive UIs. Design simple views for each state in your application, and *React* will efficiently update and render just the right components when your data changes. Declarative views make your code more predictable and easier to debug. Build encapsulated components that manage their own state, then compose them to make complex UIs. Since component logic is written in JavaScript instead of templates, you can easily pass rich data through your app and keep state out of the DOM [2]. Most *React* applications use one state manager called *Redux*.

Redux is a predictable state container for JavaScript apps. It helps you write applications that behave consistently, run in different environments (client, server, and native), and are easy to test. On top of that, it provides a great developer experience, such as live code editing combined with a time traveling debugger.

Moreover, *React* code base can be shared for building native mobile applications. *React Native* lets build mobile apps using only JavaScript. It uses the same design as *React*, letting compose a rich mobile UI using declarative components. The apps which are building with *React Native* aren't mobile web apps because *React Native* uses the same fundamental UI building blocks as regular iOS and Android apps.

Node.js is a good choice for back-end. *Node.js* is a JavaScript runtime built on Chrome's V8 JavaScript engine. Many people wonder how a single-threaded *Node.js* can compete with multithreaded back ends. As such, it may seem counterintuitive that so many huge companies pick *Node* as their back end, given its supposed single-threaded nature. To know why, we have to understand what we really mean when we say that *Node* is single-threaded. JavaScript was created to be just good enough to do simple things on the web, like validate a form or, say, create a rainbow-colored mouse trail. It was only in 2009 that Ryan Dahl, creator of *Node.js*, made it possible for developers to use the language to write back-end code. Back-end languages, which generally support multithreading, have all kinds of mechanisms for syncing values between threads and other thread-oriented features [3].

MongoDB is an open source database management system (DBMS) that uses a document-oriented database model which supports various forms of data. It is one of numerous no relational database technologies which arose in the mid-2000s under the NoSQL banner for use in big data applications and other processing jobs involving data that doesn't fit well in a rigid relational model. Instead of using tables and rows as in relational databases, the *MongoDB* architecture is made up of collections and documents [4].

Docker unlocks the potential of organizations by giving developers and IT the freedom to build, manage and secure business-critical applications without the fear of technology or infrastructure lock-in. By combining its industry-leading container engine technology, an enterprise-grade container platform and world-class services, *Docker* enables to bring traditional and cloud native applications built on Windows Server, Linux and mainframe into an automated and secure supply chain, advancing dev to ops collaboration and reducing time to value. Because *Docker* increases productivity and reduces the time it takes to bring applications to market, organizations have the resources needed to invest in key digitization projects that cut across the entire value chain, such as application modernization, cloud migration and server consolidation. [5] Also *Docker* protects data base. It is not possible to connect to data base directly and steal all data while port will not be exposed from *Docker* container to local machine. Only other containers have access to data base.

List of used sources:

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ПРИЛОЖЕНИЕ ДЛЯ АВТОМАТИЗАЦИИ ОРГАНИЗАЦИИ ЗАДАЧ И РАБОЧЕГО ГРАФИКА ПРЕПОДАВАТЕЛЯ

Арзуманян А.С.

Белорусский государственный университет информатики и радиоэлектроники
г. Минск, Республика Беларусь

Трус В.В. – ст. преподаватель

В рамках интеграции информационных технологий в жизнь человека, преподаватели всё чаще сталкиваются с необходимостью организации рабочего графика с помощью различных сервисов. Они значительно облегчают процесс ведения расписаний и задач, так как позволяют сделать управление рабочим графиком более удобным, а также позволяют в любой момент получить необходимую информацию о расписании. Существует множество мобильных приложений для организации рабочего графика, но большинство из таких сервисов не учитывают преподавательскую специфику, не имеют синхронизаций с веб-сервисами, а также не дают статистическую информацию о затраченном времени.

Ключевым преимуществом использования мобильного приложения для организации расписания является то, что вся необходимая информация легкодоступна и имеет формализованный вид. Пользователь может в режиме реального времени использовать только актуальные данные.

Планирование расписания и задач является важным пунктом в работе преподавателя, которому необходимо держать постоянный контроль над большим объёмом информации, так как профессия преподавателя предполагает работу с широким спектром задач и коммуникацию с людьми, которых обучает преподаватель, и с коллегами по работе[1].

Управление временем – это действие или процесс тренировки сознательного контроля над временем, потраченным на конкретные виды деятельности, при котором специально увеличиваются эффективность и продуктивность. Управление временем может помочь получить ряд навыков, инструментов и методов, используемых при выполнении конкретных задач, проектов и целей. Управление временем включает в себя широкий набор решаемых задач, среди которых:

- постановка целей;
- планирование времени;
- анализ затрат времени;
- определение приоритетов;
- создание списков [2].

Современные мобильные приложения хорошо справляются с вышеупомянутыми задачами. Благодаря интерактивному и интуитивно понятному интерфейсу пользователь в пару кликов может добавлять, редактировать или просматривать необходимую информацию о расписании. Большинство таких приложений организованы согласно клиент-серверной архитектуре. Нередко случается, что приложения используют в качестве серверной части какой-нибудь сторонний сервис. Так, например, многие приложения для управления расписанием используют сервер Google-календаря, имеют синхронизацию с ним и используют его базу данных для хранения. Данный подход является удобным, так как пользователю предоставляется большой функционал, а программисту – простота разработки.

Нередко, так называемые, приложения-планировщики позволяют выставить степень важности задаче. Однако, помимо важности существует другой не менее важный фактор, который не учитывают данные приложения – срочность исполнения. Так, один из президентов Америки изобрёл собственную методику для управления временем, называемую “таблицей Эйзенхауэра”. Суть метода состоит в том, что все задачи делятся на следующие категории:

- срочные (важные) задачи, которые должны выполняться в первую очередь;
- срочные (менее важные) задачи, которые при необходимости можно делегировать;
- менее срочные (важные) задачи, которые не критичны и могут быть выполнены в ближайшее время;
- менее срочные (менее важные) задачи, которые лучше всего сделать при наличии свободного времени или делегировать другому человеку.

Для более эффективного планирования расписания и задач преподавателя, а также для получения статистических данных было разработано мобильное приложение на базе операционной системы Андроид. Таким образом преподаватель сможет удобным ему образом создавать элемент