Mid-Term Rubric

Wednesday, March 2, 2016 12:24 PM

Deliverables:
Information on font sizes, spacing, and APA style can be found in the ITM student handbook
***Note your group may need to add more details in certain sections**
Formatting style located starting on page 16
http://appliedtech.iit.edu/sites/sat/files/pdfs/ITM/ITMUndergraduateStudentHandbookFall2015.pdf

Paper must cite sources from the DevOps Handbook, Gene Kim's DevOps presentation, and the infrastructure case studies

Grades will be individual per-section and there will be a team grade assigned for the entire paper. You will receive feedback on your submission

Total Points:
Paper:
(175 points) 250 points (35 of 50 elements listed below)

Writing:
Grammar, Spelling, APA format, and Citations (5 point scale per category) 20 additional points

Deliverable: Individual paper: name the file: lastname-firstname-team-X-slacknameteam-your-role.docx
Group submission - use the team name of your slack channel.docx
Important submission must match

Each section/bullet point is graded on a 4 position scale

5 points
Exactly explained and demonstrated described concept. Additionally provided proper visual authentication, written documentation, and proper citation from textbook.

4 points
Adequately explained and demonstrated concept. Provided visual authentication, written documentation, and proper citation from textbook. Some components were missing and or not clear.

2 points
Somewhat explained and demonstrated concept. Provided visual authentication, written documentation, and proper citation from textbook. Some components were missing and or not clear.

1 point
Inadequately explained and demonstrated concept. Did not provided all necessary visual authentication, written documentation, or proper citation from textbook. Some components were missing and or not clear.

Project Management

- Tech choices and justifications (ITM 301, ITMO 456, ITM 421, ITMD 361, ITMD 362)
    - Here you will justify your technology choices for your project comparing your project to the tech-stacks of competing/similar companies
        - (1) Explain your and their development methodology and choices (all below) (citations)
        - (2) Describe which Database platform will be used and why
        - (3) Describe which Operating system & Application stack your project used and why

        - (4) Describe which programming language(s) / frameworks your project used and why
        - (5) Describe and explain the development tools you chose and why
        - (6) Explain your Value Stream/flow diagram - what is the goal of the application

- Cost justifications (ITMM 471, ITM 301, ITM 100)
    - Conduct research on estimated costs to run your project as a 24/7 hosted based business
        - (7) AWS
            - https://aws.amazon.com/
        - (8) AZURE
            - https://azure.microsoft.com/

- Show and Explain Trello usage for Project Management (ITMD 411) (Kanban)
    - (9) All atomic jobs/tasks should be listed and assigned to a person or person(s)
    - (10) Must use labels/assignments to determine who owns what task.
    - (11) Cards should have signs of action/discussion, notes, links, or references to Github issues (to the extent possible)
    - (12) Project must show progress - that matches build artifacts from your GitHub account

- Use Slack at minimum for build status notifications (ITM 301, 311, 312, ITMD 411, ITMO 456)
    - (13) To ITMT-430 #general channel or other noted channel

- Build Tool and Continuous Integration (CI) Server (ITMO 456, ITMM 471, ITMD 421)
    - (14) Document and describe how your will deploy a DEV, TEST, and PROD environment in an automated fashion.
        - A CI/CD build tool will be used in this case
    - (15)Use of configuration files will be needed to make this happen.
    - (16) Deploy, configure, and **secure** a Build system

- Use of Source Control (ITM 311, 321, ITMD 411, ITMO 456, ITMD 421, ITMO 440)
    - (17) GitHub **must** have build instructions (README.md) so that anyone can build the project and deploy it (for midterm just a DEV environment) (Final project will have DEV, TEST and PROD)
    - (18) Must have **weekly significant commits** in all categories (UI/UX, development. Infrastructure, Schemas) showing visible application history
    - (19) Demonstrate all Artifacts must be included (which includes)
        - (20) Design
        - (21) Docs
        - (22) Infrastructure deployment code
        - (23) SQL Schemas and Configuration (Include) script for passwords and IP addresses
        - (24) Code

- Bug tracking (ITM 311, 312, ITMD 411)
    - (25) Bugs need to be tracked in GitHub issues or Trello - your team defines it and the person responsible for Testing and security must lead and run this portion of the project.

Infrastructure (Operations - Ops)

- Use of load-balancer (ITMO 456)
    - (26) Deploy an Elastic Load-Balancer (ELB) in front of your application
    - (27) Use Elastic (permanent) IPs for all designed infrastructure pieces.
        - This must match your Visio diagrams
    - (28) Databases will be installed on discrete server (separation of purposes)

- Database functions **(Application) (ITMO 456, ITMD 411)**

    - (29) Create Master/Slave replication in your database
        - (30) Separate your application to send your database **writes** to an SQL Master
        - (31) Separate your application to send your database **reads** to an SQL Slave

- Complete Visio diagram of infrastructure placed into Github
    - (32) Use the standard Visio tools and AWS stencils for any Cloud items
        - https://aws.amazon.com/architecture/icons/

- Application Metrics (ITMO 456, ITMD 361, ITMD 411)
    - (33) Describe the type and nature of the metrics your application will collect and display
    - (34) Explain which tools your will use for and why
    - (35) Capture at a minimum: mean, median, and 75% and 98% percentiles for response time for all database queries and HTTP requests (MATH)

Application Developers:

- CAS authentication (ITMD 411)
    - (36) Users authenticate through @hawk.iit.edu (You will be connected to OTS who will give you the necessary libraries)
    - (37) Implies you will need to use **session** as well in your application (ITMD 411)
        - Person responsible for testing and security will need to prove that Http Session is in place and working

- Creation of system and user level accounts (ITMM 471, ITMD 411)
    - (38) Anonymous (non-authenticated), authenticated, and admin users use of the website
        - Administrator has additional UI elements and access to introspection features
        - Based on the user being authenticated additional options become visible/invisible
        - Your CSS/design will have to take this into account
        - There will be only one system
        - Do not create a registration portion of your application (assume for this that all users are pre-registered)
    - (39) Develop and code your project based on specifications and features outlined in your documentation
    - (40) Coding features that are deployed must match Trello cards and movement and notes must track (features or tasks outstanding should be in the "todo" vs. "done" category and "done" means "done" or is use.

- Must have operational introspection **(Infrastructure) (ITMO 456, ITMO 411)**
    - (41) Website page where sys-admins can turn on or off features of software
        - Must have a feature that turns the site into **read-only** with the push of a button by system administrator
        - This requires you to turn UI elements visible and invisible
    - (42) Must have a database save/restore backup feature for entire site

Security and Testing (ITMD 361, 362, ITMS 448, ITMD 421)

- (43) Explain and demonstrate methods you are using to:
    - Make sure site is secure from SQL injections
    - Applications are secure via firewalls
    - Changing default passwords
    - Application is not vulnerable to CSS/XSS
    - How the site uses http session to control logins vs non-authenticated

- (44) Must encrypt the content of databases
- (45) Must use TLS/SSL cert from letsenrypt.org for production site

Testing and UI/UX (ITMD 362, ITMD 448)

- UI/UX design outlines (ITMD 362)
    - Present your outlines and mockup designs
        - (46) Show the change over time of your UI/UX based on feedback and bug tests
        - (47) Justify and explain your UI/UX design choices for each page in your application
            - Based on ideas learned in ITMD 434/362
        - (48) Designs must be stored in GitHub and your commit history must show changes
- (49) Demonstrate how usability bugs were tested, processed, and eliminated explain and demonstrate how this was achieved
- Explain and demonstrate how your application was tested with real and valid data of consequence **(Testing and Security) (ITMD 411, ITMD 421)**
    - (50) Describe the method used to create valid test data.
    - Create pre-populate items/questions/schemas for usage testing (minimum 50 users)
        - https://github.com/marak/Faker.js/

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