



MAINTENANCE PLAN

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Servers, Databases, and Domain Names

To begin coding we must set up servers and a domain name. After looking on GoDaddy.com and searching for RestaurantApp we found that the cheapest option that still holds our products name is the domain restaurantapp.us. If we end up choosing this site it will cost us \$1.00 for the first year and \$19.99 each year after that.

Based upon our research, choosing a server depends on our bandwidth needs and database memory needs. The following formula is used to calculate bandwidth needs^{1,2}:

$$\text{Bandwidth needed} = \text{Daily visitors} * \text{Page views per visitor} * \text{Avg page size} * 31 \text{ days}$$

We are estimating around 200 daily visitors with an average of 10 page views per visitor. We are estimating our average page size to be around 150 KB once fleshed out fully. This gets us a bandwidth of 9,300,000 KB or 9.3 GB per month. To be safe we will round up and require 10 GB per month restaurant. And since our goal is to have 10 restaurants for beta testing we will require 100 GB for bandwidth.

Currently we are using MySQL for the database needs. There are other databases such as MongoDB, but because Group 11 has no experience in anything but MySQL we will be considering servers based upon MySQL needs. The following table demonstrates the memory size needs based up our current implementation. We also assume that we will allow the restaurant to store a max of 10,000 entries in the accounting table.

Table	Approximate Size (KiB)	Number of occurrences per restaurant	Total size (KiB)
Maintenance (with all 10 categories filled)	2.1	1	2.1
Cart_table	3.0	10	30.0
Bill_table	3.0	10	30.0
OrdersToCook	10.0	1	10.0
Menu	10.0	1	10.0
Accounting (per entry)	0.1125	10,000	1,125.0
Total space needed per restaurant			1,207.1
Total space needed for 10 restaurants			12,071.0

Four server companies were examined to estimate costs to run and host our website: 1and1 Services, Rackspace, SoftLayer, and Google Cloud Platform. Their information is summarized below by company.

1and1 Services³

Entry level servers include the L4 and L4i packages. The L4 package includes an AMD Quad Core processor. It's speed is 4 (cores) x 2.1 GHz. The RAM available for this is 4 GB DDR2. Hard disk space is 750 GB. The L4i package includes an Intel Quad-Core processor. It's speed is 4 (cores) x 3.1 GHz with a 3.4 GHz "turbo boost." The RAM available for this is 12 GB DDR2. Hard disk space is 1000 GB.

L4 Price: \$35 for first six months and \$70/month on

L4i Price: Free for first three months and \$80/month afterwards

Additional SSL Certificate security fee: \$50/month

Rackspace⁴

Rackspace offers a build your own server package adding cost per item wanted. The base package includes IT maintenance costs.

Base package: \$50/month

1 GB server space: \$23.36/month

1 GB MySQL: \$44.55/month

100 GB of bandwidth: \$12.00/month

Total Price: \$119.11/month

SoftLayer⁶

SoftLayer offers a basic entry-level "Virtual" server. This includes a 1 x 2.0 GHz core. The RAM included with this package is 1 GB. Bandwidth allowance is 250 GB. The server includes MySQL for an extra fee

Total Cost: \$59.52/month

Google Cloud Platform⁵

No data storage for dynamic web pages like ours but Google does offer a very robust SQL database service. This service comes with automatic data encryption which is very useful from a security standpoint. Google also offers a very flexible "pay as you use" billing system which starts at \$0.025 per hour of use. Storage is also very affordable, starting at \$0.24 per GB per month.

Total Cost: \$18.84/month

Decision:

Based upon our need of 100 GB of bandwidth and 0.012 GB of MySQL and the company fulfilling all our requirements while being the cheapest option. We have chosen SoftLayer for our servers and database needs.

App Store Costs

Because our shift in business plan, as described in the Deployment Plan document, we will not only need servers for the website domain but we will also need to give the customers an easy way to download our tablet and mobile applications to their devices. We will do this by adding the app to Google Play and creating a link to it on our main website.

The first step is to register our company for a \$25 fee at the Google Play Publisher site. In order to publish the app you are required to upload the APK under 50 MB, add a title for the app (max 30 characters), add a description of the app (max 4000 characters), upload a high-res icon, and at least two screen shots. These are the bare minimum requirements for adding an application to the Google Play catalog.⁹

Restaurant App will focus on Android devices first, but will eventually move into an Apple System for iPads and iPhones as well. To upload an app to the App Store you must first sign up for a \$99 membership for the year.¹⁰

Payment for Product

Once our product becomes more popular, we will need business solutions to help keep track of all of our clients. To process payments (to us from our clients), we will need a monthly payment processing service.

One option is PayPal. A PayPal business account is very flexible. PayPal standard charges on a per payment basis. Their rate is 2.9% + \$0.30 per transaction. It is also possible to sign up for recurring billing, which would help simplify financial transactions for both us and our customers. The price for recurring billing is \$10 per month.⁷

A competitor to PayPal is Xero. They have a similar service to PayPal but it is more geared towards handling subscription style billing instead of the “vendor” style business. Xero also offers basic accounting services such as payroll management and invoice management. Xero’s standard plan is \$30 per month but offers much more of the accounting services that a small business would need.⁸

Developers

A major cost of starting and running our business will be the salaries of the software developers needed to maintain and expand upon our product. These salaries will be a large part of our annual expenses. To estimate these expenses, we have researched average salaries and hourly wages of software developers. In order to keep costs down, we are focusing on staying in the Kansas City area. According to Glassdoor, the average salary of a software developer in Kansas City is \$63,174. This is in sharp contrast to the national average of \$85,000. However, software developer salaries range from as low as \$44,000 to as high \$127,000.¹¹ Because these costs are so high for a newly started company, we will most likely attempt to hire interns or freshly graduated developers to assist in the application. If we decide to pay them \$15/hr that will be \$2,400/month. We must also keep in mind that our hiring budget will be directly correlate to how much VC money we can acquire. Another way we could keep costs low is by having part-time developers and offering them a stake in the company as opposed to a large salary.

From the new business plan for Restaurant App we will need to focus on hiring specific types of developers. We will need someone specializing in android application development, someone for security, and someone who knows internet networks well to make the speed of the products as fast as possible. At the moment most of platform uses PHP and SQL so we will be needing someone who is knowledgeable in those languages. An unnecessary addition to the team would be a UI developer for websites and Android, but to cut on costs we could self-teach to fill this role.

Office Space

Our company goal is to join an incubator which could provide us with office space or at least discounted office space. However if that plan is not executable we will work from home, meeting at libraries to save money for a time.

If a time comes where we can afford office space it should be known that on average rental rates in Kansas City for office space is \$17.91 NNN per square foot as of quarter one of 2016. We estimate needing about 1,000 square feet to house a team of 5 full time developers. That would cost us \$17,910 annually.¹²

Not only would we need office space but we would need desks and chairs for the office space. This cost could be low if we find a mish-mash of furniture on Craigslist. Based on past furniture purchases via Craigslist we can estimate that five desks and five chairs would be around \$500.

Summary

The costs for the first year are summarized in the excel chart below. As can be seen this is a rather high projection and most likely we will have to do away with hiring developers and offer them a stake in the company or just do everything ourselves. Another option is to get a large offer from a VC which is highly unlikely because we are not a new concept in the market. All in all this form teaches us that if we are unable to obtain funding that Restaurant App must be an on the side project until it can grow the product and obtain funding and users.

Item	Price/year
Server	\$ 714.24
Google Play	\$ 25.00
App Store	\$ 99.00
Pay Pal	\$ 100.00
Intern Developer	\$ 28,800.00
Intern Developer	\$ 28,800.00
Office Furniture	\$ 500.00
Office Space	\$ 17,910.00
Total	\$ 76,948.24

Citations

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