MIRNOVA Academy

MIRNOVA --- “IT” and “CS” Requirements

This pertains to Persons who will work with us and for us in MIRNOVA (all branches of activity)

We need people who will be active and committed members of our Team. They will typically work in two roles and their work may be part-time (on some regular basis) or full-time as development progresses:

1. as tutors and mentors (in IT and CS (computer science) subjects, including relevant mathematics) to students ranging in educational levels from middle-school (@ ages 11+) and high-school, and also some at university levels.

2. as technical professionals, developing the IT and CS for everything that is required to implement and support our activities.

Some persons may be active in both roles, and some may concentrate upon one or the other.

What Activities and Work Tasks?

These activities include:

1. MIRNOVA Academy – the three Programs (Education, Research, Communications) - but the main (initial) focus is upon the educational STEAM (STEM) projects and the communication activities (Mirnova Media; internet channels, broadcasting, webinars, social network activity).

2. Mirnova Academic Tutorship Consortium (MATC) – the business of providing tutoring and mentoring to individual students and groups of students through schools, leisure centers, and companies. Most of the students will be ages 10-17 but some may be adults (e.g., employees in different private companies or agencies).

About the MIRNOVA Academy and its STEAM (STEM) Program and its Projects:

The goals of the tutoring, mentoring and training are to advance the knowledge and skill levels of students to encompass better opportunities for them in school and future employment as:

- Software Engineers and Internet Developers
- Robotics Engineers
- Cryptocurrency, Cryptography and Cybersecurity Experts
- and as professionals in many other fields as well - advancement in IT/CS topics will assist in virtually all other professional fields in the sciences, medicine, and business, etc.

More information is available in the preliminary-release texts at www.mirnova.org and in documents (PDF, PPT, XLS) available through Mirnova Academy.

About the IT/CS technical work for Mirnova:

The tasks encompass:

- Websites for general public visits and presentations (low interactivity)
- Websites for students to use with online courses, lessons, workshops (high interactivity, multi-media)
- Websites that are principally Internet Channels for broadcasting video and social media content (multi-media, high-bandwidth, and much like (and employing) YouTube, WordPress, and also in some ways like www.khanacademy.org and even, to some extent, like mainstream news media (e.g., “channels” where there are articles, blogs, some potential for comments, and frequently audio and video content).
• DBMS – databases that are used within Mirnova, including by students and mentors, and also with data that will be made available to corporate and other clients. Such DBMS tasks will be characterized by:
  o Conventional, typical SQL interactions
  o High volume of content
  o Multi-media content
  o Low volume of transactions
  o Low volume of external user connectivity

Preliminary outline and elementary content is at http://mirnova.org --- this website needs to be developed as a "responsive web" site, with the proper style, layout, graphics, and functions that are appropriate.

There is information about the Tutorship business activity at http://matc.mirnova.org (one PDF document).

There is a proto-page describing the Communications Program, “Mirnova Media,” at http://media.mirnova.org.

Here are two examples of other sites that use attractive responsive-web templates – the content is different, but the layouts and styles give an example of what can be used.


There are many templates available, and basically these use HTML 5, CSS 3 (e.g., Ethan Marcotte, “Responsive Web Design” – a classic text, or materials @ W3schools.com). Initially we need the “basics” but the structure and both web pages and server-side code must be proper for extending everything as we progress with interactive content, lessons, dynamic data, and extensive video and audio remote sessions that will include real-time interfaces with a variety of instruments ranging from cameras to laboratory instruments.

The IT services will need to be fully usable for desktop, laptop, tablet and phone devices.

We will need the capability to integrate applications like some of the following in terms of functionality:
  • Viber, Skype, WhatsApp, Adobe Connect, GoToMeeting, MeetingBurner, Yugma, WebEx.

Note: We want to avoid using software and services that “lock in” too much with Google, Facebook or Microsoft for many strong reasons.

**IT/CS technical skills that are important:**

First and foremost and throughout:
  • HTML 5 and Responsive Web Design Methods
  • CSS
  • Javascript
  • PHP and/or Python
  • Application tools for composition and editing of images and videos

Progressively important and valuable with the “core team” people:
  • Java
  • C++ (C, C#)

Progressively important, especially for Projects with students and for our long-term commercial projects:
  • Common Lisp
  • Clojure
  • Haskell
  • Erlang
    also these can be valuable as foundations for persons to work in the above functional languages
• Scheme
• Scala (superior strengths vs. Java and some compatibility-fit with functional languages)
• AutoDesk products (CAD tools of all types)
• Mathematica, Matlab, R, SAS, other math/statistics/modeling tools
• 3D CGI graphics design tools

Everything else can be discussed through meeting in-person or online.

Contact:

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